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CHILDREN. HOME. CO-OPERATION. CREATIVITY.

**Designcommunication as an educational methodological tool to support the
development of soft skills**

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development of soft skills**

Doctoral Dissertation
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TABLE OF CONTENTS

1. INTRODUCTION.....	1
1.1 CHILDREN. HOME. CO-OPERATION. CREATIVITY.	1
1.2 VISION, POSITIONING: EDUCATION SCIENCE AND PEDAGOGY	2
1.3 TEACHING AND EDUCATION	4
1.4 JUSTIFICATION OF TOPIC SELECTION, THE UNDERLYING PERSONAL MOTIVATION OF THE DECISION.....	6
1.5 ACTUALITY AND ECONOMIC, SOCIAL, ENVIRONMENTAL RELEVANCE OF TOPIC SELECTION.....	7
1.6 MY PHILOSOPHY OF SCIENCE APPROACH DETERMINING THE THESIS.....	9
1.7 INTERDISCIPLINARY APPROACH AND THE OPPORTUNITY OF UNITY IN DIVERSITY	12
2. OVERVIEW OF THE THEORETICAL FRAMEWORK, EDUCATION IN FOCUS.....	12
2.1 THE PRESENT OF THE PRIMARY EDUCATIONAL INSTITUTIONS	13
2.1.1 <i>Conceptual meaning of competence</i>	<i>14</i>
2.1.2 <i>Innovation efforts in the sector.....</i>	<i>14</i>
2.1.3 <i>Researcher's dilemmas in the current public educational situation in the field of pedagogy</i>	<i>15</i>
2.2 THE PRESENCE OF CREATIVITY AT PRIMARY SCHOOLS BURDENED BY RULES	16
2.2.1 <i>Definitions of creativity</i>	<i>17</i>
2.2.2 <i>Environmental factors promoting and inhibiting creativity</i>	<i>20</i>
2.2.3 <i>Creativity capable of developing</i>	<i>21</i>
2.2.4 <i>Factors determining creativity</i>	<i>23</i>
2.2.5 <i>Creativity as endangered species</i>	<i>24</i>
2.3 MOST IMPORTANT EDUCATIONAL METHODOLOGY OPPORTUNITIES IN CO-OPERATION	25
2.3.1 <i>Co-operation: team spirit vs. competitive spirit</i>	<i>25</i>
2.3.2 <i>Co-operation-based active learning.....</i>	<i>26</i>
2.3.3 <i>Problem-Based Learning.....</i>	<i>27</i>
2.3.4 <i>Co-operative learning organisation</i>	<i>30</i>
2.3.5 <i>Group work, as the driving force of co-operation at primary school.....</i>	<i>34</i>
2.4 ROLES AND CHALLENGES OF THE TEACHER.....	36
2.4.1 <i>Teacher-student relationship</i>	<i>37</i>
2.4.2 <i>The teacher as the engine for change</i>	<i>40</i>
2.4.3 <i>How can a teacher teach students how to start a business?.....</i>	<i>41</i>
2.4.4 <i>Creative teachers, creative environment, creative children</i>	<i>43</i>
2.4.5 <i>The catalyst of co-operation: roles of the teacher in group work.....</i>	<i>46</i>
2.5 STUDENTS: GENERATION Z WITH NEW EDUCATIONAL NEEDS	48
2.5.1 <i>General characteristics of generation Z.....</i>	<i>49</i>
2.5.2 <i>Online-Offline network of relationships</i>	<i>50</i>
2.5.3 <i>Generation Z and group work</i>	<i>51</i>
2.5.4 <i>A generation rejecting formal power relationships</i>	<i>52</i>
3. POTENTIAL LINKAGES OF EDUCATION AND ECONOMY	54
3.1 MULTIPLIED TASKS OF PEDAGOGY	55
3.2 EDUCATION AS AN INVESTMENT.....	55
3.3 SOFT SKILLS AS THE MOST IMPORTANT EMPLOYER EXPECTATIONS?.....	57
3.3.1 <i>Soft skills: definition and the inherent business potential.....</i>	<i>57</i>
3.3.2 <i>Expectations towards young employees</i>	<i>60</i>
3.3.3 <i>Efforts to develop soft skills in education and beyond.....</i>	<i>63</i>
3.3.4 <i>Measuring practice of soft skills.....</i>	<i>66</i>
3.4 ENTREPRENEURSHIP EDUCATION IN THE CLASSROOM	68
3.5 SUMMARY	71
4. DESIGNCOMMUNICATION AS METHODOLOGICAL INITIATIVE	71
4.1 THE ORIGIN AND DEFINITION OF DESIGNCOMMUNICATION.....	72
4.1.1 <i>Develops and evolves.....</i>	<i>72</i>
4.1.2 <i>Design and communication</i>	<i>73</i>
4.1.3 <i>Everyone is a designer.....</i>	<i>74</i>

4.1.4	<i>Convergent and divergent thinking</i>	74
4.1.5	<i>Problem is the opportunity itself</i>	75
4.2	THE MAIN THESIS OF DESIGNCOMMUNICATION	76
4.3	VALUE CATEGORY AND SUSTAINABLE NATURE OF DESIGNCOMMUNICATION	77
4.3.1	<i>Empathic and good</i>	77
4.3.2	<i>Sustainable</i>	77
4.3.3	<i>Besides knowledge, it encourages recognition</i>	78
4.4	THE EDUCATIONAL ASPECT OF DESIGNCOMMUNICATION	78
4.5	DESIGNCOMMUNICATION IN RELATION TO DESIGN THINKING	79
4.5.1	<i>Design thinking</i>	80
4.5.2	<i>Systematic overview of differences</i>	81
4.5.3	<i>Connection points</i>	81
4.6	DESIGNCOMMUNICATION IN THE WIDER SCIENTIFIC FIELD	83
4.6.1	<i>Post-normal science approach</i>	83
4.6.2	<i>Art-based research and education</i>	84
4.7	WIKINOMICS CO-OPERATION, AS AN IMPORTANT CATALYST OF DESIGNCOMMUNICATION	86
5.	METHODOLOGICAL APPROACH OF THE RESEARCH, RESEARCH PLAN	88
5.1	EXPLORATION OF RESEARCH AIMS AND QUESTIONS	88
5.2	QUALITATIVE METHODOLOGICAL APPROACH	89
5.3	RESEARCH STRATEGY AND SAMPLING TECHNIQUES	90
5.3.1	<i>Multimethod qualitative research strategy</i>	91
5.3.2	<i>Sampling techniques</i>	93
5.4	QUALITATIVE DATA COLLECTION METHODS	94
5.4.1	<i>In-depth interview: defining the framework, identifying the problems</i>	95
5.4.2	<i>Highlighted data collection method of the research – Participatory observation</i>	96
5.4.3	<i>Memory book: reflections written by students</i>	100
5.5	APPLICATION OF PROJECTIVE TECHNIQUES	101
5.6	CODING AND ANALYSIS	102
5.7	TRIANGULATION, GUARANTEE FOR VALIDITY	103
5.8	VISUAL SUMMARY OF THE RESEARCH PLAN	104
5.9	ROLE OF THE RESEARCHER	105
5.10	ETHICAL ASPECT OF THE METHODOLOGY	105
6.	FIRST STEPS TOWARDS THE EMPIRICAL RESEARCH AND THEIR RESULTS – SUBJECT OF ACTION: INTRODUCTION OF THE WORKSHOP “I UNDERTAKE TO MAKE MY HOME BETTER”	106
6.1	THE FIRST PILOT WORKSHOP	108
6.1.1	<i>Phases of realisation</i>	109
6.1.2	<i>Project “Happy Town”</i>	111
6.1.3	<i>Summary of the analysis of reflections and in-depth interviews</i>	112
6.1.4	<i>Interpretation of roles of teachers/pedagogues – in-depth interviews with teachers</i>	114
6.2	THE SECOND PILOT WORKSHOP	115
6.2.1	<i>A.E.T.: Active Event for Tapolca</i>	117
6.2.2	<i>Children’s feedbacks – analysis of reflections made in the final phase of the workshop</i>	118
6.2.3	<i>Role definition and experience factor</i>	119
6.2.4	<i>The role of the presentation presenting the method of designcommunication and the trainer</i>	119
6.2.5	<i>Group work, difficulties of community creation and the result as a central motif</i>	120
7.	THEORETICAL FOUNDATION AND SUMMARY OF THE RESEARCH PLAN	121
8.	THE EMPIRICAL RESEARCH AND ITS RESULTS	123
8.1	THE CENTRAL PRODUCT – THE DESIGNCOMMUNICATION WORKSHOP	123
8.1.1	<i>Background of the creation of the product</i>	123
8.1.2	<i>Mission and vision of the product</i>	124
8.1.3	<i>Primary and secondary target group</i>	124
8.1.4	<i>Unique selling proposition</i>	124
8.1.5	<i>Product description</i>	125

8.1.6 Availability and introduction of the product into school environment	127
8.2 PREPARATION PROCESS OF THE RESEARCH, PRACTICAL REALISATION	128
8.3 PRESENTATION AND FRAMEWORK OF THE RESEARCH RESULTS	131
8.3.1 Technical process of coding	131
8.4 STRUCTURED PRESENTATION OF THE RESULTS OF EACH LOCATION	132
8.4.1 Bács-Kiskun County, Kalocsa	132
8.4.2 Veszprém County, Tapolca	136
8.4.3 Pest County, Nagykörs	141
8.4.4 Budapest, Újpest.....	145
8.4.5 Heves County, Eger	150
8.4.6 Borsod-Abaúj-Zemplén County, Bodrogkeresztúr.....	155
8.4.7 Csongrád County, Hódmezővásárhely	158
8.4.8 Borsod-Abaúj-Zemplén County, Sajószentpéter	161
8.4.9 Tolna County, Tamási.....	164
8.4.10 Szabolcs-Szatmár-Bereg County, Baktalórántháza	168
8.4.11 Jász-Nagykun-Szolnok County, Besenyeszög	171
8.4.12 Békés County, Mezőberény.....	175
8.4.13 Fejér County, Baracs.....	179
8.4.14 Komárom-Esztergom County, Dorog	182
8.4.15 Hajdú-Bihar County, Debrecen.....	186
8.4.16 Győr-Moson-Sopron County, Tápszentmiklós	190
8.4.17 Somogy County, Kaposvár.....	194
8.4.18 Zala County, Alsópáhok	197
8.4.19 Veszprém County, Tapolca (second-year students).....	200
8.4.20 Baranya County, Pécs	203
8.4.21 Vas County, Szombathely	207
8.4.22 Nógrád County, Dejtár	210
8.4.23 Slovakia, Pelsőc.....	213
8.5 SUMMARY OF RESULTS	216
8.5.1 Framework- Relationship network (1).....	216
8.5.2 Class as community (2).....	218
8.5.3 Education for life: developing skills (3)	219
8.5.4 Strive for improvement, dimensions of development (4).....	222
8.5.5 My profession and responsibility: I am a pedagogue (5)	223
8.5.6 The product (6).....	224
8.6 COMPLEMENTARY WORKSHOP SERIES AND PRESENTATION OF RESULTS	228
8.6.1 Topic of the workshop.....	229
8.6.2 In-depth interview analysis and coding	230
8.6.3 Participatory observation.....	233
8.6.4 Analysis of student reflections	237
8.6.5 Summary of results and added value	240
8.7 ANSWERS TO THE RESEARCH QUESTIONS	241
8.8 VALUES GENERATED BY THE RESEARCH	245
8.8.1 Academic contribution of the research.....	245
8.8.2 Practical contribution (Education, Companies).....	245
8.8.3 Social benefit of the research	246
8.9 LIMITATIONS OF THE RESEARCH	246
8.10 CONTINUATION, CHALLENGES OF THE FUTURE	247
9. SUMMARY	248
REFERENCES	250
ANNEX	276
I. PHASES OF THE WORKSHOP	276
II. QUESTIONS DURING THE PEDAGOGUE IN-DEPTH INTERVIEW	278
III. PRESENTATION ON DESIGNCOMMUNICATION DELIVERED DURING THE WORKSHOP	279
IV. DECLARATION OF CONSENT FOR STUDENTS.....	281

LIST OF FIGURES

Figure 1: Contribution of soft skills to business success	59
Figure 2: Map of the theoretical summary in the light of the most important linkages.....	71
Figure 3: Research strategy and data collection methods	91
Figure 4: Visual plan of the research plan in the context of the central product and the research question	104
Figure 5: Presentation of the training process from the point of view of participants' roles.	110
Figure 6: 5-step process of the training from the point of view of the trainer and the participants	117
Figure 7: The four elements of the central dimension	121
Figure 8: Theoretical background of the thesis and structured summary of the related research plan	122
Figure 9: Code list of the pedagogue in-depth interview– Kalocsa	133
Figure 10: Code list of student reflections – Kalocsa	135
Figure 11: Code list of the pedagogue in-depth interview – Tapolca	138
Figure 12: Code list of student reflections – Tapolca	140
Figure 13: Code list of the pedagogue in-depth interview – Nagykőrös	142
Figure 14: Code list of student reflections – Nagykőrös.....	144
Figure 15: Code list of the pedagogue in-depth interview – Budapest	147
Figure 16: Code list of student reflections – Budapest	150
Figure 17: Code list of the pedagogue in-depth interview – Eger	151
Figure 18: Code list of student reflections – Eger.....	153
Figure 19: Code list of the pedagogue in-depth interview – Bodrogkeresztúr	156
Figure 20: Code list of student reflections – Bodrogkeresztúr.....	157
Figure 21: Code list of the pedagogue in-depth interview – Hódmezővásárhely	158
Figure 22: Code list of student reflections – Hódmezővásárhely	161
Figure 23: Code list of the pedagogue in-depth interview – Sajószentpéter.....	161
Figure 24: Code list of student reflections – Sajószentpéter	164
Figure 25: Code list of the pedagogue in-depth interview – Tamási	165
Figure 26: Code list of student reflections – Tamási	168
Figure 27: Code list of the pedagogue in-depth interview – Baktalórántháza	169

Figure 28: Code list of student reflections – Baktalórántháza	171
Figure 29: Code list of the pedagogue in-depth interview – Besenyeszög	172
Figure 30: Code list of student reflections – Besenyeszög	174
Figure 31: Code list of the pedagogue in-depth interview – Mezőberény	176
Figure 32: Code list of student reflections – Mezőberény	179
Figure 33: Code list of the pedagogue in-depth interview – Baracs	180
Figure 34: Code list of student reflections – Baracs	182
Figure 35: Code list of the pedagogue in-depth interview – Dorog.....	183
Figure 36: Code list of student reflections – Dorog.....	185
Figure 37: Code list of the pedagogue in-depth interview – Debrecen.....	187
Figure 38: Code list of student reflections – Debrecen.....	190
Figure 39: Code list of the pedagogue in-depth interview – Tápszentmiklós.....	191
Figure 40: Code list of student reflections – Tápszentmiklós.....	193
Figure 41: Code list of the pedagogue in-depth interview – Kaposvár.....	195
Figure 42: Code list of student reflections – Kaposvár.....	196
Figure 43: Code list of the pedagogue in-depth interview – Alsópáhok.....	198
Figure 44: Code list of student reflections – Alsópáhok.....	199
Figure 45: Code list of the pedagogue in-depth interview – Tapolca (second year students).....	201
Figure 46: Code list of student reflections – Tapolca (second year students).....	203
Figure 47: Code list of the pedagogue in-depth interview – Pécs.....	204
Figure 48: Code list of student reflections –Pécs.....	206
Figure 49: Code list of the pedagogue in-depth interview –Szombathely	208
Figure 50: Code list of student reflections – Szombathely	210
Figure 51: Code list of the pedagogue in-depth interview – Dejtár	211
Figure 52: Code list of student reflections – Dejtár	212
Figure 53: Code list of the pedagogue in-depth interview – Pelsőc.....	214
Figure 54: Code list of student reflections – Pelsőc.....	216
Figure 55: Summary of the results of the empirical research	244

LIST OF TABLES

Table 1: Explanation of the main thesis of designcommunication	76
Table 2: Data collection methods and the journey of data registered by these methods	95
Table 3: Summary of realised school sessions by date and location	130
Table 4: Specific characteristics of the products created during the designcommunication workshop // Part 1	225
Table 5: Specific characteristics of the products created during the designcommunication workshop // Part 2	226

LIST OF ILLUSTRATIONS

Illustration 1: Group drawing-Mezőberény.....	177
Illustration 2: Group drawing-Debrecen	188
Illustration 3: Group drawing-Tápszentmiklós	192
Illustration 4: Group drawing-Tapolca.....	202
Illustration 5: Group drawing-Pécs	205

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1. Introduction

1.1 Children. Home. Co-operation. Creativity.

Children

Keywords highlighted in the title are the real essence of my research. I would like to integrate a creative educational-methodological tool developed by myself into primary schools, where test subjects, main characters of the research are children aged between 10 and 12 years. They are members of generation Z. The stated goal is that this methodology should always serve children over generations. **The openness of 12-year-old children is an unmissable opportunity to establish designer's relationships** (A. Cosovan, 2009) at today's primary schools which are basically not design and creativity-based institutions yet.

Home

In order to implement the educational-methodological tool and measure its immediate added value, besides focusing on children who are open to the world, a central motif was also necessary with which children could identify regardless of their social and economic background. This motif is home, which is basically determined as their own place of residence, their settlement during the research, because it is a common point for all of them, which children know, and have an opinion on, they know, hear and experience its advantages and disadvantages day by day through their own lens. The educational methodological tool was titled **"I undertake to make my home better"**, and during its application the interpretation of an extended home also appears besides the strict sense of the place of residence, opening up a new dimension in the research.

Co-operation

Together. Jointly. Maybe the most important pillar... The co-ordination of a community, via the realisation of a designer's process, for the purpose of producing a product together. This can be the real result, which supports the development of employee skills considered to be most important during its managerial implication.

Creativity

The fourth keyword is creativity. Today this expression has a special added value, which is why the word is starting to wear out and get away from its original meaning. According to Csíkszentmihályi (2008), no matter how much an individual is creative and talented, if the environment is not understanding and accepting, there is no chance of any result. The attitude of the applied methodology and the thesis towards creativity is formulated here: they undertake to create a supportive environment facilitating inclusion.

Overall, the aim is to make children open to creation, allow them to unfold at home, as a tangible theme via a not (only) tangible, creative educational methodology tool building on a designer approach, and show them another viewpoint in a closed school system, providing at the same time support for employment.

1.2 Vision, positioning: Education science and pedagogy

The topic spans over several areas of science connecting these areas together. That is why it has scientific and practical importance. The thesis made in the Doctoral School of Business and Management can be linked to the management literature and also to the area of education science, it builds on this area, gets inspiration from it, and uses the results of this area of science for a holistic (Jarvis & Parker, 2006) analysis. Hence, the clarification of the conceptual framework related to this discipline of science takes place as a part of the introduction too. Education science has not got any clear and precise definition. Its practitioners and representatives understand and interpret it differently, starting endless debates and discourses. These debates can be regarded as some kinds of self-definition experiments among education science researchers striving to fix their positions and roles on a seemingly structured, but from the point of view of the characters, a marshy stage (Furlong, 2013; Kozma, 2013). Besides

education science, the concept of pedagogy also has got many interpretations. Pedagogy is basically a term which is widely used in respect of education, and its too often and general use presupposes its trivial meaning, but it is not always clear and it is often applied inadequately (Murphy, 2008).

The unfold of Hungarian education science thinking took place in the second half of the 19th century, this is the time regarded as the start of the institutionalisation of pedagogy as a science by the literature too (Németh, 2002). In order for a field to become science many conditions must be met. These conditions include the creation of a scientific journal related to this field, which was established under the name Magyar Pedagógia (Hungarian Pedagogy) in Hungary in 1892. This can be regarded as the date when education science became a modern empirical science in Hungary (Csapó, 2005). At this time, the intellectual current related to the Hungarian education science could actually be characterised with the takeover and establishment of the German approach. However, the effect of western scholarship appeared in the last third of the 20th century and became a standard over time, this period was characterised by the reception of the Anglo-Saxon, Anglo-American science, in which approaches the interdisciplinary nature of education science can be observed (Németh, 2013).

I hereby present the definition expressing the best way the approach of the thesis. Consequently, education science is an area of science intended to perform the scientific interpretation of pedagogical knowledge and laws. The subject and uniqueness of education science are defined by knowledge seeking the development of human personality, whose complexity in itself requires that it should be treated as a multidisciplinary science. Education science unites and summarizes the methods and concepts of other related disciplines of science too. **Pedagogy, as compared to education science can be interpreted as a practical activity built on the research results of education science**, like for example in the case of medical science and healing (Csíkos, 2020). This conceptual framework is also confirmed by Žogla in her study. She considers education science to be an **integrated humanistic social science, examining combined and unique laws**, which focus on learning interactions and the content of communication and mutual relationships occurring during the process, and which constitute a defined research object. The practical aspect of pedagogy is primarily defined as the representation of organised pedagogical processes which build on and come into existence from education science theories, however their specific objective is to achieve an educational goal (Žogla, 2018). These didactic goals can be described, but it must be taken into account that pedagogical experiences cannot be easily theorized due to unique interactive aspects. This can be interpreted as the separation from education science, with the formation of a new practical

epistemology at the same time. This is an epistemology where the concept of praxis (expression used in teaching for the description of the dialectical relationship between theory and practice) plays a central role (Murphy, 2008).

This interpretative framework is applied in the thesis. It is important to establish this, because neither the meaning of the word pedagogy nor its communication relationship with education science can be decoded clearly (Biró, 2009). There are interpretations which emphasize the complexity of the concept of pedagogy, they regard it as the complex interpretation of theoretical science (education science) and its practical aspect (Golnhofer, 2004). The communication attempts to clarify the concept include the following: representatives of the scientific discipline refer to themselves as “educational scientists”, while a smaller group is called “education researchers” and the expression “pedagogue” remained the privilege of experts performing the tasks of institutional education/pedagogy (Biró, 2009). This also establishes the theoretical dimension of education science and the practical dimension of pedagogy related to and building on the foundations of science and contributing to its scientific validation day-by-day.

In this doctoral thesis both education science and pedagogy play an important role, since the literature analysis draws on the foundations and research results of education science, at the same time, during the primary research practitioner-pedagogues are a priority group of subjects of the qualitative research intended to examine the practical approach of pedagogy. The goals of the thesis include to address educational actors and show that only the joint work of educational scientists researching the theory of education science and pedagogues putting research results into practice can result in the development of the scientific discipline. At the same time, the development generated this way requires continuous change, critical attitude and flexibility, which create and ensure the sustainability of this area of science (Žogla, 2018).

1.3 Teaching and education

The processes of teaching and education cannot be separated at school, because they interact with each other (Fürjné Nyeste, 2017) This also determines the functions of school. According to the literature, the role of pedagogy is the **preparation focusing on lifelong learning**. The aim is for the school to teach students how they can live in a continuously changing social and economic environment and how they can apply the continuously acquired pool of knowledge (De Corte, 2001). The most important skill for this: **to transfer the love of learning and the experience nature of learning**, that is children must be taught how to learn,

in order for students to have a desire for knowledge and to realise how good it is to learn. However, students get from nursery school to school and can hardly carry their school bags¹. Increasingly strict requirements, more and more lessons, independent tasks, series of accountabilities, performance evaluation. No wonder there is little or no time for learning methods offering the experience of discovery. Experience, especially in puberty means friends and community for students. Their classmates and the relationship between them play a significant role in the formation of their well-being at school (Balogh et al., 2000).

The significance of community or social learning is unquestionable, while its integrability into the primary school framework raises questions and carries uncertainty. Learning is not just an individual, but also a common, shared activity. Learning can be made more efficient if students have the opportunity for co-operation via exchange of views, debates and the comparison of solution strategies. **Instead of the traditionally overrated individual learning, social interaction should be emphasized in the classroom, which increases the utility of learning and builds a community** (De Corte, 2001).

The necessity of the reinterpretation of educational reforms is undisputable. The change of the way of thinking is necessary, otherwise the reform effort fails. Education increasingly shifts towards a service, where there is a fierce competition. The intangible nature of knowledge, the result of the educational, pedagogical service raises the question (from the point of view of students), **what surplus students can get after completing the given educational phase/training, and what employee values they become enriched with**. Therefore, high quality of education means an added value which is purely a result of school activity instead of factors deriving from other pedagogical sources (Tosifescu, 2009).

“We can make education a better learning organisation by integrating many possibilities to give high-quality feedbacks. We create these possibilities to give feedbacks where they did not exist before, we improve the technique and sophistication of feedbacks, and increase their frequency, where they already exist but do not work efficiently enough” (Csapó, 2007: 14). In my research I undertake to develop the creative educational methodological tool **“I undertake to make my home better”**, which gives immediate feedback to the trainer holding the workshop and the pedagogue as well. The feedback does not only rely on the results of the workshop, the process itself also holds up a mirror to the pedagogue. School appears as a learning organisation (T. Baráth, 2014; Beke, 2001; Gelei, 2002) the workshop a workshop urges the joint learning

¹ <http://www.ajbh.hu/-/az-ombudsman-az-iskolataska-sulyarol-es-a-gyermekek-gerincproblemairol>

of students and the trainer which contributes to personal development and also the increase of organisational knowledge. From the point of view of educational actors, the goal is the same: to maximise the added value of the institution and/or pedagogue providing education, in a way that the development of the expected and most important employee skills should be facilitated. I would like to contribute to this value enhancement with my research.

1.4 Justification of topic selection, the underlying personal motivation of the decision

The thoughts, problems described in the introduction and the unexploited development potential in education played a decisive role in topic selection. The selection of the research topic is about my future, while in parallel with this I am trying to influence the future of students via reform efforts focusing on education. When I began my PhD studies, I was motivated by the desire to teach, the personal attitude intended to transfer valuable and useful knowledge to students while shaping their attitudes, as an inseparable educational and pedagogical unit.

I grew up in a family of teachers, so my upbringing was affected by the given educational situation, the existing problems, the new learning and educational methods, as well as the efforts of pedagogues to resolve the problems in education. **All these inspired me to do a research, with which I can achieve my personal goals and also which may has social benefits, or even immediate added value for pedagogues and students.** At this point I found designcommunication as a methodology building on creative contact establishment (A. Cosovan, 2009) which appeared as a starting point during the creative work aiming at the development of education. Until this phase of my PhD studies I could participate in several research projects, where I mostly worked in research groups, thus I also experience the power within co-operation and the energy in the creation within a community every day. This inspires me, facilitates improvement and makes me more confident how relevant one of the main focuses of my research is in education.

The basic objective is to elaborate a creative educational practice, assess and test its feasibility and present its results which encourages pedagogues and students to actively contribute to each other on an equal basis. It should be integrated into the existing educational framework at primary schools without a problem, and should include the following highlighted elements: (1) community learning, (2) (mass) co-operation, (3) group work, (4) non-hierarchical, equal relationships, (5) creative, design attitude, (6) entrepreneurial attitude, and all of them are affected by (7) creativity playing a significant role.

1.5 Actuality and economic, social, environmental relevance of topic selection

Education and education-related reform efforts cannot lose their relevance. There are more and more actors involved in education, the phenomenon of lifelong learning has increased the number of years spent at school, even if in many cases this school is built on digital knowledge transfer. Digital natives, generation Z consisting of the main characters of this study receive information totally differently, different methods are useful in inducing the reorganisation of learning (Fodorné Tóth, 2018), thus all methodologies promoting the reform efforts of the educational system have their social relevance. Fodorné (2018) points out that this is not only a change affecting generation Z, because survival, subsistence and development in a global-digital everyday life (A. Cosovan, 2009) requires other abilities and skills, thus public and higher education must adapt to this.

The question arises: how is a research focusing on education and aiming at its development actually connected to economic and management literature. The closest connection is that **future employees, students, regarded as the output of education, can be efficient and successful employees of the future on the input side of companies by acquiring skills adapted to the needs and expectations of companies.** That is to say, a student, a future employee **can be successful if his knowledge acquired in education overlaps with requirements imposed by companies and modern economies on their experts.** Not surprisingly, there is a strong research activity linked to this topic, since during the process of getting from school to work both the starting point (the educational, training system itself) and the endpoint, the destination (i.e. the labour market) is in a state of constant transformation, continuously generating research questions (Bartus & Róbert, 2019).

With the research carried out in my thesis, I consider it important to maintain a **dialogue** between creators of education and workplaces, the most important actors of companies and the economy, and increase the intensity of this dialogue and make it more efficient, where necessary.

Besides the academic impression, the social added value and the contribution to education development, an extremely important objective of my doctoral thesis is to deepen this dialogue and make it more efficient in the mentioned areas of science, especially between education and companies. Evaluating things experienced during the literature analysis: a stronger, more direct (design) contact establishment also realised at operational level is necessary between pedagogues, who are the engines of education and innovation and economic actors formulating and applying employee expectations. It is necessary for us to raise a generation which gets the

required, suppleatory and usable knowledge, whose application serves as the engine of economy at the same time, and in parallel with this moves personal and social development forward. This thought is supported by a number of research results (Archer & Davison, 2008; Hurrell, 2016; Sin & Neave, 2016; Succi & Canovi, 2020). If we only examine this from the point of view of soft skills the present thesis focuses on, we can see that on the one hand employers must actively participate in the development of soft skills of students and graduates; and on the other hand the academia must build stronger partnership with the industry, and co-operate efficiently in order to guarantee that graduates are prepared for workplaces (Succi & Canovi, 2020). The results of the educational methodological tool developed during my doctoral studies, as a part of the thesis, obtained during a multi-method, qualitative research wish to contribute to the deepening and rethinking of this dialogue.

The relevance of the topic is further confirmed by **the examination of the relationship between co-operation, creativity and education**, the non-negligible significance of the development of these two skills within the framework of education. Co-operation is one of the key elements of the educational methodological tool developed by ourselves, and it is also one of the fundamental pillars of the operation of successful companies, and as a result this skill has become of high importance for entrepreneurs as regards the employment of new colleagues. Thus, recent graduates who are in possession of this skill will enter labour market with a greater advantage. The other fine-sounding and truly more and more important and determining characteristic is creativity which appears in addition to co-operation as an expected characteristic in almost all job advertisements regardless of the nature of the position. Creativity is part of human existence, the process of its experience is a determining factor: **“the shaping curiosity and the performed situation solution, whose accompanying experience is self-fulfilment”** (Landau, 1974). The importance of creativity as an indispensable human characteristic must be emphasized by the fact that artificial intelligence was created by human creativity (Boden, 1998), however it is not in possession of this skill. The examination of the role of creativity in education is inevitable even with a presence of artificial intelligence. Its analysis can be particularly useful focusing on a group, whose openness makes it possible for its members to shape their personality and attitude.

The actuality of the topic cannot be questioned, its economic relevance has been proven, but the social benefit and the environmental significance of the selected topic and the related research is not negligible either. During the qualitative research carried out in connection with the topic, **700 students** could participate in an innovative session, which session is not only a new adventure and experience for children, but during the creation of the research concept one

of the most important aspects was the realisation of a research whose result would have a positive effect on educational actors and with which I would contribute to the support of educational reform efforts. The session is built on a real problem, which real problem is about how to make home and environment better, allowing the support of students and providing them with the possibility to create an environmentally friendly, and in general, a caring creative solution.

1.6 My philosophy of science approach determining the thesis

It is worth starting the explanation of my philosophy of science approach, by highlighting the other subjective filtering elements, apart from the here described philosophy of science theories determining my research, which formed and had an effect on me as a researcher. These include my educational background, my personality, my attitude towards the research subject, the interpretation of the used literature in my way of thinking and my ability to understand. Therefore, the formation of my philosophy of science approach began with a hermeneutic task, whereby the starting point was to understand and interpret the internal, subjective, basic components of the researcher.

Positivist approaches are typical in the field of marketing research (Malhotra, Peterson, & Kleiser, 1999). Consequently, the dominant paradigm in marketing is positivism (logical positivism or logical empiricism), including the application of quantitative methods, the acceptance of realism, the search for causation and the assumption of determinism (Hunt, 1994). Positivist researchers believe that they can get to full understanding via experiments and observations (A. B. Ryan, 2006). Overall, it can be said that the positivist view dominates most areas of science and it is especially present where subjective human factor is not, for example in technical fields or natural sciences. It presupposes a single, quantifiable reality, and rejects data changes as a result of observations (Guba & Lincoln, 1994). In positivist researches the result is the confirmation or rejection of hypotheses or knowledge in the form models to be tested (Kock, McQueen, & John, 1997). The immanent approach of science means that we disregard or ignore the examination of the broader, social contexts of scientific knowledge. This approach is typical for all types of positivism. Positivism only considers the analysis of mainly logical and methodological problems during scientific research within the structure of scientific theory to be its task. (Kocsondi, 1982). In summary *“a positivism understands science as a separate sphere existing independently from other forms of social totality, and thereby it denies its social nature and social determination”* (Kocsondi, 1982, p. 17). Actually, there are two

main positivist doctrines – the conviction that there are universal and immutable laws or principles which represent one-way casual links, and the conviction that there is only a single real “scientific” method to explore these links (Guba & Lincoln, 1994). The dominance of positivist researches makes us assume that if social researches are carried out properly, they follow the pattern of natural sciences, and provide a clear and evident way for the causes of certain social or psychological phenomena. However, this cannot be said during researches when we look for answers to questions for example, how people live or how they think about the world (A. B. Ryan, 2006). It follows from the above that the positivist approach cannot be applied well during the examination of sociological phenomena involving the human factor and real experiences. The reason for this is that it does not take into account that they can reflect on problems in an independent manner. The point of the positioning and definition of my philosophy of science approach is the differentiation from the positivist approach, because my research is driven by the human factor and its immanent potential change.

In the second half of the 19th century anti-positivists appeared on the research scene who assumed that individuals could not exist isolated, that is why we have to understand them as an integral element of the cultural and social environment they form a part of. So, in the second half of the 1920s new knowledge building paradigms and knowledge theories like post-positivism, critical theory, interpretative approach and constructivism gained ground (Kock et al., 1997). Interpretative approach cannot be equated with constructivist approach, however they constitute a “common intellectual tradition” so handling them together is acceptable (Gelei, 2006, p. 87). The characteristics of post-positivist researches show that the research is more wide-ranging than special, therefore many things are regarded as researches. Theory and practice cannot be separated from each other, furthermore, it is not allowed to disregard theory in favour of “only facts”. The motivation and commitment of the researcher are of central and decisive importance for the enterprise from the point of view of the research. The idea that researches only deal with the right techniques of the collection and categorisation of information is already not relevant in the post-positivist approach. (A. B. Ryan, 2006). The researcher and the research topic are inseparable, the interaction between them goes without saying. Unlike the positivist paradigm, the casual link can be characterised by the fact that each unit develops in interactions, therefore it is impossible to separate causes and consequences (Guba & Lincoln, 1994).

In my present research I put the spotlight on the individual reflections of critical thinking and self-fulfilment. My philosophy of science approach is constructivist where reality is relative and human subjectivity plays a prominent role in the creation of meaning (Baxter & Jack, 2008).

Constructivism, at least in social sciences is more recent than interpretivist thinking, although it dates back to the earliest philosophical arguments concerning the rational foundation of knowledge. Constructivists are deeply committed to the view that what we consider to be objective knowledge and truth are the result of the given perspective (Schwandt, 1994). It states the social constitution of knowledge and the known reality and that real world does not exist independently of human spiritual activity and symbolic language (Schwandt, 1994; Zemlén, 2006). It emphasizes the pluralistic and sculptural nature of reality. It is pluralistic in the sense that reality can be expressed in various symbol and language systems; its sculptural nature is shown by the fact that reality is stretched and formed in order that it can adapt to the purposeful actions of intentional human factors (Schwandt, 1994). Constructivism focuses on potential conclusions behind values and ideologies (Healy & Perry, 2000). The basic assumption is that researchers must actively build knowledge and skills and that information exists in these built constructions instead of in the external environment (Huitt, 2003). The mapping of constructed reality is the interaction between the interviewer and the respondent, thus researchers are present as a determined and active participant during their own fieldwork (Guba & Lincoln, 1994). I could also be characterised by similar determination and active presence during my personal fieldwork, during the multi-method qualitative research carried out in my thesis both in the case of participatory observations, and the 26 in-depth interviews.

We also examine three basic components related to each paradigm in the complex system of the researcher's philosophy of science approach. These include the qualitative methodological approach, a methodological element most often related to the philosophical direction. This is suggested by the description of the attitude of the researcher. Epistemology examines the relationship between researchers and reality (Healy & Perry, 2000). Epistemology / the philosophy of knowledge is a study about how people or human communities get to know things and how they think about this knowledge (Keeney, 1983). Hence, I do not reject the idea that reality exists, I just admit that there is no objective cognition, that is why I focus on the examination of the subjectively interpreted own reality of individuals. Accordingly, ontologically (reality in which researchers carry out examinations) I assume during my research applied in my doctoral thesis, that reality is the subjective construction created/built by individuals together (Healy & Perry, 2000).

1.7 Interdisciplinary approach and the opportunity of unity in diversity

“Interdisciplinary” is a word of Latin origin whose definition according to the online Collection of Foreign Words (Idegen Szavak Gyűjteménye) is: Expression “related to several sciences, fields (which shall be understood as the relationship between areas of science)”². Therefore, we are talking about an interdisciplinary approach when a researcher unifies knowledge, theories and perspectives deriving from different areas of science to prepare his scientific work, and carries out his research activity in that spirit in order to achieve a defined goal. This kind of approach requires participants to study other related areas of science in addition to the discipline defining their own main research avenue and get to know terminology and differences between approaches of science. It is important that interdisciplinary research approach taking place at the edge of areas of science differs from multidisciplinary approach in such a way that here researchers cross the border of their own areas of science and results derive from the construction of knowledge experienced and accumulated when crossing these borders (Bognár, 2016).

The United States recognised the importance of interdisciplinary researches already in 2005. An official study published by the National Academy of Sciences (NAS) highlights that interdisciplinary approach is a significant factor in scientific research. The study bases the rise of the interdisciplinary thinking among other things on the existence of problems which cannot be resolved within one field, and also on its contribution to the solution of social problems (D. Horváth, Csordás, Horváth, & Cosovan, 2020).

2. Overview of the theoretical framework, education in focus

In order that a truly useful and efficient learning unit can be realised which later can be introduced in a curriculum framework at a system level, it was necessary to become thoroughly familiar with the existing boundaries. This framework – based on the literature – was analysed along six dimensions. These six dimensions include: (1) the set of rules and framework which characterise primary schools as educational institutions in modern times, (2) the presence of creativity at primary schools burdened by rules, (3) teaching methodology opportunities of co-operation, the disclosure of group work in problem-based learning (4) the roles of a teacher and the challenges burdening/motivating them, (5) the students, generation Z, as the highlighted

² Collection of Foreign Words (<https://idegen-szavak.hu/interdiszciplina%20A1ris>),
Download date: 30.01.2021

participants of the research, furthermore (6) the relationship of the educational and economic actors and the revealing of the opportunities of this relationship will be in focus during the theoretical overview. In the next section, the first part of the theoretical framework is going to be introduced in the thesis, which is going to be introduced along the mentioned dimensions.

2.1 The present of the primary educational institutions

Globalization, technological innovation, digital and information literacy. These are just a few of the changes occurred in the past decade, which had a serious impact on both the situation and the understanding of the role of the primary education system in learning and in personal development (Radó, 2017). There are studies which question the application priorities of the single, country-wide framework curricula serving as guidelines to be followed in favour of the competences to be acquired (see eg. Seikkula-Leino, 2011; So & Kang, 2014; Szebeni, 2010). They would replace the rigid, strict, subject-based educational framework with experience-based methods facilitating the understanding of the whole picture (Penuel, Turner, Jacobs, Van Horne, & Sumner, 2019).

Educational practice slowly adjusts to the changes above. 45-minute-long lessons, compulsory weekly number of lessons, where the number of each subject is specified by the framework curricula, allowing minimum room for manoeuvre for the school, and even less for the teacher as regards the number of lessons. Today, education is mandatory for all children aged from 6 to 16, and children must start their studies in public education at the latest in the calendar year following the year when they reach the age of six. Education from nursery school until secondary school is free for all Hungarian citizens. Public education is realized during 12 consecutive years which can be broken down into 3 stages. In the primary education stage we differentiate lower (grades 1-4) and upper level (grades 5-8) education, while the secondary education stage nowadays consists of grades 9-12, in many cases complemented by a preparatory grade (Racskó, 2017). **The present study mainly focuses on primary education.**

The determining content regulatory documents of the Hungarian education are the National Public Education Act and the National Core Curriculum whose first introduction was in 1995 (Vilmos, 2008). The full text of the National Core Curriculum currently in force is included in Government Decree 110/2012 (VI. 4.). It is important to establish that based on Government Decree 5/2020 (I. 31.) the amended National Core Curriculum will prevail. Its introduction took place in the first semester of the school year 2020/2021. The introduction is realized in an ascending system, first in the first and the fifth grades of primary schools, based

on §4 of Government Decree 5/2020 (I. 31.). Based on the content regulatory framework curricula adjusted to the National Core Curriculum broken down by subjects and grades (students in grades 1-4/5-8) the learning material is clearly defined for teachers and the skills to be acquired for students by fields. It also specifies how the given subject contributes to the key competences laid down in the NCC and how it improves the related skill. It defines the topics which must be mentioned during the teaching of the given subject and it indicates the recommended number of lessons from which, of course teachers may deviate minimally, but the annual demanded requirements must be met (www.oktatas.hu). NCC gives guidance on the uniform progress of students involved in primary education, or at least on a progress which seems to be uniform. Requirements are strict, they demand intensive work, thus student competences – like creativity and employee and entrepreneurial skills, which are of major importance from the point of view of my research too (Petróczi, 2020) - set as development goals and modified in 2020, can only be integrated in subjects, other rooms for manoeuvre are minimal, it strictly restricts possibilities which are reduced anyway (Z. Fodor, 2018).

2.1.1 Conceptual meaning of competence

I consider it especially important to define the concept of competence at the initial phase of the thesis, on which I will build later as well. Competence, as a collective term integrates a collection of skills, knowledge, capabilities and attitude and includes the ability to learn too. With the help of competence we become able to solve a complex task in a given situation (K. Demeter, 2013). The concepts also refers to the ability to mobilize knowledge, and places emphasis on both cognitive and practical aspects.

Key competence, on the other hand is of decisive importance (1) in respect of cultural capital, since it is important for an individual to set goals in his life and work to achieve these goals. Key competence appears as a driving force as regards cultural capital as well as (2) social capital, facilitates the active inclusion in social life. The contribution of the key competences to (3) human capital is reflected in their ability to enable people to do jobs in accordance with their capabilities in the labour market (C. M. Szabó & Balázs, 2020).

2.1.2 Innovation efforts in the sector

There are continuous educational innovation efforts, alternative schools integrating creative methods into their everyday education are coming more and more to the forefront, but the efforts of the new NCC also move in this direction. **With my research I would like to join the reform efforts of education.** The relationship between education and innovation can be interpreted along several dimensions, its role within the national innovation strategies is essential. Education is the engine of the innovation processes realised in the economy and in the society, because **the development of skills necessary for the innovation processes**, like creativity, design attitude, or entrepreneurial skills **are realised at school, in the educational system.** The development of these skills requires pedagogical innovation, because old, entrenched methods are suitable for this to only a limited extent, or are not suitable at all. For this reason, **innovation effort within the sector** is extremely important in order that education can also support innovation processes in the other fields effectively and efficiently. Based on the results of a research presented in a study the Hungarian education is characterised by a high level of innovation activity, although this activity is different in each sub-system of the education, the public education in the focus of my research is at the end of the list (Á. Fazekas, Halász, & Horváth, 2018). Based on the research, the majority of innovations are developed by teachers and only a small part of them are realised in a describable and transferable form. During the modern innovation thinking innovation coming from practitioners more and more become centre of attention (Lippke & Wegener, 2014), the success of innovation processes is guaranteed by teachers, in the future, the real breakthrough will be the bottom-up initiatives, (Jánosy, 2018), in which I am trying to join with my research.

2.1.3 Researcher's dilemmas in the current public educational situation in the field of pedagogy

It is a well-known problem related to innovation efforts concerning the development of education and the closely linked researches that getting from the justification of the results of the basic research to the practical implementation is a very long and resource-oriented process for the researcher. A typical characteristic of pedagogy researches that they are carried out on a smaller sample, only with the participation of a few classes or schools and the often unconventional experimental conditions are hard to realise or cannot be realised at all, furthermore the empirical researches serving the development of public education are very costly so they can rarely serve as a basis for the education policy decision. This may be supplemented by the phenomenon of the rejection of the research if it is not in line with the

assumption of the public opinion and the decision-makers (Csapó, 2020). Nevertheless, the researcher's task does not change, he must be the engine of innovation, he must examine the phenomenon using the tools of science with confidence in the breakthrough (Á. Fazekas et al., 2018). Csapó's (2020) study also states that the European Union supports and inspires the individual efforts of the member states regarding the development of education and pedagogy. It is important to establish that education is a part of the national sovereignty; scientifically grounded and proven developments are limited or cannot be realised at all. Comparative statistics contribute to the support of the European Union, such statistics are the biannual international PISA surveys whose most recent results of 2018 (OECD, 2019) may highlight the deficiencies of education, thereby allowing the practical application of the scientifically grounded results. This is not the only survey examining competences, but this is what countries consider to be a serious feedback on the educational system of their nation. Because of its outstanding importance, the current results of the PISA survey programme providing mainly institutional feedback have an influence on the scientific research efforts realised in the fields of education and pedagogy, contribute to the evidence-based decision-making, and give an excellent feedback for the examination of the effects of the intervention too (Csapó, Csíkos, Korom, Molnár, & Vidákovich, 2017).

It is certain that in order for the Hungarian educational system to remain competitive at an international level, furthermore, to be able to improve its competitiveness, it is necessary to develop the pedagogical research. This has at least two determining criteria. One of them is that research profession must be made attractive for as many young researcher as possible, with special regard to the fields concerning education and pedagogy, and in addition, high education quality is necessary whose development should be started already at the public education. **The present doctoral thesis is closely linked to the preservation of the competitiveness of education by playing an active role in the promotion of two above mentioned dimensions.**

2.2 The presence of creativity at primary schools burdened by rules

In the previous section I have highlighted that the researcher, and in many cases the teacher must be the engine of innovation in the effort for the development of education. For this, it is important to define how innovation is related to one of the central key dimensions of my study, creativity, which is in the focus of the present chapter. The relationship between innovation and creativity has been approached by many people in many ways. During my

literature analysis I rely on Amabile's (1996) approach. She defines **creativity as a useful innovation**, and interprets innovation as the realisation of a creative idea inside an organisation. Therefore, creativity can be considered to be the starting point of innovation realised as its necessary but not sufficient condition (Derecskei & Zoltayné Paprika, 2012). If somebody is creative, this ability and his motivation induce innovation, thus based on the recipe for successful innovation, the training of creative individuals and then the efficient application of their abilities are necessary. This can be highly affected by the family, the education and the mates who surround the individual during the education. This brings us to the key role of creativity within education. (Iványi & Hoffer, 1999)

The starting point is the framework and set of rules set out above which characterise primary schools as educational institutions. The aim is to study the relationship between education and creativity through the analysis of each approach of the definitions of creativity, highlighting the corner points through which education intends to support the development of creativity. I am going to examine the potential manifestations of creativity together with the related expectations in the actual Hungarian public primary educational system. I am going to map if creativity as an effort to develop students' skills appears as a part of the everyday educational practice. The significance and added value of creativity in numerous fields of science are undisputed. The main question regarding the examined field of science is if real development of creativity supported by results is possible in an educational system where the length of lessons is fixed, the requirements continuously increase and thus even the tasks of the curriculum are hard to perform within the framework of the 45-minute lessons? The utility and significance of creativity is not a question, its role has increased and more and more countries consider the development of creativity to be the engine of economy and the potential basis for well-being (Beghetto, 2010). "The requirements of the labour market and the rapid development of the society and the economy require more and more creativity and problem-solving from the upcoming generations" (K.Nagy & Pálfi, 2017, p.76).

2.2.1 Definitions of creativity

The meaning of creativity is hard to define, the formulations are typically diverse. For ancient Greeks, precise description of the concept sparked debates in all cases because they found it difficult to define it (Crimmins-Crocker, 2018). Following Péter-Szarka et al. (2015) I highlight Mumford's (2003) definition, according to which creativity is "novel and useful". Mumford's definition not just holds true in itself, but it also summarises the significant number of creativity definitions. As a general agreement of the literature debates I can establish that

creativity includes the originality of the created product/idea and the useful nature of the idea/product realised as a result of creativity (Walia, 2019). Most modern researches insist on the novelty and utility of the idea in respect of creativity, this is what they consider to be the reference point of creativity. Novelty refers to originality, i.e. the production of something new, while utility seeks the appropriateness of an idea and the solution of the problem (Amabile & Pratt, 2016). This approach is primarily result-oriented. In my case, in connection with generation Z the analysis of the process – the creative process – must be brought to the centre. Practically, novelty can also play a role during the development of the process, and creativity can be not just the solution, but also the way towards the solutions, as a result. We cannot expect children to produce creative things, and in terms of objective criteria we cannot call these things creative either, however, the process which results in the product is creative (Péter-Szarka et al., 2015). Kaszás's creativity interpretation can be connected to Mumford's definition, who highlights that a thought can be called creative if it is **original and useful at the same time** (Kaszás, 2014). The concepts of originality and efficiency have a long history, thus with their help the standard creativity definition can be interpreted excellently based on Runco and Jaeger's (2012) phrasing which is also closely aligned with the above.

Keeping in mind the characteristics of my research, it is worth putting two additional approaches of the creativity definitions under the microscope. I would mention Landau's creativity definition, which – contrary to Mumford's concept – focuses on the internal process nature instead of the result which is an activity inseparable from the acquired knowledge in the possession of the individual and from intelligence, but still an independent, creative activity (Landau, 1974). This definition indirectly sets out the improvability of creativity, because it states that **personal knowledge can influence creativity, and this personal knowledge can be improved and extended during education**. The other important approach is credited to Csíkszentmihályi, who interprets creativity as the ability to recognise a problem (Csíkszentmihályi, 1988). Creativity is interpreted as a system of 3 components. The first component is the **range**, which is a collection of rules and processes, the second component is the **group of experts** who decide if a result generated during a creative process can get into this range. The third dimension is the **individual himself** and the abilities defining the individual (Csíkszentmihályi, 2018) **Creativity, therefore either changes the existing ranges or realises a new range**. Creativity does not only depend on individual creativity and abilities, but also **how much the given range and the related group of experts consider the idea to be acceptable**, how much they are capable of recognising the novelty value of the given idea. Furthermore, an infrastructure is necessary which helps experts, ranges and individuals connect

to each other in order for the results of creativity to be used in the innovation processes (Székely, 2013). All factors are there in education, but they should be harmonised in an adequate and efficient way.

The creativity approach of designcommunication, an applied methodology which will be presented later is defined as the human manifestation of the survival instinct (A. Cosovan & Horváth, 2016). This is a creativity definition where the creator takes responsibility for the result, and where the area between creativity and innovation is occupied by design skills. **The phenomenon can be interpreted as an active creativity where the idea of the creative mind can be interpreted not only at the level of thought but also at the level of action where action also means responsibility towards the own creative product.**

Overall, it can be seen that in simplified terms, during standard creativity definitions the phenomenon manifests itself in two dimensions: there is a new/novel original idea which idea is valuable by itself, or it contributes to the manufacture of products which are valuable. It is important to see that a new and valuable idea can be created randomly as well, for example as a by-product of a process when it is not the creative mind which induces result. In their study, Hills and Bird (2019) undertook to reflect further on the conventional definition of creativity, to question the entrenched value judgement associated with creativity and to create a definition which puts value creation in the background – it maintains that, although creativity is basically not aimed to create the object of value, it strongly promotes their formation -, while originality in the foreground (Hills & Bird, 2019). They set three related conditions for originality, which usually cannot be found in traditional creativity definitions. These are **imagination, fertility and motivation**. According to the study, creativity is the disposition of the individual or set of linked disposition, in which the original new idea is generated with the use of imagination in a highly diverse and productive form, and this idea will be realised by means of internal motivation. The combination of these three units are present at the same time in a creative individual, that is creative actions and products come into existence as the manifestation of these dispositions. The definition does not exclude that creativity can contribute to value creation too, for this it urges the fulfilment of another two conditions, namely that we have to build on previous, well-established, already working examples and models, furthermore, good judgement and good assessment skills/recognition to find out which new ideas generated by imagination are really valuable (Hills & Bird, 2019). The aspect of creativity definition can be meaningful from the point of view of the examination of the relationship between education and creativity, because value creation at school forms a part of the principle of education (Mátés, 2019). **The development of creativity is increasingly the task of education** (Molnár,

Turcsányi-Szabó, & Kárpáti, 2019). **This task is worth harmonising with the pursuit of good.** If students use creativity, the improved skill acquired during a creativity improvement training to plan how to skip class, then the educational methodology tool for development is not necessarily ideal considering its educational dimension, but its effect on creativity is indisputable. **Therefore, when I choose a methodology which helps improve creativity, I have to strive for the consistency of several components.** My designcommunication workshop developed by myself builds on the traditional definitions of creativity and – in parallel with the unfolding of creativity, inseparably – puts emphasis on value creation as well, trying to encourage student to use their inner abilities for the achievement of positive goals.

2.2.2 Environmental factors promoting and inhibiting creativity

Creativity does not happen by itself. A supportive environment is necessary for the miracle, which indirectly increases the chance of innovation too (Derecskei & Zoltayné Paprika, 2012). From the point of view of the unfolding of creativity at school **the recognition of the promoting and inhibiting environmental factors** is very essential. In his study, Sahlberg (2009) describes and details 3 factors which promote and 3 factors which inhibit creativity. He defines competition as an environmental obstacle. Understandably, it helps parents select school and facilitates comparison. In many cases, this is precisely and exclusively what this competition is about. **The quality of education does not necessarily increase, the effort usually serves marketing purposes.** The standardisation of processes and test-based, easily measurable accountability do not promote creativity either.

Three promoting factors are presented in Sahlberg's (2009) essay. These are the significance of co-operation, risk-taking and mistakes. The task of schools is to teach students how to be able to solve a task well. In many cases, the obstacle of creativity is fear: the fear of doing something wrong. The recognition of the possibility of making mistakes breaks down this wall. The creation of an environment accepting mistakes provides students with security and confidence leaving room for creativity. **When we strive to create and apply a methodology aiming at the improvement of creativity, it is worth putting the promoting factors in the foreground, and – as much as possible - confining the factors inhibiting creativity.** Former examinations pointed out that the probability of the occurrence of creativity and innovation is greater if promoting factors are present. It is important to emphasize that this is not enough by itself. An appropriate teacher-student relationship, involvement (Ferrari, Cachia, & Punie, 2009), and an open-minded teacher with a creative attitude are also necessary.

Csikszentmihályi interprets creativity in 3 main dimensions, which set of systems has already been presented. Here I refer back to the range where the group of experts accepts or rejects the creative thought of the individual. This range strongly highlights how intensive the role of the environment is in the unfolding of creativity (Csikszentmihályi, 2018). The influence of this environment in the case of children, within the framework of education where the hierarchical teacher-student relationship clearly determines the person who makes decisions is even more intensive. It is no coincidence that other researchers also put the spotlight on environmental factors in connection with creativity. Amabile shows that (1) **creative solutions are more likely to be found if individuals create something new concerning an area they know**, and they deal with (Amabile, 1996). In education this can be exploited because children impeccably know topics tackled by educational methodology tools aiming at the improvement of creativity, thus uncertainty is not a barrier to the completion of their creativity, and therefore they can build on their existing knowledge. The appearance of creativity is accelerated, (2) if the methods aimed at improving creativity are really applied, that is, **these tools** must appear in the lessons at schools and they **must be applied consciously**. Due to the intangible nature (Kaufmann, 2003), and the uncertainty of its measurability (Harsányi & Szántó, 2018) in many cases the effort to improve creativity is not a priority for those involved in education. Nowadays, creativity, as a skill to be acquired/improved (Sternberg, 2006) plays an increasing role. There are more and more successful attempts to measure it (DeHaan, 2009), so doubts about its significance are gradually pushed into the background. Based on Amabile's (1996) approach the last promoting environmental factor is (3) **the strong, inner motivation, which also intensively depends on the validating group of experts**, in education on the teacher, his enthusiasm, and the range containing creativity.

2.2.3 Creativity capable of developing

Creativity is counted among the most complex and at the same time the most important human behaviours. It is a basic personality skill whose significance, social importance becomes obvious, if we think about the countless scientific and technological achievements, products taking human quality of life to a higher level and artistic works which are also realised as the manifestation of human creativity. From the pedagogical point of view its formation, sustainment and improvement must have priority during education, because creativity represents a basic human value. Based on former creativity aspects creativity was a privilege and only people with exceptional abilities could have it. Today, this approach has considerably

transformed, **the possibility of creativity has become a public domain**, entailing the improvability achievable especially at a young age, whose pedagogical significance is unquestionable (L. Fodor, 2015). Its influence is clear and widespread, across the everyday problems of life to the fields of arts and science. The above is also confirmed by the fact that creative skills are considered more to be an integral part of the normative human cognitive functioning than a natural talent, attainable by only a fortunate few. Creative thinking therefore depends on the basic cognitive processes, which gives answer to the different individual quality of creativity. The development and adaptability of mental operations applied during problem-solving processes suggest that individual creativity can improve with age and the correctly applied development methods (Stevenson, Kleibeuker, de Dreu, & Crone, 2014). Actually, a number of studies (Sowden, Pringle, & Gabora, 2015) have already proven the efficiency of the trainings aiming at the improvement of creativity, like efforts to improve **divergent thinking**, which had a particularly good effect on the enhancement of performance, but their effect is visible in their receptivity and flexibility. During their research, Stevenson et al. (2014) examined the effects of 3 different trainings – including one which was directly aimed at the improvement of creativity – on the development of participants, adolescents and adults. The research proved that the training was more useful for adolescents regardless of its type. The result revealed among other things that adolescence is an advantageous period, a useful age for thinking outside the box and the acquisition of creative processes. Considering the importance of creative thinking, teachers must take advantage of this sensitive and receptive period to improve divergent thinking in order to ensure individual successes and the possibility of social development, which improves creativity in the long term. Experts basically consider the research result to be a guiding principle which states that **creative behaviour is natural, while, on the other hand, non-creative behaviour is a learned behaviour** (Higgins, 1996). This research result puts the spotlight more on the responsibility of schools, because indirectly it can mean that the main objective is not to improve creativity, but not to allow creativity to be put on the shade, to stagnate or to regress. Further examinations also analyse creativity at different ages, whose results suggest that age and the level of creativity are inseparable, therefore its development (maintenance of its level) must be started from an early age. The results showed that while in the case of kindergarteners the examined level of creativity can be considered to be particularly high (90-95%), the same level of primary school students, the next age group is 70-75%. In the case of secondary school students this level decreases to 40-50%, while 20-25% was measured in the case of students in higher education. The level of creativity of adults decreased significantly, based on the research it was less than 10%. (Buzan, 2006).

2.2.4 Factors determining creativity

In connection with the improvement of creativity generalisation is quite common. The denomination “promoting the improvement of creativity” is used for more and more pedagogical lessons and games without having this as their proven primary objective. In order for schools to really be able to improve creativity efficiently and select the educational methodology tool supporting this, they have to define the goal, what characteristics a creative mind has and what distinguishing features a creative person has. After this, the differentiation of tools aiming at development may also become easier, because this way, creativity as a characteristic can be subdivided into further factors and components, and the efforts aiming at the development of these elements can be defined much more precisely in the case of each educational methodology tool and lesson.

The factors of creativity and the distinctive features of the creative person are presented based on the results summarised by two prominent researchers of this field (J P Guilford, 1950; Torrance, 1974). The creativity factors examined by them are of general validity and widely accepted. The presentation of the ten factors begins with the (1) **general sensitivity to problems**. The individual notices, recognises problems even if the problem itself is not clear and/or it is hidden. (2) **Originality** as the central characteristic of creative thinking means that the person provides unusual, innovative, new or novel and startling solutions to the recognised problem which is very different from the other persons’ answers. (3) **Fluency**, means that the individual is continuously capable of generating ideas, he has countless ideas, everything reminds him of something new, he associates with ease. (4) **Elaboration**, the ability to elaborate is also a significant distinguishing, which factor enables the person to define the structure, the whole thing based on details and helps fill out details. (5) **Flexibility**, is also a highlighted factor which provides the opportunity for the individual to apply diverse approaches during the solution of the problem, when the sometimes conflicting elements are not the problem but the opportunity. (6) **Analysis** is a thinking operation whereby the existing structures are dismantled and then put together in a new system, which may get a new meaning, an added value as compared to the previous one. The next factor is (7) **synthesis**, helps arrange thoughts into more and more uniform and comprehensive systems and networks. (8) **Complexity** is related to synthesis and takes it to a higher level. It means that the individual can deal and operate with many various interrelated thoughts at the same time. (9) **Redefinition** highlights the individual’s personality trait as another important factor of creativity, that the individual is

capable of using objects in a way that diverges from the ordinary, whereby this may contradict the traditional, intended use. Finally, there is (10) **evaluation** as a factor of creativity which provides opportunity for us to assess the value of new thoughts and ideas and determine their relevance. The rate of occurrence of these ten typical characteristics of course differs from person to person. After its survey it gives valuable information to teachers in education on which are the methodologies aiming at the improvement of creativity the are worth applying individually, or at the community level and which are the sub-areas they should focus on (Szarka, n.d.). These factors therefore contribute to the teachers' work, which they can direct efficiently, especially in situations when the goal is to improve creativity. In many cases it is clearer for a teacher if he focuses on certain sub-areas and elements of creativity, because he can integrate them easier into the class length of subjects. If the improvement of just one factor takes place, it already contributes to the global pedagogic task aimed at the improvement of creativity (L. Fodor, 2015).

2.2.5 Creativity as endangered species

In summary, creativity is undoubtedly an ability which is necessary to be in focus. Basically, this focus can be independent from the fields of science, but still ignoring it in the field of education entails serious consequences. The trend of decreasing creativity occurs in different aspects, creative man increasingly becomes a part of "endangered species" (Kaszás, 2011). Being creative is a possibility for everyone. Researches demonstrate that the level of creativity shows a decreasing tendency with age, thus its improvement must be included in the most important tasks of education focusing on the right factors. This chapter ends with Kaszás's (2011) quote which also confirms that the aim of this research and its core element, the lesson aiming at the development of creativity is definitely important and suppletory. We cannot pay enough attention to the fact that we should increasingly transmit solution methods to teachers via diverse channels, in order not to ignore an ability on busy weekdays which is indispensable for success in all aspects of life. *"It would be very important that an approach that handles creativity as a value prevail in the entire process of education. This useful vision or approach should not be the privilege of elite schools and institutions working with advanced pedagogical systems, but it should predominate in all schools for everyone. It is essential that school education should not be reduced to the transfer of ready-made »canned knowledge« but rather it should teach techniques of acquiring and using knowledge, and improve abilities."* (Kaszás, 2011, p. 23)

2.3 Most important educational methodology opportunities in co-operation

2.3.1 Co-operation: team spirit vs. competitive spirit

We know since the rise of Darwinism that we must fight for survival and only the strong survive challenges. The theory based on co-operation rejects and claims that **humanity can thank co-operation for the achieved level of development** (Apicella & Silk, 2019), this is also supported by the fact that co-operation appears among the factors promoting creativity analysed in the previous chapter (Sahlberg, 2009). Before, learning together with someone meant that the person was not able to “prepare himself” without the help of other people, while this is one of the best strategies to learn how to learn (Chen, 2002). The majority of Hungarian young people know the concept competitive spirit than team spirit because they compete with each other for better grades, or getting into the best grammar school, but nowadays most primary schools also require applicants to pass an entrance exam before starting school. It is demonstrated that **methods building on co-operation applied during education strengthen community, increase the value of work help students understand and accept new things,** (Robbins, 1994) and **can develop other social skills like communication skills and conflict management** (Altun, 2017). Some occurrences of the methods building on co-operation, like group work therefore promote the improvement of a number of other skills, while the formation of heterogeneous groups makes it possible for students to motivate each other during the solution of the task (Szücs, 2018). Results of examinations done at schools also justify that by contrast to an environment supporting competition **methods resulting in co-operation are more appropriate for the creation of intrinsic motivation** (Kim, 1998). Researchers made a summarising synthesis based on 20 recently published high-quality studies discussing the topic of learning building on co-operation about the efficiency of the method. All these studies applied experimental plans and sophisticated statistical techniques analysis of data. From this work, researchers established that **an education building on well-designed co-operation has consistently positive effects**, which means an average of 17-percentage point benefit in the learning of students. In other words, **a student reaching 50 percent under traditional circumstances is capable of reaching 67 percent, provided that we undertake to transfer knowledge via a task building on co-operation created by well-structured and well-designed conditions** (Averianova, 2014). As a methodological starting point of the present

chapter I am going to examine two important aspects of co-operation after analysing its wide and diverse literature context. In my analysis I am going to put the spotlight on the problem-based learning building on the foundations of active learning methods, and the co-operative learning organisation.

2.3.2 Co-operation-based active learning

It can be felt within the framework of higher education – especially in the case of universities for medicine and economics – that they facilitate the acquisition of this key skill, co-operation with different methods. It is well known that some universities for example have completely switched to problem-based teaching – whereby they look for the solution for a given problem in small groups, together – in order that graduate students can enter working life with a greater advantage (Cohen-Schotanus, Muijtjens, Schönrock-Adema, Geertsma, & Van Der Vleuten, 2008). The role of co-operation-based active learning in education is more and more important, the definition of its concept was already well-known by teachers at the beginning of the 20th century. Students can learn both in a passive and in an active way.

We are talking about passive learning when the participation of students in the learning process is manifests itself only in listening. **On the other hand, active learning expects student not only to listen, but also to act** (Ryan & Martens, 1989). The stimulation of children's curiosity is a key factor, it is a pillar of efficient learning and contributes to the upkeep of independent acquisition of knowledge too (Á. Baráth, 2017), its essence can be summarised as the education for creative work (Lechnitzky, 1912). The introduction of active learning to public education can be associated with John Dewey (Dewey, 1923), his name serves as an umbrella term for numerous teaching methods too.

The most important point in common is the student, who, as an acting-creating subject comes into the focus of the teaching process (Bonwell & Eison, 1991). Instead of tasks students are confronted with problems requiring creative thinking, where the task is to detect and create the solution and the way to the solution (Bús, 2015). They answer questions and in parallel with this, they raise their own questions, gain personal experience and help each other in learning (Vastagh, 1999).

Comparing the definitions of the concept the following things can be underlined as common connection points in the intersection of the definitions: the involvement of students is more than mere listening, there is less emphasis on the one-way delivery of information and much more on the improvement of skills and abilities. Students are involved at the level of

thinking, analysis, synthesis and evaluation, they do activities like reading, writing and debate. A greater emphasis is placed on students' values and the mapping of attitudes. Certain strategies of active learning, like research, case, discovery, project or problem-based learning (L. Nagy, 2010) often build on the joint learning of the group as well. Realising a successful and effective group work is not easy. It is necessary for group members to divide work among themselves, invoke arguments be able to complement each other's comments and express a single position. This can also be experienced in active learning-based education (Kissné Gera, 2016). **In summary, therefore during active learning students get involved in the action process and they are inspired to think about the action process, they are actively involved** (Bonwell & Eison, 1991).

Analysing from the point of view of public education and higher education, the most common didactic, educational theory models of active learning in pedagogical literature are as follows: discovery-based learning, teaching with learning, project-based learning, problem-based learning and co-operative learning (Á. Baráth, 2017). As a part of the present thesis, the last two models of the approaches of student-based active leaning, the problem-based learning and the co-operative learning are going to be examined, whose explanation is that out of the active learning-based methods these are the two methods regarding which I have discovered important connection points with the educational methodology tool developed by myself which will be presented in the research phase.

2.3.3 Problem-Based Learning

Problem-based learning, the PBL method, is the product of the sixties, seventies which was first established in North American medical schools where the main motivation was for medical training to be switched from teacher-centricity to student-centricity, thus active learning organisation could take on the role of passive learning (Á. Baráth, 2017). Many attempts were made to define problem-based learning such as the one of Howard S. Barrows, who was an American doctor and medical researcher who introduced PBL method to secondary schools. During their research they pointed out that only a small part of medical students were capable of interconnecting their scientific knowledge with the problems presented by patients, which recognition allowed and created openness to novel educational and learning organisation approaches, such as problem-based learning (Barrows & Tamblyn, 1980) Barrows's (1984) definition is structured around student-centricity, the facilitator role of teacher (his task is to encourage conversations), the focus on the problem and student group work.

Another definition is built on the establishment that PBL is an active learning method whereby students **examine** a subject **in relation to a real problem connected to the topic and the knowledge** (Boud & Feletti, 1998). This can also be interpreted as a special paradigm of learning organisation and competence development (Arató, 2008). This is the method that greatly transforms teachers' role perception and viewpoint (Molnár, 2004). Teachers do not give formal lectures, but instead **he outlines a problem to be resolved**. Learning requirements are not specifically defined, this is **discovered by students, they have to find out what knowledge they need to acquire to solve a given problem** (Gardner, 2011). In many cases, this requires the collection of missing data, and a plan of how to do it. (Á. Baráth, 2017).

Therefore, it can be seen that problem-based learning can be interpreted in many approaches (Tóth, 2017). It can be considered to be an educational method, where working together in a group and looking for a realistic problem change the learning of students. It has a positive effect on critical and analytical thinking (Duch, 1996). PBL can also be interpreted as a development-educational approach building on problems which do not have a simple, permanently right solution and it is also possible that no best solution exists. (Finkle & Torp, 1995). It presupposes divergent thinking, expects this thinking from students and creates an open problem-solving situation (Dorst, 2011).

Problem-based learning is a transcurricular educational approach, where the starting point of the learning process is the problem itself. The type and definition of the problem depend on the characteristics of the educational institution. A problem can be well-defined and ill-defined. This means that the type of the problem itself predicts thinking processes which are expected to take place during the solution. **In everyday life we often face ill-defined problems, where in many cases even the goal is not clarified either, so we must prepare both other people and ourselves for these kinds of problems** (Pásztor-Kovács, 2015). In this context it should be avoided to define a problem which can be resolved with a routine algorithm, because this way an essential element of learning organisation disappears. During PBL students receive an ill-defined problem, thus first they have to define it, and later the problem can be redefined. An ill-defined problem also presupposes the necessity of further information, proposing students' activation and proactivity. The nature of a problem comes into focus. These types of problems motivate students more efficiently (Molnár, 2005). Problems are usually formulated based on real life in a way which corresponds with the educational purpose and a system of requirements. These can be fictive problems, but it is essential that they serve educational purposes too, because this also defines the direction of the learning process (De Graaf & Kolmos, 2003). The

problem situation is complex and diverse but its important characteristic described above is that there are no ready-made formulas for its solution (Á. Baráth, 2017).

Problem-based learning is not just a didactic method, it allows the improvement of student skills which are pushed into the background or completely ignored in traditional education (Á. Baráth, 2017). During PBL **emphasis is given to the development of specific competences like adaptation, ingenuity, the holistic overview of problems, the recognition of learning gaps and strengths, independent learning, the development of efficient communication skills or co-operation** (Baráth, 2017 in Savin-Baden, 2000). Within the framework of higher education – besides the fields of art and engineering, mainly in the case of universities of medicine and economics –, it can already be felt that the acquisition of many key skills, for example co-operation is stimulated by different methods, including PBL. It is well-known that certain universities for instance have completely switched to problem-based teaching – during which student look for the solution for a given problem together, in small groups – in order that graduate students can enter working life with a greater advantage (Cohen-Schotanus et al., 2008).

The PBL method also strives to improve creative and critical thinking systematically, the results have already been confirmed by several researches (Ersoy & Başer, 2014; Yeo, 2008). During their research, Ersoy & Başer (2014) examined first-year university students majoring in statistics, where at the end of the applied PBL process, results show that students identify and resolve problems with their own ideas and skills, thus they can improve their creative thinking which is one of the top-level skills. This conclusion can be put in parallel with for example Yeo's (2008) research, who states that students take responsibility for learning with more flexible mentality in each phase of the PBL method. In addition, he proves that creative problem-solving, the identification of the problem, the phase of evaluation and conclusion can be improved with the PBL method.

A particularly important element of PBL contributing to the above is group work, but not in the traditional sense. Students work according to the guidelines of their mentor, in a co-operating small group, which co-operation is encouraged by the active, integrated nature of learning focusing on the joint gain of experience (Á. Baráth, 2017). It helps create a safe environment where students feel well and are not afraid of asking questions. It improves communication skills. During group work students actively participate in the work, which is a responsible task, thus they can feel important, the group counts on them. Overall, it can be said that group work applied during PBL also enhances the performance of students, improves abilities indispensable for social integration, affects empathy by listening to the other members

of the group and promotes the better understanding of the problem from several different aspects as well (Molnár, 2004).

In summary, it is therefore important to establish that despite problem-based learning has a number of advantages for educational actors, students and employers, the approach is still underappreciated from the point of view of education. Just let us think about it: problem-based learning allows students to acquire learning as a process, contributes to the improvement of key skills, like independent examination, competition and debate. It provides teachers, educational stakeholders with a toolkit, a solution to release the increasing pressure related to the curriculum, allow interprofessional education and development, and realise an education which is in accordance with employment demands. It can encourage students to participate in the solution of problematic everyday situations, despite their complexity and diversity. Problem-based learning provides a tool to handle diversity and leaves a choice for both teachers and students (Savin-Baden, 2000).

2.3.4 Co-operative learning organisation

Co-operative learning organisation (Arató & Varga, 2005) can be derived from the English term “co-operative learning”, and it has several translations in the Hungarian pedagogy discourse. (Arató, 2011) Co-operative learning organisation reflects the meaning of the term more precisely as co-operative learning, the meaning that refers to the method of learning organisation, focusing on the placement of processes into a structural framework, because we are not primarily talking about a teaching methodology (Arató, 2011). Co-operative learning organisation is therefore not another new method, it is much more a learning and teaching organisational framework, in which every pedagogical practice considered to be alternative can be realised building on real co-operation (Arató, 2011).

Co-operative learning organisation is an approach of active, but not every active learning is co-operative (Keyser, 2000). Co-operative learning organisation means the educational use of small groups, thus students work together to maximise their own and each other’s learning (Johnson & Johnson, 2008). Co-operation-based learning has to be planned for a good operation, taking into consideration the right size of the group, the role of each student within the group, and how results will be evaluated and used in the class. Each student participating in the co-operative learning group take a role in the performance of the task. This is therefore more than simple group work (Keyser, 2000), despite that it is often identified with it in everyday pedagogical language (Arató, 2011).

Literature imposes more requirements concerning co-operative learning (Pap-Szigeti, 2007). In order that the characteristics and principles of co-operative learning organisation can be interpreted precisely, it is worth summarising briefly what the difference is between traditional group work and co-operative learning organisation, what the most important distinguishing marks are. Traditional group work and co-operative learning organisation are compared based on Arató's (2011) work.

In traditional group work the composition of the group is typically homogeneous or random, while during co-operative learning organisation **groups are always heterogeneous**. In traditional group work co-operation is not guaranteed, the reason for this is that tasks are not built on each other and therefore there may be stowaways and hard workers. The established roles are mostly hierarchical, this is typical in the case of teacher's role, there is only illusion of autonomy, as opposed to **co-operative learning organisation, when the teacher is present as an equal partner too** who ensures autonomy for the group by transferring his role.

Personal responsibility and accountability are ensured by the independence of the group members, thus interdependence can also be observed which is planned and organised during co-operative learning organisation, while in traditional group work accountability in most cases is done by the teacher, and interdependence mostly produces a negative outcome. Publicity in traditional group work is realised only in a frontal situation, while during co-operative learning organisation we can talk about a **structurally guaranteed co-operative publicity**, for which an excellent example is mosaic structure which can be considered to be the starting point of co-operative learning organisation (Arató & Varga, 2005), it provides a basis for co-operation-based learning.

The American social psychologist Aronson is considered to be the postmodern founding father of the **mosaic structure-based learning organisation** (Arató, 2010). Aronson does not create a new pedagogical programme, or a new methodology, but he introduces **structural principles**, which create co-operative situations justified from the point of view of social pedagogy as well, and build on these situations (Arató, 2010). The point of the mosaic method is that the children in the class split into heterogeneous groups. Heterogeneity is interpreted as regards cultural background, social situation and the development of skills. The teacher divides the curriculum of the given lesson into as many parts as the number of group members, so everyone gets a part of the teaching material which they interpret individually, and/or consulting with the member of the other group working on the same topic, and then they learn material parts together or teach them to each other. Knowledge is put together like a mosaic, and students test each other's knowledge during learning. The teacher's task and responsibility

are limited to preparation, the creation of the groups and the provision of additional materials in the case of individual interests, which limitation rather gives a key role to the teacher (Aronson & Bridgeman, 1979).

In the field of education this group work-based methodology resulted in a paradigm shift in the approach of constructing knowledge. It was one of the first non-hierarchical **co-operative structure** instead of a hierarchical learning organisation procedure, (Arató, 2010), whose result was confirmed by a research as well. I actually brought a change in attitudes, acceptance and **empathy increased** among the different children's group which justified its existence too (Aronson & Blaney, 1978). Aronson's mosaic model can only be considered to be of sub-co-operative nature from the point of view of today's co-operative learning organisation building on stricter principles. This means that positive interdependence, personal responsibility as an important principle plays a role in it. There are several other determining basic statements which are still missing from the model, therefore from today's perspective this learning organisation procedure cannot be considered to be co-operative. There is no doubt that co-operation-based learning organisation developed and consolidated its strong position to date in the field of pedagogy-education via the mosaic method. Aronson opened the co-operative structural perspective for science as a pioneer analysing it at the level of everyday practice (Arató, 2010).

Although studying the literature of co-operative learning organisation we find principles of different authors of different number and denomination while working on the topic the approach is practically based on the same doctrines (Johnson & Johnson, 1987; Kagan, 2001). In the present thesis four principles are highlighted which are included in most researcher's works, and the terms of Arató & Varga (2005) are applied.

During the **co-operative learning organisation** we are talking about a new learning organisation approach, which is proven to inspire student's learning motivation acquired via own experiences. It proposes the conversion of school education in a way that it **builds on the interdependence of students and own experiences and focuses on a co-operative environment instead of constantly competitive mood.**

As opposed to traditional group work this is a form of learning organisation whose operation is defined by several principles. It applies small group work, this is the basic unit of co-operation. This is carried out with a high level of awareness, consistently relying on its principles where there is an underlying conscious teacher's activity. Heterogeneous mini communities are formed in a controlled way within the large group which function as separate units but (may) co-operate with other groups as well.

The 4 principles of co-operative learning organisation the (a) **constructive and motivating interdependence**, the (b) **possibility of equal participation and access**, the (c) **personal responsibility and the individual accountability**, furthermore the (d) **inclusive interaction** (Aranka Varga, 2015). Based on Varga's (2015) explanation participants undertake clear and well-defined tasks (c) in line with the principle of personal responsibility and accountability, where the teacher's role is significant in the strategic creation of these tasks, accountability is already realised at the level of the group, it is directed by a desire to comply with the expectations of the group. They demonstrate their knowledge and the performance of tasks to the group, the positive interdependence instead of frustrating accountability has motivating effects, feedback is received immediately, intensifying responsibility and involvement.

The realisation of inclusive interaction is almost unthinkable in classes, while forcing less extroverted, reserved students to speak is a specifically contraindicated reaction of teachers, which may start a uncertain behavioural process in the student (Zétényi, 1998). During co-operative learning organisation, tasks of the group are defined in a way that all participating students' activity is necessary for the common solution, they show an active participation instead of passive reception. The (d) principle of parallel, inclusive interaction results in an active involvement with the tool of small group work organisation. In other words, the teacher applies a learning workframe in accordance with this principle, where **student do not only have the possibility of acting, but by means of the co-operatively structured work form, the active participation of every student is necessary for the common task to be actually performed**. Small groups working in parallel with each other multiply the possibilities of comments and active participation of students. Personal interactions promote the realisation of a learning process which is more inclusive than passive reception.

The (a) constructive and motivating interdependence will be fulfilled in a way that the teacher distribute tasks so that **the solution can only be found if everyone does his own task**. During the tasks differentiation is realised, thus the possibility of personal development is ensured in an adequate proportion. This does not change the phenomenon that the big picture comes together if everybody adds his own part to it. Real results are only created, if everybody executes his task successfully, which phenomenon serves as another motivating factor.

The (b) equal participation and access are also ensured by the well-organised structure. Tasks are differentiated by student's abilities, needs and expectations. The share of knowledge and provision of access for a common solution is indispensable, while bearing in mind the dimensions of equal opportunities is a priority in all cases (Aranka Varga, 2015). The basis for

co-operative learning organisation is co-operation, the acquisition of knowledge builds on this skill therefore its continuous improvement is indispensable. Based on Arató's (2010) study, the chance to successfully realise learning ideas is higher in a co-operatively structured learning situation. In recent decades it has been proven that **the inclusive guarantee of co-operation improves not just children's social skills, but also the individual access to knowledge.**

2.3.5 Group work, as the driving force of co-operation at primary school

Taking this into account, **the presence of sessions teaching how to be co-operative** and the necessary environment **has critical significance** not just in higher education but at a young age as well. Although these facts are widely known **only few teachers take advantage of group work at class**, because they are not just time-consuming, but there is also the possibility of skipping school together, and teachers are also limited by the quantity of teaching material and the lack of time. This is even truer for primary schools where teachers work notoriously hard to teach materials in time. We need to realise that it is important to teach primary school students how they can co-operate with each other, because the lack of this skill may lead to poor performance (Vargas et al., 2018). Some type of group work should therefore form a generally accepted part of teaching ideology at primary school too (M. Galton & Williamson, 2003). In light of this most students get familiar with this learning method only at upper primary school.

Group learning is embodied in interactions within the group. The subject of learning is not only the individual but also the group as a whole (Knight, 2002). As a part of the active learning process we can talk about traditional (earlier name) or collaborative (more recent denomination) group work (A. Horváth, 1994). Besides, problem-based learning can also use group work as a tool to work on the problem (and does regularly), furthermore, a key element of co-operative learning organisation is group forming too. During group sessions the improvement of problem-oriented thinking takes place. Action-based learning activities, like independent information acquisition or so-operative learning techniques are realised more efficiently in group sessions. Acquisition is therefore more effective, longer-lasting and more entertaining because it provides students with the real experience of learning (K Nagy, 2012).

The active learning methods highlighted in this chapter have in common that they build on the co-operation of the group members and the development of the necessary attitudes is an open intention. The beneficial effects of group work does not equal the denial of the importance of individually acquired knowledge. **A harmonious relationship between the two learning**

types is necessary for the achievement of the best result (Csíkos, 2010). According to the co-operative approach, the effectiveness of learning increases if we provide opportunities to co-operate, where they can compare and discuss strategies and solutions, or possibly they can create them together. Co-operative learning and learning organisation have already been presented, but the completion of the topic requires to mention the literature of collaborative learning too.

In order to better understand PBL and co-operative learning organisation the differences have already illustrated in the subsections discussing the given topic. Here it is interpreted from the point of view of traditional group work focusing on its characteristics. The social-psychological and pedagogical foundations of co-operative learning organisation and traditional group work are rather close to each other in the literature.

Despite it is not wide-spread enough in public educational practice, collaborative learning significantly affects the adaptation and integration of co-operative learning organisation into everyday education at the theoretical-cognitive level of teachers. (Arató, 2011). Co-operative learning can be considered to be a subcategory or subspecies of collaborative learning where, as opposed to collaborative learning members take both individual and collective responsibility (Pásztor-Kovács, 2015). From the point of view of group dynamics, this is the most important difference. During collaborative learning group members do not have their own tasks, nor do they have mutual responsibility. They are under pressure, because if they do not participate in the work, the outcome will be inappropriate and/or they will not achieve any results. The lack of group roles leads to collective loitering (Latané, Williams, & Harkins, 1979; Pásztor-Kovács, 2015) and fights for positions (Bonebright, 2010), but it is also possible that only one member of the group takes the lead. The collaborative situation by nature allows a group member's total passivity and rule in the same task (Pásztor-Kovács, 2015).

During the application of traditional group work a characteristic of group development is that group work starts right after the formation of the group (Arató, 2011), allowing spontaneity, which characteristic can facilitate applicability for teachers. Regardless of the co-operative/collaborative nature of group work it is proven that it has positive effect on certain levels of co-operation, its significance in the educational process is not even a question, and neither is that it is worth integrating into everyday education by the teacher already at lower primary school. Group work supports conscientious task performance and contributes to the strengthening of profound learning style. In her research, Ceglédi (2009) shows that in classes where group work-based tasks are regularly carried out, there is a correlation between the need for knowledge acquisition (competence) and test results. The increasingly intensive emergence

of competence-based teaching encourages educational actors to apply group work more and more regularly and extensively (Ceglédi, 2009)

Therefore, the fact should be kept in mind that, **co-operation itself is a learnable skill too**. This is proven by Reinke's (2001) research which states that the application of group work-based collaborative methods is capable of improving the skill of co-operation in a short time, and it strengthens **not just student-student but also student-teacher relationships**. This is particularly true during a co-operative learning organisation process where the teacher, by supplementing this, leaving aside his traditional, hierarchical role, directs, defines and monitors the corner points of co-operation from the background.

2.4 Roles and challenges of the teacher

*Lead them, do not go astray,
And always stay true to yourself,
For you take the lead, seen from afar,
Never forget: you are an example!*
– László Nagy –

The increasing significance of human resources in a special sector of economy has already become visible in the case of school interpreted as an organisation (Serfőző, 2005). Teachers' attitude, openness, flexibility and the challenges they face are decisive from the point of view of reception/acceptance. Although students are in the centre of attention, the driving force of school includes teachers imparting knowledge and the established teacher-student relationship/interaction/co-operation (S. Horváth, 2018).

The quality of the educational system is reflected by its teachers conveying values and knowledge and they are also the most important element of the system (Barber & Mourshed, 2007). Being a teacher is not just an occupation, it is more a **profession**. When it is asked how a teacher's career can be attractive, unique value system and dedication are often mentioned as decisive arguments before social factors (Jancsák, 2012; V. Wilson, Powney, Hall, & Davidson, 2006).

High level of professional knowledge excellent pedagogical sense, practical experience, authenticity. Today this is not enough for a teacher to get the attention of his students. Generation Z which is in the focus of our examination lives its life in an accelerated environment, rejects idle pastime, and demands efficient knowledge transfer. **These people**

would like to get information of the quantity and quality they need at that very moment, which suits their interest and satisfies their thirst for knowledge. Generation Z requires the improvement of abilities and skills in a different way than the previously established methods, which phenomenon can only build on the openness of teachers. To attract the attention of the digital native generation it is necessary for teachers to know digital tools, so openness must be realised in this field as well. The role of knowledge of skill nature has increased, while thinking operations supporting the acquisition of knowledge and providing help for the solution of certain problems have become increasingly indispensable (Pásztor, 2014). Besides the fulfilment of curricular requirements and the increasingly great workload, teachers' room for manoeuvre is minimal, thus the improvement of thinking skills presents a challenge both at operative and theoretical levels.

2.4.1 Teacher-student relationship

The dimensions of the former authoritarian teacher-student relationship which can be defined as hierarchical have changed, and a generational role reversal is perceptible. Based on the experience of my research this exists until they get into a real situation of this kind (D. Horváth, Cosovan, Horváth, & Lachin, 2018). Individual needs demand creative, design processes, and the reinterpretation of teacher-student relationship on new foundations like partnership and reciprocity (Fullan, 2013).

Since the introduction of teachers' career model, it is an increasing expectation of teachers **to understand how students learn.** The only way to understand this is to meet up with students in another form, in a different environment, which confirms changed dimensions (Nagy-Czirok, 2017). Teachers become more and more unfit to contact students, because inflexible educational concepts and regulated tool selection do not create this opportunity. Autonomy decreases while control increases and the standardization of outcomes will be typical, because this is required by international tendencies as well. The necessity of change can be detected, in which change results are achieved by the joint performance based on the co-operation of teachers and students whose starting point is the quality of relationship between them (Zolnai et al., 2016). The significance and role of another form and a different environment are not a question, because in the majority of traditional, ordinary education the teacher already/still cannot be really called a master. A master is somebody we can work together with on the real creation of a problem, a question or a practice-oriented task. Usually, he can rather be characterised as the transmitter of information. The received information is impersonal, the

one-way process does not favour the establishment of co-operation and the creation of confidence (Csíkszentmihályi, Rathunde, Whalen, Wong, & Halmos, 2010).

The establishment of a good relationship between the student and the teacher is one of the key goals of education in the literature. The teacher can have an educating, awareness-raising effect which forms children's personality via personal relationships (Sallay, 1995). The significance of the teacher-student relationship is increased and made unquestionable by the fact that during an examination it turned out that **the relationship between the teacher and the student could be put in parallel with the mother-child relationship**, because a caring and supportive teacher can significantly form children's personality which is similar to the effect of mother-child relationship (B. A. Mason, Hajovsky, McCune, & Turek, 2017).

In her research, Éva Szabó also highlights a very interesting phenomenon, namely, that a considerable part of school experiences can be related to the teacher, and only secondarily do students associate these experiences with their classmates or any other components (É. Szabó, 1999). Here it is important to mention that **the teacher is an example and also a person to follow** for children which is the essence of the quote at the beginning of this chapter at the same time. Students look up to him if his professional preparedness and knowledge are extended and impeccable, but besides they consider it to be even more important that he should be present in the educational activity with his entire personality. These allow the teacher to become an example for students which by itself is a step towards the deepening of confidence (Lévai, 2013). This is supported by the fact that besides his educational role, an efficient teacher must serve as a model, which competence is provided by status, expertise, position and also personal attractiveness, which attractiveness is also indispensable for the establishment of teacher-student relationship (Sallay, 1995).

Primary school students spend a considerable part of their weekdays in their teachers' company, they often spend more time every day at school with their teachers, than in family environment. The positive or negative nature of the relationship established with the teacher obviously has an influence on students' relationship with school as well. (Huszka & Kinyó, 2019).

Students who have a positive, tight and good relationship with their teacher, perform their tasks better at school, and their social skills are more developed than those of their contemporaries (Ladd & Burgess, 2001). Two American researchers analysed the notes of 3700 lessons of 500 teachers during their research. The results drew attention to the phenomenon that if teachers showed understanding, care and sincerity towards students, then their behaviour changed in a positive way. They pointed out that if teachers strive attitudes

which are empathic, tolerant and seek to improve students' personality, then results will follow: rate of absenteeism decreases, intellectual performance and self-assessment improve, while discipline problems decrease, thus **teachers focusing on understanding, confidence and behavioural norms leading to a good relationship will receive gratitude and compensation as positive reinforcements from students** (Aspy & Roebuck, 1974).

The quality of teacher-student relationships influences students' attitude towards each other and co-operation too. Teachers represent authority, the effect of their positive behaviour entails students' behaviour seeking the acceptance of each other and this works both ways. Teachers' rejecting, negative behaviour hinders acceptance and the formation of a community (Torgyik, 2004).

A good relationship is not established by itself, this sometimes presents a challenge for even teachers with many years of experience and requires high-quality expertise. Positive emotions are, this cannot be. Teachers must initiate its establishment or creation in a way that students accept it by not considering it to be a task (Fűzi, 2012). There are countless possibilities of improving a relationship and establishing a good relationship, like the application of adequate motivation techniques, more, quality time spent with children and the provision of emotional support. They also include the creation of a supportive environment in the classroom and the teacher's open attitude (Cicchetti & Lynch, 1993 in Huszka & Kinyó, 2019). It is worth taking advantage of the inputs receiving from students in order to improve relationships, because children have specific knowledge and perspectives about their schools and the environment which adults cannot fully interpret from this unique perspective, however, they can be valuable observations stimulating the development of the relationship too (Levin, 2000).

The application of cooperative learning organisation presented in detail in the chapters above has a positive effect on a number of skills of students, for example their communication skills develop as well, facilitating information flow of appropriate quality not just between students but also between students and teachers, which can also serve as a set of tools for teachers intended to establish good relationships (Szűcs, 2018). The harmonised teacher-student relationship builds confidence in such a way that **it supports students exposed to the risk of failure** in their daily life **by separating teaching and evaluation**, and minimising overlaps (Gillespie, 2005). This effort, and confidence-building are supported by co-operative group work-based active learning methods in way that in many cases, evaluation is not done by the teacher, but the group itself evaluates its own work (Arató, 2011), thus **the evaluation of the result is realised as a kind of self-reflection**, in which the teacher is not involved and which can be separated from the teacher's knowledge transferring role. A good teacher-student

relationship requires care, with the teacher's ideas and the application of innovative or good old practices. This only works if the teacher is motivated and active efforts aimed at the improvement of the relationship as well as the application of other innovative ideas in education are results of an internal motivation, and not a pressure/instruction from the leader.

2.4.2 The teacher as the engine for change

Zolnai et al. (2016) claim in their study examining the situational picture of the Hungarian public education in an international context, that top-down reform efforts could further increase uncertainty, which can be an adverse factor despite their intention to help (Zolnai et al., 2016). And what is more, as a result of continued reform efforts “there has been a doubt in teachers' community about new top-down reforms for years” (Veres, 2016, p. 43). Indeed, it is essential for real change that internal motivation and will, as well as willingness to co-operate be present in the system, that is the key factor for the success of centralised reforms can be bottom-up initiatives (Halász, 2008).

Innovation building on institutional professional autonomy and the given resources derives from the initiation of teachers and represents the pedagogical innovation building on the above (Becze, 2011). Taking education policy decisions is a slow process, because in the majority of cases many decision-makers and approval bodies are necessary. Teachers working at schools feel that these decisions – besides they raise doubts in them (Veres, 2016),- are a pressure, burden or an innovation coming from outside or realised by orders from above. The decision itself already triggers this reaction regardless of its quality or utility. These decisions can have a negative effect even on teachers with a basically innovative approach because they can become disinterested. Partnership is the key. If decision-makers strived to plan and implement innovations and reform efforts co-operating with education actors, relying on their experience and opinion and taking advantage of the potential of their professional knowledge, the idea itself and the realisation would become more seamless, the most important actors would be involved and their commitment would be strengthened. Continuous common learning and experience could mean an effective collaboration even in the long term (Saly, 2016).

Because of this standpoint of the literature I take the view that **my intention to take and integrate my educational methodology tool into primary educational institutions via teachers** is justified (D. D. Horváth et al., 2020). In many cases, if the most important actors can be convinced of the progressive nature of a method during reform efforts, this can result in immediate involvement and confidence (Zolnai et al., 2016). Indeed, the goal is to make

learning more effective (D. Molnár, 2019). It would be worth finding new directions instead of the linear model, which focuses on the creation of an environment suitable for the change, where problem is a friend and asking for help means strength and courage (Halász, 2008), while co-operation is the starting point itself.

2.4.3 How can a teacher teach students how to start a business?

Entrepreneurial education is the first and undoubtedly the most important step towards the consolidation of an innovative culture in Europe. **Entrepreneurial education combines experience-based learning, skill improvement and – most importantly – the change of the way of thinking.** The younger the age at which students are exposed to entrepreneurial spirit, and the higher the number of students who get in contact with this spirit, the more likely they will be willing to start a business (K. Wilson, 2008).

The generally accepted / expected attitude of the 21st century is the entrepreneurial attitude which does not only appear at the level of economy, because it is also about finding out what it should become, which at the same time points out the objective of entrepreneurial education, and which is primarily reflected in employment growth. Education could greatly contribute to all of this by integrating entrepreneurial knowledge besides professional knowledge (S Gubik & Farkas, 2016). There is no clear consensus on the exact role of the school and the teachers, or the knowledge that is worth transferring at the level of everyday education, what society and economy might need.

This need includes the education of entrepreneurs who are dutiful, who have the characteristics of students of a sound understanding, and keep in mind social responsibility besides their own success. Today the role definition, determining how teachers can contribute to this process is not evident either. (Fülöp & Pressing, 2012). The research pointing out that school rivalry and entrepreneurial education are in harmony with each other raises further doubts and uncertainty. Consequently, the intensity of competition between students at school has a positive effect on entrepreneurial spirit and momentum (Falck & Woessmann, 2013).

This evokes conflicting feelings and raises questions for teachers striving for peace, tranquillity, conformity, harmonious school atmosphere and community creation. Is a teacher capable of being motivated in entrepreneurial education if this can mean that he has to go against principles which he considers to be priority and which are of particular importance with respect to other aspects (Fülöp & Pressing, 2012)? Besides the uncertainty around involvement, the explosive increase in the intensity of interest in entrepreneurial education which can be

observed among educational stakeholders and participants of scientific researches is not negligible either (Fülöp & Pressing, 2012 in Rizza & Varum, 2011).

We have a competition-based society. In this environment economy is driven by profitable enterprises, and this is the environment where the values of flexibility, entrepreneurship and mobility are brought to the fore. In this environment, students need different competences and skills in order to prevail and become successful (Mihály, 2001).

In accordance with this, one of the less analysed areas of teachers' roles deserving priority is entrepreneurial example, the integration of entrepreneurial spirit into everyday education under the teacher's direction, in real situations. The National Core Curriculum based on Government Decree (110/2012. (VI. 4.) and the amended National Core Curriculum introduced in the school year 2020/2021 already focus on the teachers' entrepreneurial example with more emphasis, striving to reduce the uncertainty around involvement.

The teachers' tasks include the encouragement of entrepreneurial spirit supporting students to face challenges and promoting creativity and versatility. NCC formulates 7 key competences following the key competences recommended by the European Union and taking into account and integrating the Hungarian characteristics. Their feature is that they cannot be exclusively linked to any learning area, they build on the acquired knowledge to various degrees and in variable composition and they are improved during the learning-teaching process. In the case of subjects it is expected that they are linked to key competences. **Key competences also include employee- and innovation-related, and entrepreneurial competences**, confirming the *raison d'être* of the effort to develop the important and nowadays increasingly prioritised entrepreneurial attitude in education too.

Based on researches found in the literature, this forms more an integral part of education in other European countries. Regarding the integration of entrepreneurship into education we do not mean the elaboration of subjects focusing on this kind of knowledge and the integration of these subjects into the curriculum, but instead, real experience, how students can be capable of producing new goods (products, services, methods, systems, approaches). Socialisation of entrepreneurial skills of constructive nature building on the compliance with the rules is indispensable, and teachers must become key actors in this process (Fülöp & Pressing, 2012). This includes another aspect to be developed, namely how students can be capable of shedding light on their own innovation and attitude from a new perspective. This new perspective can have an impact on how they succeed in the world of work. The latter is also influenced by the set of tools acquired in order to survive. This educational approach requires a totally open attitude from the teacher in order for him to recognise its catalyst effect on economic life later,

as well as its positive contribution to students' personal progress, the influence on attitude and education for life. Based on their research, Fülöp and Pressing recognise the importance of entrepreneurial education, whose practical realisation is seemingly much more difficult (Fülöp & Pressing, 2012), while it tends to be in focus.

2.4.4 Creative teachers, creative environment, creative children

Most research focusing on creative individuals emphasize the outstanding **“Big-C”** during which creative process **a large-scale product** is produced, which is novel and useful to society or an accurately segmentable, well-defined part of it (Ruth, 2008). In recent times more and more attention is paid to the phenomenon of “Little C” (Craft, 2001), that is **everyday** (Ruth, 2008) **creativity**. According to the definition of everyday creativity, creativity is **when an everyday man provides solution identifiably deriving from a unique way of thinking to a problem of a given life situation**. When I examine the characteristics of a creative teacher, I mostly concentrate on the phenomenon of everyday creativity (Ripple, 1989 in Anderson, 2002; Bramwell, Reilly, Lilly, Kronish, & Chennabathni). It is extremely hard to define the characteristics of creative individuals, although certain researchers strive to list these features, including for example: curiosity, the independence of judgement and thinking, intuition, idealism, risk-taking and capacity for the performance of tasks (Torrance, 1965). This also shows a strong overlap with the literature approach (J P Guilford, 1950; Torrance, 1974) discussed in the previous chapter, and creates a starting point to accurately outline the personality traits of a creative teacher.

Researches carried out in an educational context show that the common characteristics of creative teachers are confidence, and through this, solid factual knowledge inseparable from self-confidence, enthusiasm and commitment, furthermore the understanding and acceptance of the self as a creative being also contribute to teachers' creative personality (Cremin, 2001). **A creative teacher is not afraid of risk-taking** either in professional or private life, what is more, **he encourages reasonable risks** (Craft, 2001 in Cremin, 2009; Morais & Azevedo, 2011). He undoubtedly easily demonstrates his own creative commitment, and reveals ambiguity and uncertainty related to creative efforts, **while interprets failure as a part of the learning process**. This latter phenomenon can be linked to self-confidence.

It must be underlined that a creative teacher **is not afraid to show emotions and feelings either**, and in addition, his everyday work is multiplied by a great deal of moral and political investment (Woods & Jeffrey, 1996). **Therefore, a creative teacher typically spends**

more time forming the teacher-student relationship too, resulting in a closer, stronger and more harmonious relationship (Morais & Azevedo, 2001).

One of the most valuable characteristics of a creative teacher – based on his self-assessment – is that **he is able to create students' autonomy and shift their self-confidence in a positive direction** (Morais & Azevedo, 2001). Autonomy appears as an own skill of a creative teacher and refers to the independence of school system and the planning of the syllabus as well (D. R. Anderson, 2002), which can be brought in line with the essence of the previously analysed pedagogical innovation. It must be emphasized that teachers' creativity cannot always be interpreted individually, there is a strong collaboration, because an idea can often come from a work or process building on common thinking and co-operation (John-Steiner, 2000 in Cremin, 2009).

The improvement of creativity is not a personal interest any more, it is a priority for the whole society. The obvious space of improvement is the years spent in public education, thus the support and expansion of creativity must be ensured in educational processes (Mező, Mező, & Varga, 2019). Teachers must be facilitators of the creation of a creative environment helping all this, and this role requires them to have a significant proportion of the characteristics defining a creative teacher. Since, **if teachers do not consider the promotion of students' creativity to be important, then it is not probable that the creation of an environment facilitating the improvement of creativity will be a vital task for them**, they will not tackle it as a priority (Beghetto, 2006).

Today, the co-existence of the various roles of teachers is a social expectation. The application of some techniques, improvement methods and creative teaching is not enough for the unfolding of students' creativity. What is more important is that **the teacher's style should holistically be permeated by a creativity supporting attitude** (Ambrose, 2005). Extracurricular creativity improvement and courses specifically focusing on this can be useful, but it will be really effective if it becomes integrated into everyday life (Péter-Szarka et al., 2015). Indispensable elements for this are motivation and independent work. Students must be encouraged to ask questions and resolve tasks building on open problem-solving situations, which are also worth discussing from a perspective which has rarely been applied so far. The catalyst role of teachers appears here in connection with the support of creative environmental factors, where the fulfilment of this role can be facilitated by the creative workshop elaborated by myself (Fryer, 2009; Péter-Szarka et al., 2015).

It is important to examine that if there is a creative teacher who is also able to act as a facilitator of the creation of the creative environment how much effect this can have on the

efficiency of children's creativity education. Does a creative teacher educate more creative children in a creative environment?

Teachers' tasks do not only include education for creativity, but also the recognition of the potential of a creative, talented student for the given student's personal development. The tasks include the improvement of characteristics and abilities necessary for the creative work and the assurance of its conditions (Detre, 2015). It is also important to see whether a student's creativity unfolds, develops, or it is pushed into the background or repressed during the years he spends in public education. In order that an idea, a thought can take wings or creativity can get more space, an open attitude of the school and the teacher is necessary instead of a framework which locks up innovative mind in a box (Buda & Péter-Szarka, 2014; Detre, 2015).

This openness is much more likely to be present in the personality of a creative teacher, as it has been confirmed earlier. Teachers are able to have an effect on the creative potential of students both directly and indirectly. The attitude and perspective of teachers have an influence on the recognition of the creative potential of students, but what is more important is that perceptions and creativity-related expectations of teachers can indirectly affect the perception of the future own creative potential of students (Gralewski & Karwowski, 2018 in Paek & Summers, 2019). The behaviour of the teacher can either promote or block (Beghetto, 2006) the encouragement of creativity, which driving force is obviously much more intensive, if the teacher also has the personality traits of creativity.

The inhibitory effect can result from a negative feedback from the teacher regarding a product considered to be creative, as a consequence of which the student loses his interest in creativity resulting in the phenomenon of disintegrating creativity (Beghetto, 2014). Partnership also carries the success of creative learning, increases the efforts to learn and the advance of creativity at work (Horng, Hong, ChanLin, Chang, & Chu, 2005). Based on the related literature the creativity of the teacher and the supportive environment he creates can unequivocally induce the emergence and improvement of childrens' creativity. Beyond that, the co-operation supporting role of the teacher is also very meaningful in the improvement of creativity and other attributes which are particularly important from the aspect of our research, whose analyses will be carried out in the next sub-section.

2.4.5 The catalyst of co-operation: roles of the teacher in group work

Teaching profession is an occupation, in which feedback information is of very poor quality. The really important and determining result will only be available for the teacher after a very long time. Hence, it is difficult to improve, sometimes it happens that teachers teach in the same way for years and they are quite unaware that the method they apply does not go in the right direction (Csapó, 2007). Group work does not allow this to happen, because feedback constitutes its basis. **During group work, results are clear and immediately visible**, provided that there are a sufficiently motivated teacher and community capable of co-operating. A motivated teacher is able to positively affect the community. Researches have pointed out that if an enthusiastic teacher stands behind the podium, students' interest increases, they are more energetic, they can rather be characterised by curiosity and excitement regarding learning (Patrick, Hisley, & Kempler, 2000).

In many cases, group work appears as a hidden tool in the teacher's hands which works subconsciously for students, and it has an effect on efficient work and motivation too (Pajor, 2015). It is a non-negligible aspect either that its result is visible, the feedback immediately gets to the teacher and the student at the same time.

Many teachers have raised that group work is basically an adult task, and young children cannot be expected to resolve such a methodological approach well. There is also a strong consensus among teachers, that it is not an easy task for children to work together. For this reason we need some certainty, whether it is worth investing overwhelming energy in efforts from the point of view of affected learning processes and learning outcomes (M. Galton & Williamson, 2003).

The openness co-operation in children is already determined by the seating arrangements. According to Galton and Williamson (2003) if the teacher seats children in groups then they will feel inspired to share and exchange – not just their tools – but also their opinion much sooner, and the rivalry for individual results will be replaced by the exploitation of joy in the opportunity to work together.

A number of observations at primary schools prove that conversation among children in the classroom is of a much lesser extent than was assumed (M. J. Galton, Simon, & Croll, 1980; Mortimore, Sammons, Stoll, & Ecob, 1988).

It can be seen that the role of the teacher already begins with the arrangement of the classroom, the creation of the space providing opportunity for co-operation. Generally speaking, **the role of the teacher in co-operative learning includes (1) the definition of**

goals, (2) the grouping of students, (3) the explanation of tasks, (4) the follow-up of group work, which can be linked directly to the cognitive performance of students (Deering & Meloth, 1993 in Ding, Li, Piccolo, & Kulm, 2007), and **(5) the evaluation of results and co-operation** (Bettenhausen, 2002). The teacher actively monitors the operation of the groups, intervenes when necessary, gives advice, supports the formation and improvement of the willingness to co-operate by raising questions and he is ready to answer questions related to the solution of tasks, when required by students. The role of the teacher in the process can mostly be characterised as a consultant. It is important he allow students to evolve, and the group to operate independently and efficiently, leaving behind the habits ingrained during frontal education, which poses a big task for the teacher (Johnson & Johnson, 1987 in Ding et al., 2007).

The definition of a successful teacher is built on the characteristics defined as follows (Fúzi, 2012; Tímár, 2006). These characteristics can be put in parallel with attributes emerging during the process of a group work, this way we highlight the role of the teacher during group work by collaboration and the bilateral (teacher-student) opportunity for development. Group work provides all participants with the opportunity to develop.

A **successful teacher has (1) a good relationship with his students.** Group work facilitates the strengthening of the relationship, because for the establishment of a non-hierarchical relationship it is important for students and teachers to connect to each other in different situations, thus the student and the teacher are placed in a different context for a while with just the temporary change of the situation which serves as a catalyst for their social interaction, builds confidence (K Nagy, 2012), but also improves creativity (Horng et al., 2005). A successful teacher **(2) is able to manage conflicts and direct.** Group work requires an emphasis on these characteristics. In the case of a group work, the teacher is present as a trainer, he has to direct processes, - even if from the background - help students through conflicts, if they arise and he also serves as a kind of facilitator-mediator (Buchs, Filippou, Pulfrey, & Volpé, 2017), by ensuring independence for students. During traditional group works, autonomy is only pretence, but co-operative group work is truly built on the independence of students (Arató, 2011). The **(3) ability to change** is also one of the characteristics of a successful teacher. Group work contributes to this in such a way that it is about continuous adaptation, the appearance, rejection or integration of new ideas (K Nagy, 2005). Besides students, the teacher also has to follow these changes in his own role, and adapt to them if he intends to help the successful operation of the group. Finally, a teacher can be really successful, if **(4) he is creative.** Co-operation and creativity are connected and their inseparable nature is

strengthened here, and I refer back to the previous chapter as well, confirming its substantiation by the literature. **In the lack of creativity, the teacher cannot encourage students to be creative either, he fails to set an example.** During group work, the improvement of creativity is generated via joint idea generation (Martinez, Gonzalez, Campoy, García-Sánchez, & Ortega-Mier, 2014), giving space for the emergence of creative thoughts (Fűzi, 2012; Tímár, 2006).

2.5 Students: generation Z with new educational needs

If a child can't learn the way we teach, maybe we should teach the way they learn.

– Ignacio Estrada –

When we make a product, one of the most important criteria for success is that we must perfectly know the person to whom we want to sell the product (Bauer, Berács, & Kenesei, 2007). Therefore, in the final phase of the first part of my literature review I am going to put the generation under the microscope, which forms the primary target group of the educational methodology tool created as a part of my research, and which was important to get to know in order that I create a useful novel product which is acceptable for them too. Generation is a group of persons around the same age, whose collective personality is ensured by the same historical time and space (Howe & Strauss, 2000).

The present research mainly focuses on the consisting of primary school students especially children aged between 10 and 14 years studying at upper primary school. They are the age group representing generation Z who are considered to be the representatives of the **digital native** society by the literature (Pál, 2013). The characteristics of the age group and the birth of the new generation were first recognised by Tapscott (Csobanka, 2016). When I contemplate my primary target group, I also refer to generational characteristics that is why emphasis was placed on the examination of generation Z in the thesis.

Generation Z includes children born approximately between 1995 and 2012 (C. Juhász, 2017), so the thesis also applies this definition of generation. It is worth underlining that the different views in the literature usually agree on generation Z, or at least on the starting point (Schroer, 2008). It is important to note that generation Z covers a broader age group, than that this research focuses on, in particular upper primary school students. The most uniform image about their behaviour can be acquired via the analysis of the generational characteristics. Of

course, not everybody shares the same values, or has the same experiences as their mates of the same age group included in the given generation. There is a common social and historical, context shaping their worldview in a similar way. Consequently, generational researches can provide institutions with valuable information for the planning of efficient educational policies, programmes and practices (Seemiller & Grace, 2017).

2.5.1 General characteristics of generation Z

The rapid development and rise of technology, the precarious economy and the movements of social justice played an important role in the socialisation of generation Z. It is more open-minded to and tolerant of non-conventional things, which differ from average things (Shatto & Erwin, 2016). They grew up after the 9/11 terrorist attack, thus their relationship to violence shows a totally different level, they know that a similar event can occur practically any time of the day. There is fear, but it does not hinder them to feel the power and the ability creating opportunities for them to change the world. Of course, these phenomena contribute to the formation of the other generations too. Generation Z has not got any benchmark (Seemiller & Grace, 2017). For them, the Internet, the online connection is part of the world they live in, their life is formed with digital technology and processes under its control in an inseparable whole. They are “the members of a generation growing up on the Internet, who know its images and language and handle brief up-to-date real-time information with images” (Törőcsik, Szűcs, & Kehl, 2014, p. 6).

Generation Z can get whatever they want via the Internet at the push of a button from a young age, and this phenomenon is embedded in their culture and practically they take it for granted, thus patience has a diminishing role (O’Connor, 2016), as opposed to the desire for immediate knowledge which is a priority (Mendoza, 2018). **We can consider the Internet to be their first teacher, since they got to know digital world and information contained therein, already before formal education**, thus it was not a question whether they would become the main component of their learning (Geck, 2007).

They are the generation who are recognised to be the children of mothers of the highest average age, their family is typically small, during this period the number of children per woman fell below 2. This may be the reason why the most attention was paid to the education of this generation, furthermore, according to estimates they have the longest life expectancy (Pais, 2013).

They can be characterised by lifelong learning (Ferincz & Szabó, 2012) and the effort to find a balance between work and private life (Krajcsák, 2018). The nature and main features of the generation is well illustrated by the denomination of this generation by the literature (Pais, 2013): wired generation, net generation, dotcom children, Facebook generation or digital natives indicate the characteristics of this age group (Prensky, 2001). They use devices which are able to connect to cyberspace extremely well, they are present on multiple platforms at the same time, multitasking content consumption is self-evident for them which is realised not just via 1-2, but 4-5 screens (Glum, 2015). Their presence in the big online publicity is also a natural and normal phenomenon for them, in most cases they generate it, and in addition they are the main characters of social media. Generation Z is social, this cannot be questioned, however they prefer written communication over vocal (Igel & Urquhart, 2012).

We consider them to be the world's first global generation. There is a large overlap regarding their cultural and gastronomical consumption, clothing trends, entertainment habits, there are no clear geographical boundaries, and for them, these have never existed online unity has enabled this generation to develop their global generational characteristics, irrespective of their language and residence, and exploit opportunities of the active encounter of cultures and continuous interactions from the very beginning (McCrindle & Wolfinger, 2010). This is confirmed by the fact that the members of generation Z have created words and expressions the other generations already do not understand (Tari, 2011).

2.5.2 Online-Offline network of relationships

Relationships are important for them, but the online/offline nature of the relationship shows a diverse picture. Initially, they use online space to nurture and develop offline relationships, they are convinced that they can reach have by their side anybody, anywhere anytime by the opportunities provided by digital tools and the Internet, but after a while, a tendency can be observed that online relationships come to the fore and outweigh offline relations (Turkle, 2017). They place much emphasis on getting to know each other which is important for them. They typically establish relationships on the online platform and maintain these relationships in the digital space, for which the main channel is the online message sending applications. It is not uncommon for them to have a dialogue in the online dimension, even if their partner is in the same room with them (Ruzsa, 2018). The online world becomes a factor influencing the formation of their identity, the online world enlarges the boundaries of

the self (Pais, 2013). Their need for freedom is therefore strong. For generation Z, well-integrated in the online world it represents a serious challenge to connect their online and offline life, and education may play a decisive role in the creation of this synergy (Bencsik, Horváth-Csikós, & Juhász, 2017).

Since technology serves as the gateway of the interactions of individuals, society has already got used to the phenomenon that individuals get more and more into a network, instead of being socially embedded in groups. Social interest and belonging to a group may influence young people of generation Z, and facilitating their verbal communication skills to become more nuanced and their wording to become well-chosen. The lack of person-to-person contacts can potentially hinder them to improve their social and personal contact establishment skills (Turner, 2015). A child of generation Z who does not have the opportunity to participate in handling and overcoming obstacles through personal interactions, will potentially struggle with the improvement of relationships as an adult. Remedying this situation and strengthening the personal relationship is again the responsibility of the school as well, (Turner, 2015), where collaboration and co-operation-based methods may serve as a tool.

2.5.3 Generation Z and group work

Generation Z would like to become an active player of the learning method in such a way that they can immediately apply the acquired knowledge in real life (Seemiller & Grace, 2017). Dotcom generation is basically impatient and primarily strive to acquire practical knowledge. According to their perception, they find all information in the online space, **they use specialised search engines at the level of proficiency and do not question the validity of the found information** (Shatto & Erwin, 2016).

Generation Z possessing advanced problem-solving skills needs to play the role of the observer. They often consume video contents, as the first step towards acquiring knowledge they identify the role of the observer. Certain researchers in literature believe that members of generation Z are smarter, **they are more able to control themselves, be independent** and the faster processing of information. There is something however, in which they do not top the previous generations. This is co-operation and co-operation-based learning methods. Generation Z is primarily open to group work in an online form, but this openness is only realised under much pressure. It is important that as compared to the other generations the share of knowledge is perfectly natural for them, they undertake to make their knowledge public openly, without stakes (Bencsik & Machova, 2016).

Openness to and ability for co-operation therefore cannot be called a generational characteristic, it is more **an intergenerational feature**, where the composition of the set shows a diverse picture of the age group. **We can also call them Co-generation. When we talk about Co-generation, we talk about a community capable of realising a non-hierarchical co-operation, which we can interpret as the teacher-student relationship already mentioned before.** They are the “generation”, who have the most advanced co-operation skills, who apply co-operation most vigorously both in their everyday lives and in order to resolve a workplace issue. They can see co-operation as an opportunity, where the spectrum of knowledge is multiplied, thereby contributing to the efficient and fast problem-solving.

Social and constructivist learning theories claim, that acquisition and expansion of knowledge cannot be realised without the interactions among people, the tool of the interpersonal communication, while psychology presents the emotional benefits specifically to people who struggle to learn the teaching material isolated. (Igel & Urquhart, 2012). Therefore, it is extremely important that the application of co-operation-based learning methods among young people plays a key role, its efficient application among the members of generation Z requires a high level of awareness, which is also confirmed by several researches. Consequently, collaboration-based tasks for net generation must be planned carefully, because **intrapersonal communication is put to the fore**. This is because of the generational feature as a result of many attributes, that digital space gives room for, what is more, supports intrapersonal learning processes. In spite of this, mates and instructors are regarded as a valuable source by dotcom generation, but this generation needs to make the decision to work together with other people by their own rules and views, and it is indispensable for them to get to know the problem and independently think over the concept and the recommended solution prior to the co-operation (Seemiller & Grace, 2017).

2.5.4 A generation rejecting formal power relationships

From the point of view of my research it is important to underline the modification of the relationship to authority of this generation. They do not show any willingness to follow the rules. They need rapid change, renewable impulses, and continuous improvement which they handle well, since they were born in this environment, the fast-paced lifestyle can be considered to be their substance (Pais, 2013). This is justified by the fact that the attitude of the members of generation Z to formal power relationship-based leadership is negative. The freedom of individuals as well as self-fulfilment are extremely important for them, while they refuse any

formalities and subordinate relationships (Szabó-Szentgróti, Gelencsér, Szabó-Szentgróti, & Berke, 2019).

The **need for professional development is prioritised over career development**. They especially enjoy the aspect of group work that they have the opportunity there to develop without hierarchy. Therefore, it is important to build on this already at primary school (Wey Smola & Sutton, 2002). This confirms that a very informal methodology, free from limitations and rules is necessary if we want it to be received positively and to reach its goal, namely that the creativity of the world's first global generation can improve, and their horizons can be expanded in a way that we free them from formalities and show them new directions (Pál, 2013).

Since these young people ignore reality other than their Internet-based world, they have probably increased their technological expectations, attitude and conviction towards each other and their environment, including teachers too (Geck, 2007). Generation Z has got used to and learnt “new” technologies, they had no other choice, since they socialised in this, they do not know anything else, and do not tolerate if somebody (even another generation) does not know the continuously changing, new, digital infrastructure (Gale, 2015).

The gap between the teacher and the students of generation Z is widened by the fact that the teacher belonging to another generation understands the discourse and the specific language developed by Facebook generation imperfectly, or does not understand them at all, which can subconsciously make students feel that the hierarchy and the power distance increase, resulting in a lack of confidence (Besenyeyi, 2016). A mitigation solution is if the teacher is also able to become open-minded and learn the vocabulary of generation Z, furthermore if he improves his digital knowledge, and undertakes to learn from students. This results in a positive teacher-student relationship already discussed in the previous chapter and an inherent positive impact on the dotcom generation and contributes to the strengthening of offline relationships and interpersonal communication. This latter includes the development of skills necessary for the co-operation with other people, like active listening, constructive criticism and the ability to respect and accept other people's viewpoints, which are in many cases different from ours (Frey, Fisher, & Everlove, 2009).

Many questions are raised to and from teachers teaching generation Z regarding the teaching-learning processes. One thing is certain: this may sound surprising, but **the involvement of generation Z can only be achieved if education is adjusted to their own needs** (Shatto & Erwin, 2016). Students become committed to the teaching material if it is related to their personal life and interests, if they actively participate in the process, and if

attention is paid to the improvement of students, instead of focusing on scores and grades (Pletka, 2007). Teachers will only be able to achieve that Facebook generation become a group of efficient students and active members of the society managing arising conflicts and showing understanding, if necessary, **with the creation of a dynamic learning environment.**

There is a generational gap complemented with a parallel acquisition of digital knowledge as a key competence mandatorily integrated into education, the integration of technology use into everyday educational practice, the changed social norms raising a lot of yet unanswered questions. One thing is certain: in order to minimise the distance between teachers and students distance the features of generation Z, including common vocabulary together with digital and technological knowledge must be integrated into the training of teachers, because in lack of this knowledge overlap, the relationship will launch parallel communication processes going in different ways, which may be reflected in the quality of education in the long term (Cruz & Díaz, 2016).

3. Potential linkages of education and economy

If the purpose for learning is to score well on a test, we've lost sight of the real reason for learning.

– Jeannie Fulbright –

In our country, public education is a public task, so it is evident that the development of pedagogy is present in inseparable unity parallel with the political and economic development of the given society (Csapó, 2011). The strongest linkage between education and economy is represented by the actors. Those generation Z students – who were already interpreted and got to know before – who still sit in the school desk will soon get to the labour market and become significant actors as engine of the economy. They become such actors, who attain lifelong learning as an expectation, and who expect useful knowledge that harmonises with social and economic needs (Csapó, 2011).

This dissertation that deeply analyses educational science and pedagogy considers it top priority to create connection, and to initiate dialogue among education and economic actors. The main aim is to highlight that the close cooperation and harmonised communication of these two areas is indispensable. Tasks of the educational sector should contain the satisfaction of

needs by the economic sphere, but this is only feasible if dialogue is continuous in the topic of employee expectations from the side of economic actors.

If we regard workforce production as a process, then what constitutes the result or output of education becomes the input for the companies. The occurrent question is that **when and how should a little child who enters the education system start preparing to be an employee? What kind of advantages can come to the students and for the economy if schools prepare students for life after school intentionally, integrated into the curriculum, from beginning school?**

3.1 Multiplied tasks of pedagogy

Knowledge accumulated by the community, and its transmission for the upcoming generations, namely teaching can practically be considered as old as civilization. The more and more intensive and wide-ranging spread of education can be traced back to the end of 19th century, when significant growth began, and need for skilled employees was multiplied. The growing value of knowledge in the second part of the 20th century has expanded more than ever, and, in parallel, expectations from employees began intensive growth. Tasks of pedagogy have multiplied, and it tries to provide useful, usable knowledge (Csapó, 2011).

Besides the constantly changing expectations of the economic sector, educational institutions have to struggle with the constant presence of social, technological, and cultural changes. Moreover, these institutions have to continuously adjust, adapt, and react to these changes. This response, response time, and flexibility moved in a positive direction in the case of educational institutions, but the distance is still large between economy and education (C. M. Szabó & Balázs, 2020). Literature sources shed light upon how important it is to connect together industry and education on the level of study programme, where actors of education initiate the invitation of industry participants, and its systematic appearance in everyday classroom practice (Mei, 2019).

3.2 Education as an investment

Development of public education can be considered as one of the best investments. Several literature sources (Hanushek & Woessmann, 2010; Krisztina & Pál, 2015; List & Horn, 1940; K. Nagy, 2016) underpins the positive impact of theoretical and practical education on

economic growth. Less studies deal with the question what kind of educational development, expansion is needed for such growth (Keller, 2006) Quoting Csapó: it is a highlighted task to acquire such an attitude that *”education is no longer perceived as consumption, some kind of luxury expenditure that we can spend on only if other needs are already satisfied, but (from an economic perspective) as an investment that is advised to privilege others, because expenditures on this have better return than other investments”* (Csapó, 2011, p. 1068).

Education is viewed as it favourably influences growth rates by different development mechanisms, including, but not limited to increased productivity and literacy (Schultz, 1963), spreading effects of the community’s average educational attainment (Lucas, 1989), or the acceptance of new technology (Keller, 2006). It is important to note that the aim of education cannot be reduced to raise economic productivity. At the same time, the linkage between educational and economic performance cannot be independent. **Those economic theories that consider human resource, acquired skills and capabilities, and cumulative social knowledge as catalysts of the economy** have half century-old past.

The PISA (Programme for International Student Assessment) results that are measured every three years and based on age-based survey act as useful mirror to educational and economic actors, opinion leaders, and developers. Data cumulated through measurement set up exact reports, precise models to demonstrate if the efficiency of educational systems are increased, then how much economic output it could generate (Csapó, 2011). In the report that integrated the PISA results and other statistical data of OECD (Organisation for Economic Co-operation and Development) it was analysed if the education of a country would reach the level of Finnish education in 20 years, then, based on the estimates, it would represent 5-6 times of their yearly income as a surplus for the generation who were just born (OECD, 2010). The report also sheds light upon how much does a country loose that does not react in time on the present problems and opportunities in public education (Csapó, 2018). Another study highlights that globally, related to the analysed time period, faster economic growth was visible in those countries where enrolment rate also increased in secondary and higher education. Besides, growth was also visible where public educational expenditure per capita in primary and secondary education was higher, and where more investments were made in elementary schools in general (Keller, 2006).

It is not by accident that academic literature unequivocally proves **positive connection between human capital and economic growth**. Those investments and industries whose employees possess more skills and higher education have higher innovation and performance rate. Lexical, technical skills, high qualification is only one in the plethora of modern employer

expectations. The so-called soft skills and personal characteristics equally contribute to success. According to the World Economic Forum, from the sixteen critical proficiency factors, ten are based on soft skills. **Soft skills can also be called employment or entrepreneurial skills. Their peculiarity is that these are not industry-, or profession-specific** (Deloitte Access Economics, 2017).

3.3 Soft skills as the most important employer expectations?

Business success and national wellbeing requires that the social class that gives the most important workforce should possess a wide range of skills (Deloitte Access Economics, 2017). Therefore, for young people and teenagers today, success in school and later, in the workplace requires critical thinking capabilities, and to be able to work as a team in this often very complex social system (Igel & Urquhart, 2012). **Those students who regularly study in a well-structured, cooperative environment prepare much better for life after school, and for job market expectations, too** (Igel & Urquhart, 2012). Groups that are flexible and aimed to improve at workplaces serve as a model, where these informal work groups are applied. The use of these workgroups is more and more introduced in education (DuFour, 2004).

3.3.1 Soft skills: definition and the inherent business potential

After a general introduction and overview, if the exact definition is analysed, then skills can be defined in the following way: *“Skills are psychic systems that are organised from inherited and learnt routines and simpler skills and knowledge, which are activated as components of capabilities and competencies in the operation and functioning of personality ”* (J. Nagy, 2000, p. 255) Related to the hierarchy and relationship of the different elements, several ten thousands of routines and thousands of skills are forged into capabilities, then these capabilities group together into 3 general and some special competencies (J. Nagy, 2000, p. 255). Therefore competency is a whole of skills, capabilities, knowledge, abilities, and attitudes (Gógh & Kóvari, 2019) that guarantees the mobilisation of our knowledge, and integrates the capability to learn. It can also be said that skills are considered as a sub-category under competency. Literature admits that there is an overlap between competency and skill, although the difference of terms is real (Rychen & Salganik, 2000).

Cooperation, problem-solving, and conflict management are such competencies that job market need, independent from the exact qualification, and more and more schools build learning skills that support these competencies into the core curriculum (Aronowitz, 2010). These skills cannot be connected to any course (Kovári, 2019), and are categorized into the group of soft skills.

The naming of soft skills shows a varies in the literature. Their definitions can be interpreted as social skills/competencies, general competencies, transversal competencies, non-cognitive skills, but large international research projects and organizations mention soft skills as 21st century skills (Ananiadou & Claro, 2009) and key competencies (Cinque, 2016). It is important to note that the different names involve different definitions that overlap and complement each other. In this study **the term soft skills and the related and accepted definition are applied.**

Soft skills represent basically more the set of behaviour, attitude and way of thinking, and personal characteristics that enable people to efficiently manage their environment, and to cooperate with others. Soft skills can be categorised into two large groups depending on whether the attribute can be connected to **intrapersonal** (i.e., inside the individual), or **interpersonal** (i.e., among individuals) skills.

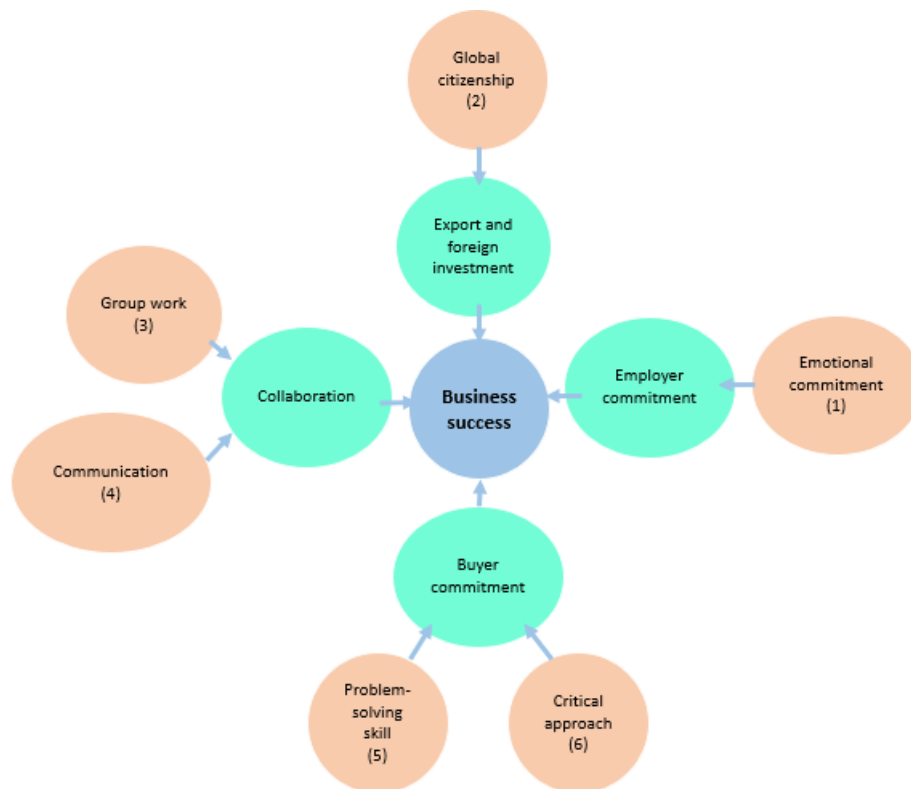
Intrapersonal skills are related to the capabilities of an individual, and to how he or she can manage himself or herself (see time management, stress management, or creative thinking). At the same time, interpersonal skills by definition relates to how a person can handle his or her relationships for optimal development such as motivation or negotiation skills (Sunarto, 2015).

Soft skills as skills that support internal and intrapersonal interactions are indispensable for personal improvement, social participation, and job success (Kechagias, 2011; Lippman, Ryberg, Carney, & Moore, 2015). These skills support positive performance and the reach of aims. Their applicability is widely possible, and can function as complementary elements of technical, professional, and academic skills. Soft skills can change during a life cycle, and they do change, but the ease of change happens through different mechanisms in certain life stages (Kautz, Heckman, Diris, Ter Weel, & Borghans, 2014). There is a growing amount of evidence that soft skills not only complement academic and technical skills but compete these skills. Expected demand and level of employment can be forecasted in the possession of these characteristics (Kautz et al., 2014).

Soft skills are proved to raise firm value, and their positive effect is indirectly palpable in business results. According to the study of Deloitte Access Economics a figure is

made to perfectly interpret how employees with high-level soft skills contribute to better performance of metrics of key importance that lead to business success. The elements of Figure 1 that are considered most relevant from the aspect of this analysis are presented with slight modifications in this dissertation.

Figure 1: Contribution of soft skills to business success



Source: own elaboration based on Deloitte Access Economics

Strong emotional commitment (1) leads to low fluctuation. This result is confirmed by a research that involved around 600 employees. Based on that study, the level of emotional intelligence measured with self-evaluation strongly correlates with staying at the workplace (Jordan & Troth, 2011), which is in the interest of the company, because the firm spends a significantly large amount of money on the training of the employees in the first year, and in the case if the employee leaves the firm before payback period, than it is realized as a loss (P. Juhász, 2005). The study highlights that if an employee can be characterized by the view of strong global citizenship (2), then partners turn to the company that makes export with higher trust. Cultural sensitivity also helps in trust-building. In our country, the term global responsibility is used instead of global citizenship (Abdullahi, 2010). The reason for that is that this direction of education and motivation of students is not about preparing them to take

advantage of globalisation by the educational institution. This is more about having the ability to take responsibility for the future of Earth together, as part of a global community (Varga, 2018). In the chapter that explained cooperation, the factors that support cooperation were mentioned line teamwork (3), and proper communication among members (4). Cooperation has priority role, it is considered as a key factor of firm success, its lack has such consequences like the decrease of market power and efficiency (Takácsné Prof Dr György & Benedek, 2016). In Figure 1, two further really important soft skills are present as indirect driving forces of business success. These are problem-solving capability (5) and critical approach (6). Both skills support customer orientation, that is the most sensitive element of business success. The above detailed analysis states that soft skills can generate significant benefits, even in those industries, and maybe especially there, where these skills are not considered as the most critical points of improvement by companies (Deloitte Access Economics, 2017). It is visible that the contribution of soft skills to business success gets more and more space in company management thinking, so at that time not only the development of soft skills of already existing employees becomes prominent, but the expectations from new employees develops to a higher level.

3.3.2 Expectations towards young employees

Considering proper professional preparedness by the employer is essential. As it was highlighted in the previous chapter, the presence of soft skills is more and more significant. According to the forecast of Deloitte Access Economics, the soft skills owned by employees will become decisive factors for two third of employers by 2030, compared to the results from 2000, where it was only true for the half of workplaces (Deloitte Access Economics, 2017). Critics by employers about higher education is more and more typical, because – in their opinion – higher education does not prepare students properly for the actual job market (Hurrell, 2016). Literature review also illustrates that there is a growing interest in soft skills. The lack of academic programs for their improvement and the need that companies / employers should make more efficient and productive communication, cooperation, and partnership with universities to handle this case (Succi & Canovi, 2020). This is the missing dialogue that's importance is highlighted in this dissertation.

The most important soft skills are listed year by year based on the collection of the professional portal LinkedIn. These skills are represented as employer expectations to employees. During the method of determining the most expected skills, those skills are analysed

that have the highest demand. Determining demand is done based on the registered LinkedIn profile characteristics of employees who are applied in the highest proportion (B. Anderson, 2020; Petrone, 2019). Those skills are on the top of the list which – based on company managers' evaluations – are considered as the most valuable, that are hard to be found among employees, and that support the higher level serving of customers. **The appreciation of soft skills is supported by that these are the competencies that robots cannot generate automatically**, human mind is indispensable to do that.

In 2019, creativity, persuasion, cooperation, flexibility, and time management took place among **the 5 most important soft skills** (Petrone, 2019 in C. M. Szabó & Balázs, 2020). In 2020, creativity was again in first place, then persuasion and cooperation – similarly to 2019 – were on the podium. Flexibility reached the same place. **Emotional intelligence** instead of time management had a more significant role in the possession of the most important soft skills by employees from the aspect of company expectations (B. Anderson, 2020). The professional opinion of Péter-Szarka confirms the results of the LinkedIn study, namely that creativity, critical thinking, communication, and cooperation skills are among learning and innovation skills. Based on these skills it turns out who can successfully hold on in the more and more complex world of life and work in the future (Péter-Szarka et al., 2015).

Academic literature discusses more and more with the expectations towards soft skills. A Hungarian study for example analysed the creativity-related expectations from fresh university graduates generated by the job market, which used the responses of high school teachers, HR experts, and university students. Results highlighted that creativity is prioritized mostly in the area of marketing, leadership and management, R&D and planning, and design for employers, and its measurement is first and foremost executed during probation, because it is believed that this is the period when real employee creativity comes out (Zoltayné Paprika & Nagy, 2013).

The workshop I developed builds precisely upon the above-mentioned elements: critical designer approach and cooperation as the two major engines of creativity ensures the base that is proved to enable the development of important soft skills. If young entrants have those competencies that are harmonised with employer expectations, then they can properly fit in work environment. It is important to note that these will be those initiative personal competencies that provide solid background that professional competencies can rely on (C. M. Szabó & Balázs, 2020). With the above-mentioned results a study from 2018 done by the National Association of Colleges and Employers (USA) can be compared with, in which 172 company managers were asked to enumerate those skills/characteristics that they considered as the most important from a potential fresh graduate. In the survey such large enterprise managers

participated as GE Appliances or National Instruments. As a result, cooperation – behind communication, and problem-solving skills – was on the third place (NACE, 2018).

Although relationship and overlap are visible, there is no fully concordant consensus in this question in the literature, namely, exactly which are those soft skills that mostly contribute to primarily young people's job market success. One related study (Lippman et al., 2015) revised and analysed more than 380 literature sources from all over the world that are related to the subject, but cover and span several disciplines. Among the literature empirical studies, employer analyses, international consensual projects were present. Research methodology contained – beyond the extended and systematic literature review – consultations and focus group interviews with the people of interest including researchers, leaders of programs in closely connected topics, employers, and members of the concerned young people, too. During the literature review it was a criterion among others that the study cannot be older than 20 years and related to its results it definitely reflects the job market. In the study the relationship between soft skills and key important results of workforce were analysed, including employment, workplace performance, wages, and entrepreneurship success (Lippman et al., 2015).

Contribution of soft skills to personal success related to the labour market can be identified on the following levels. Those young people who possess soft skills can take advantage during job seeking and can get a position to a greater extent. Conscientiousness is proved to affect search success in a positive way (Uysal & Pohlmeier, 2011). After finding the successful job, maintaining the position is more typical among those employees who possess higher soft skills. Authors of the study mention confidence as an example, which is an indispensable skill to maintain a job position. Besides, soft skills have both direct and indirect effects on salary levels. The study also connects entrepreneurial spirit and enterprise success with soft skills, and considers their positive relationship as key results (Lippman et al., 2015). Beyond the above-mentioned advantages, those employees who have a lot of soft skills give benefits to employers, because they are more productive. **Those who possess enough critical thinking and problem-solving attitude are able to ask much more precise questions, which enable a better final output in the end of the process** (Soland, Hamilton, & Stecher, 2013).

Soft skills can be treated as one group based on their specific characteristics. The study – from the aspect of my own research – shed light upon one very important result. The study describes which are the 5, closely connected soft skills of key importance that contribute the most to young people's labour market success and provide the most support. These are the skills

that are worth the most attention and more emphasis should be put on their improvement in the ideal case, at a younger age.

The first group is formed by (1) **social skills**, their role in social interactions is the most significant. These contain respect to each other, and to be able to behave properly in a certain situation and get a highlighted role in solving conflicts.

In the second group there are (2) **communication skills**, which represent understanding, efficient provision of communication, mode of expression, and the presentation of knowledge and ideas. Related to this study, communication skills are interpreted in a workplace setting and not in general.

The next skills are (3) **higher-order thinking skills**, which contains problem-solving, critical approach, and decision-making. This group of skills enables problem-identification and collection of information from multiple sources in order to make the most rational consequences after evaluating the possible options (Stein, 2000 in Lippman et al., 2015).

The research identifies (4) **self-control** as highlighted group of skills. According to these skills, an individual can drive his/her emotions and impressions, can drive his/her behaviour, and can reach higher outcome in all the above-mentioned labour market factors. This comes to the front especially in the case of younger age groups, so job seeking, getting, and maintaining their jobs is more prominent among those who possess enough self-control.

(5) **Positive self-concept** is also present as member of the 5 key competencies, which contains self-confidence, self-efficacy, self-awareness and beliefs, and self-esteem as pride.

The enlisted 5 skills are connected to each other. Intrapersonal skills of self-control and positive self-concept contribute to the level of expertise of the other three interpersonal skills and vice versa. Social skills, communication and the higher-level knowledge of higher-order thinking skills contribute to better self-control and positive self-concept. These five skills that are proved to be present at workplaces are supported by the literature and the interested parties, and during the review these became high priority conditions for the success of young employees (Lippman et al., 2015).

3.3.3 Efforts to develop soft skills in education and beyond

The importance of soft skills has been recognized, international organizations, projects dedicated to this are working on the development and integration of them (Cinque, 2016).

Between 2008-2012 ModES³ project aimed to modernise higher education through the accreditation of soft skills (Perez, Haselberger, Oberhuemer, Cinque, & Capasso, 2010). The purpose of the project is to integrate the common European programme on soft skills into academic curricula. Its objectives also include an initiative of great relevance from the aspect of this research, which is to achieve a better match between the profiles of graduates and labour market needs. The project will seek to develop a long-term, enhanced relationship between universities and businesses in order to make progress. As a result of the project, a new curriculum has been set up in several languages, which broadens the students' profile with employment-oriented competencies such as leadership, entrepreneurship, the ability to generate new ideas, and creativity. This kind of effort can help to develop soft skills of the right quality and should be integrated into secondary and primary education institutions alongside higher education.

This can be supported by the empirical evidence from several studies that soft skills also change, can be developed, and are not present with the same intensity and quality at different stages of life. The energy devoted to their development is therefore important, the most important period being school development in early childhood (K. Fazekas, 2018; Schulz, 2008). **The most ideal environment for the development of non-cognitive skills is the school**, but this requires a motivated teacher, as the development of soft skills requires different competencies from the teacher (J. J. Heckman, Humphries, & Kautz, 2014 in K. Fazekas, 2018).

In addition to motivation, an important first step is to ensure that both students and teachers are aware of the importance of soft skills, as without this knowledge, motivation to develop them will also be missing. (Schulz, 2008). The complexity of the non-cognitive skills is not negligible, and their development in the long term also means the development of cognitive skills (K. Fazekas, 2018), and vice versa. In an ideal education, the acquisition of cognitive skills does not take place without the inevitable and unconscious development of students' soft skills, which of course requires conscious preparation on the part of the teacher (Schulz, 2008).

The policy guidance and synthesis on the development of soft skills confidently concluded that the most effective way to acquire them is to focus initially on a small number of skills with relevant formal input. A high level of life experience is also needed. It is also not negligible that the individual move in and out of his or her comfort zone during the practice

³ <https://www.euca.eu/modes>

phase, and sometimes it important to have relevant and constructive feedback from community members. The community also helps development because they are able to observe and understand the individual (McGurk, 2010).

Thus in this chapter I will try to answer the question of what is the best, most effective way to develop soft skills. To do that, the first step is to define the development of the human being. Once this is understood, then it can be a starting point for the level of specificity, for the possibilities of developing specific soft skills (Levasseur, 2013).

In the study of Levasseur (2013), the models of Lewin (1951) and Bronfenbrenner (1979) are explained. On the basis of this paper, I will also highlight the most important elements of the model in this dissertation, as its pioneering role in the development of soft skills in unquestionable.

Behaviour can be considered as the result of an interaction between a person and his or her environment. Since skills can develop behaviour, it follows that the development of skills is also determined by man and his environment. In other words, on the human side, the will and the desire to develop are necessary but not sufficient conditions, a supportive environment is also needed. If someone wants to learn something but the conditions are not given, then the individual will is not enough and vice versa (Lewin, 1951).

This research direction was further developed by Bronfenbrenner in his research. Human environment emerges as a critical factor in the efforts to develop soft skills, breaking down the environment into structures. The innermost environment refers to the individual himself and his immediate surroundings, such as the home and, from the child's point of view, his parents. At the next level, the individual is joined by the environment with which the individual has significant and frequent contact, in the case of a child this might be the school and teachers. The next level is the environment that affects the individual, but this is not relevant the other way round. From a child's point of view, this means, for example, the parents' workplace. The final level is the culture or wider social milieu that surrounds the individual. Its impact on the individual is tangible, but not necessarily on a daily basis. An example is the whole education system (Bronfenbrenner, 1979 in Levasseur, 2013).

The theory is based on the notion of ecological transition, which occurs when an individual's environmental situation, relationship and connection changes, and this change allows room for development. Therefore, if we want to catalyse human development, we need a positive change in the environment, a move forward. The appropriate interaction between the environment and humans is changing, resulting in an ecological transition to a

higher order environment. If there is also a personal motivation to change, the result will be individual growth and development.

Levasseur (2013) illustrates that with such an example that can be considered as very relevant from the aspect of this research. If the aim for a child is to learn to read better and faster, it must be made more enjoyable. The occurred involvement will result in an ecological transition, moving to another level from being a passive recipient to an active role player. For example, the use of collaborative learning is taken to a new level, which is likely to motivate the child to develop as an individual (the human factor described earlier in relation to Lewin takes place here). The result involves development (Levasseur, 2013).

In the context of soft skills development, this body of theory suggests that **it is a much more complex task than developing cognitive skills**. Developing soft skills requires continuous active interaction with others and a willingness to accept the resulting feedback. Real progress comes from the continuous practice of skills and the processing of performance feedback, based on self-reflection or constructive input from others, which facilitates the continuous development of these skills. **Developing soft skills cannot be learnt from a book, it's about other people and interacting with them** (Levasseur, 2013).

3.3.4 Measuring practice of soft skills

A substantial body of evidence suggests that non-cognitive skills predict a wide range of life outcomes, including educational results, health, crime, and labour market outcomes that are of high priority for my research (Kautz et al., 2014). Businesses have recognised the importance of such capabilities and that the resources devoted to developing soft skills cannot be negligible in order to reap the wider benefits. Based on estimations enterprises spend \$4 billion a year on training and another \$7 billion on recruiting the proper staff. Without the objective and comprehensive measurement of soft skills it is hard to estimate the effect of this investment (Deloitte Access Economics, 2017), their assessment and measurement is receiving increasing attention in more and more areas (Gibb, 2014).

The importance of soft skills and their role as an indicator in the economy is therefore not disputed, nor is the need to focus more and more on them in education. The research study of Deloitte Access Economics conducted in Australia already cited Deakin University as a positive example, where the criteria for graduation include the acquisition of specific soft skills as key skills, and where those who excel in soft skills compared to their peers receive the same award as those for the cognitive skills (Deloitte Access Economics, 2017).

Therefore, in order for its credibility and relevance to be generalised beyond the corporate side to education stakeholders, benchmarks and measures of progress are needed. The measurability of non-cognitive skills is challenging and far from always tangible, in contrast to the cognitive attributes that are accepted and allow for a myriad of measurement methods. Research results suggest that assessments by teachers can be a good approach. By studying and assessing primary school children's behaviour, their teachers were able to predict their behaviour in adulthood, and an important finding was that interactions in early childhood to develop soft skills help these skills to develop (J. Heckman, Pinto, & Savelyev, 2013).

In personality psychology the famous “**Big Five**” (McCrae & Costa, 1987) is a generally accepted grouping **that categorizes non-cognitive people’s groups of skills into 5 groups** and skills within each of these groups. These 5 groups are no other than **extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience**. Big Five does not mean that differences in personality traits can only be reduced into standard groups. Rather, these five dimensions are the broadest level of abstraction, and each dimension encapsulates many separate, more specific personality traits (John & Srivastava, 1999). These 5 soft skill groups have been identified mainly as a result of semantic statistical analyses on English texts but have also been shown to be relevant in other cultures. It is interesting to note that there is overlap but also significant differences in the way soft skills are grouped in the literature, depending on whether we focus on the contribution to employee success, general grouping or measurability (K. Fazekas, 2018). In terms of measurability, the Big Five helps researchers by providing a clear understanding of the skill set for everyone, thus **enabling the measurement of soft skills using standardised methods** (K. Fazekas, 2018; Roberts, Martin, & Olaru, 2015).

Identifying soft skills is easy, their measurement is a more complex process. Looking at the context of the classroom, teachers are quick to note the existence of soft skills, but their judgement is intuitive, subjective and unconscious. There is a pursuit to create benchmarks, this is supported by GRASS⁴ (Grading Soft Skills, i.e. the classification of soft skills) project, which is briefly interpreted below. The GRASS project has focused on providing a quantitative, measurable representation of the soft skills of students of different ages and educational levels, so that these skills can be formally validated and recognised, and overall, it aims to provide a partially quantifiable measurement and standardisation of soft skills (Cinque, 2016). The

⁴ <https://sites.google.com/site/lpgrassproject/project-description>

project is the result of three years of EU-funded research, the main objectives of which were to develop a quantitative measure of soft skills and a system of open badges to support assessment.

During the GRASS project, a theoretical series of indicators to assess soft skills was developed. This toolkit is open to all teachers and can be freely used, adapted to the current educational environment and its personalisation is allowed. The project has already successfully applied its performance indicators in dozens of different educational settings (Devedzic et al., 2018). Some of the indicators are quantitative. I am thinking here of measuring teamwork skills by how many meaningful and useful contributions each student has made to a particular collaborative project. Others are qualitative indicators, and in many cases integrate the opinions and observations of teachers, peers and experts. This may include analysing and assessing someone's ability to communicate with others. Regardless of their nature, indicators should include a measured variable relating to a specific component of a soft skill. In addition, it is also necessary to record a grading scale for the measured variable, adapted to the predefined performance levels. The choice of variable and scale should be made in such a way that it is specific enough to facilitate observation. In addition, these indicators may include a description of the relevant measurement procedures, thresholds for achieving minimum performance levels or specific performance standards, and a description of the functions that could potentially convert the observed values into the appropriate performance levels, so that measurement itself provides an opportunity for improvement (Devedzic et al., 2018). With the GRASS assessment method, the students' soft skills gain more value, as it is possible to obtain reliable results on soft skills in addition to cognitive skills, results become comparable and the process of defining the criteria levels is simplified.

3.4 Entrepreneurship education in the classroom

When examining the relationship between education and entrepreneurship, education and economic actors, it is impossible to ignore the teaching and development of real entrepreneurial competences, the key role of which is becoming increasingly important even in primary education. Based on EU recommendation (Council of the European Union, 2002), entrepreneurship competence get a place among key competences. Taking that into account and built on that, the National Core Curriculum also registers employee, innovation, and entrepreneurship competencies as key competencies, which are listed under cross-curricular competences (NAT, 2020). Its characteristic is that it is not necessarily linked to a specific

subject or field of learning, its development takes place in the learning-teaching process, and therefore the teacher's personality and motivation are of extreme importance, as it was already recorded in detail in the previous chapter. There is a course called finance and entrepreneurship, which can be included in the curriculum within the limits of free time frame. The use of this time frame is determined by the school's management and the teachers' association in each area, therefore, as a result of a grassroots initiative, the teaching and development of entrepreneurial competences can also be implemented within the framework of a separate course. The cross-curricular nature of the key competences is manifested in the way and frequency with which subjects in related areas, such as a text-based mathematics exercise or a civics, technology and planning lesson address the economic aspects of the discipline. In the case of geography, the National Core Curriculum include among the objectives of the course that *“develop active, creative and flexible citizenship and entrepreneurial attitudes by learning about financial and economic processes in the global world”* (“110/2012. (VI. 4.) Government Decree modification about coming into effect, introduction, and application of the National Core Curriculum” 2020, p. 400). These aspirations are important, but they should not be overshadowed by the other primary aims of the subject.

A solution to this problem could be found if the development of entrepreneurial competences is given a high priority at the educational institution, so that teachers are more likely to integrate it into the related and relevant subject frameworks of everyday teaching practice. This is supported by a quantitative questionnaire survey, which, although it focuses on higher education, provides an excellent illustration of current trends and practices in primary education. Dunaújváros University hosted the research in the spring of 2019, and the research compared the expectations of the business sector with the output competences of higher education (C. M. Szabó & Balázs, 2020). Among the results, it can be seen that the priority among the expectations of companies is the possession of soft skills, such as cooperation and good communication skills, or a proactive attitude, which, if we were to identify them with a key competence, would be a difficult task, but are perhaps the closest to entrepreneurial competences. As this cannot be linked to any specific subject, the research also suggests that development can only be achieved through the use of collaborative methods, in which the responsibility of university lecturers is indisputable (C. M. Szabó & Balázs, 2020).

In a previous chapter, when the role of the teacher in entrepreneurship education was examined, it was pointed out that entrepreneurial attitude is a basic characteristic of 21st century people, which goes beyond the economic level to the level of individual self-actualisation, which determines the indirect goals and importance of entrepreneurship education, and also

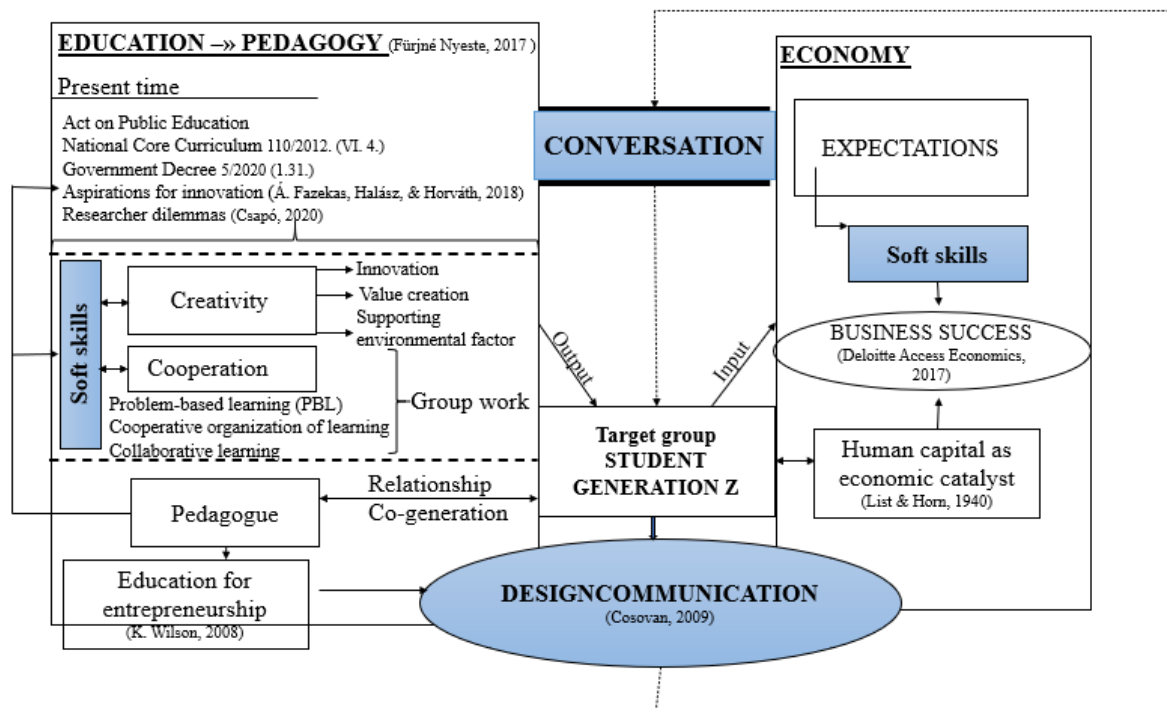
highlights the nature of soft skills. **Today's educational practice is aware of the process that, in addition to frontal education, the transfer of factual and lexical knowledge, there must also be room for a competence-based educational approach.** This does not mean that awareness has to be pushed into the background, the focus of competency-based education is on the transfer and development of predefined and fixed competencies. Entrepreneurship education is also an attempt to transfer a set of competences (Galambos, 2005). Bamford (2000) states that the set of competences considered to be entrepreneurial is now in fact a general requirement for workers, making entrepreneurship education in public education practically unavoidable (Fülöp & Pressing, 2012). Entrepreneurial competence is also important in the context of this thesis, because it is one of the soft skills discussed in detail above in the literature (Devedzic et al., 2018).

Entrepreneurial competence is a complex concept, whose components include other soft skills, which explains and justifies the conceptual differences between skills and competencies presented in the previous chapters. Entrepreneurial competence supports individuals in their everyday life, helps them to identify opportunities and to take advantage of them consciously. It integrates the knowledge that is essential for economic activity, including the ability to lead, organise, analyse, and manage. Besides, creativity, the ability to innovate, to work in a team and to communicate are also mentioned in the literature as components of entrepreneurial competence (Mihalkovné Szakács, 2014). Thus, **it can be seen that the development of entrepreneurial competences in education is of particular importance because its complexity also supports the development of other soft skills.** In current pedagogical practice, the knowledge and skills components of competence tend to play a major role (the latter more so in secondary and higher education), while the other components are neglected. Mihalkovné (2014) would solve this problem by classifying the already novel competence-focused pedagogical methodologies – which are also based on the development of personality – into two groups, according to which ones support practice orientation and which ones focus more on the development of skills (Mihalkovné Szakács, 2014). As Mihalkovné mentions it in her study, there is an overlap between the two categorizations. The self-developed education tool, which is a central element of the empirical research of this thesis can serve as a practical example, the methodological foundations of this tool are described in the next chapter.

3.5 Summary

The first part of the literature review is closed with a summary figure, which at the same time is a transition towards designcommunication, because it also places its application framework in the theoretical relationship. The figure highlights the phenomena presented in the above-mentioned two chapters, their connection points in the present context of education and pedagogy, building in the highlighted actors' viewpoints. Key dimensions such as soft skills and the linkages between education and economy are also illustrated in the theoretical synthesis, which serve as key elements in the elaboration of the research questions.

Figure 2: Map of the theoretical summary in the light of the most important linkages



Source: own elaboration, based on the literature review

4. Designcommunication as methodological initiative

In the next part of the literature review, the methodology of designcommunication (A. Cosovan, 2009) as the most important building element of my self-developed educational methodology will be presented. Designcommunication methodology is a creative, academically based methodology, which seeks the best possible match between theoretical foundations and practical experience. Designcommunication methodology, which enables and supports the

development of soft skills, provides a very flexible framework and a well-established methodological background, offers a new vision to the group of users beyond the previously familiar, known and recognised toolset. As the thesis deals with a cross-disciplinary topic, because it covers the fields of education and training, business communication and management, the methodology is a conscious intersection of the disciplines of planning and business communication.

4.1 The origin and definition of designcommunication

Designcommunication is a 15-year-old, unique, dynamic, national, trademarked know-how, the result of a doctoral thesis, which combines design and communication in a cross-disciplinary methodological way. The approach, which was published as a book titled DIS.CO (A. Cosovan, 2009), and was published in Hungarian (A. Cosovan & Horváth, 2016; A. R. Cosovan, Horváth, & Mitev Ariel, 2018; D. Horváth, Cosovan, Horváth, et al., 2018; D. D. Horváth et al., 2020) and is available also in international publications (D. Horváth, Cosovan, Csordás, Horváth, & Mitev, 2018) can be associated with Attila Cosovan designer artist and full professor. The integration of the methodology into higher education practice was initiated in 2015 at Corvinus University of Budapest, where the integration is still happening at the – indicated also in the name – Department of Media, Marketingcommunications and Designcommunications.

4.1.1 Develops and evolves

Designcommunication is a designer, creator approach. It builds on the fact that not all people are designers, but we are all capable of creative creator interaction. **Designcommunication by definition is communication integrated into development and evolution** (A. Cosovan, 2009). It is important to record the conceptual differences between development and evolution, which also highlights an important essence of methodology and definition. According to the definition of the Magyar Értelmező Kéziszótár (Hungarian Monolingual Interpretative Dictionary) (József Juhász, Szőke, O.Nagy, & Kovalovszky, 1972, p. 365), *development is the activity that mens that something is developed*. So, development specifically refers to the environment and object created by humans. Evolution is defined by the Magyar Értelmező Kéziszótár (Hungarian Monolingual Interpretative Dictionary) (József

Juhász et al., 1972, p. 366) as such a process when *someone or something evolves, changes towards a more complete, complex, higher level quality state*. In parallel with our developmental efforts towards our environment, the developer, the creative individual also develops, and through development he or she is brought to a higher quality. In design communication, the designer evolves in a way that generates development. The designer does this both for himself or herself and for the people his or her environment. Designcommunication puts people in the centre. This is a methodology that *“uses the design toolkit to integrate human needs, technology opportunities and business success criteria into strategy, organisation and product development”* (A. R. Cosovan et al., 2018, p. 233).

4.1.2 Design and communication

“Design, design art, creative design are creator behaviours. This is coupled with communication; designer, creator, creative interaction, both at the level of self-reflection (internal dialogue) and at the level of the interhuman phenomenon. So, designcommunication represents such a relational approach that acts as a BRIDGE among different disciplines and discourses, and the phenomena of society and economy. With its interdisciplinary and inter-professional approach it creates real-time links between education, research, and business” (A. Cosovan & Horváth, 2016, p. 43).

Designcommunication reinterprets and takes a reductive approach to the complex and multifaceted concepts of design and communication found in the literature. The methodology identifies the concept of design with the term “to do well”, while communication takes on the meaning of “to say well”. The definition of the term design basically initiates from the following definition by Papanek (1971): “Design can be the composition of an epic poem, the execution of a mural, the painting of a masterpiece, or the composition of a concert song. At the same time, design is also about cleaning and rearranging desk drawers, pulling out chipped teeth, baking apple pie, choosing the side of a back-end baseball game, and educating a child” (Papanek, 1971, pp. 3–4). So does designcommunication closely connected to the term of design. Summarizing the aforementioned points, mastering designcommunication perspective requires intensive and complex involvement, theoretical knowledge, experience that are of highlighted importance, which takes time.

4.1.3 Everyone is a designer

Design communication is therefore a designer's approach, which by definition means that not all people are designers, but all people are capable of creative creator interaction (A. Cosovan, 2009). The appearance of everyone is a designer principle can be associated with the name of Papanek (1971), who believes that design is of elemental importance regarding every human activity. The planning process involves planning all actions towards a desired, foreseeable goal (Papanek & Fuller, 1972). Designcommunication is connected to this, which states that *creative message or connecting are not bells and whistles, but it is created and coded into the development of the product, service, or procedure together with problem seeking, exploration, and solution*, so it is the results of conscious planning. *Design, creation and the resulting will to connect are some of the most important gifts, opportunities, duties and responsibilities of the human race, taking into account the interaction of social constant(s) and variable(s)* (A. Cosovan, 2009). The acquisition of a designer's attitude is also facilitated and endows the user with more lasting knowledge when it is achieved through instinctive creative interaction, as opposed to when it is the result of rational thinking (A. Cosovan, 2009).

4.1.4 Convergent and divergent thinking

The methodology of designcommunication helps to solve problems by encouraging the person/people solving the problem to adopt a design attitude, based on the principle of “everyone is a designer” as described above. The problems we face may have different characteristics, the solution of which requires different forms of thought, i.e., we can differentiate the path to the solution of the problem in different ways.

We can talk about a **convergent thinking** (Joy Paul Guilford, 1950) process, which is mostly based on the use of existing knowledge. Given a well-defined, well-constrained problem, there is a solution that can be solved based on the information accumulated in our memory.

Divergent thinking (Joy Paul Guilford, 1950), on the other hand, is the result of a complex task requiring a solution, where creativity is already needed, where the path to a solution is not trivial, and the divergent nature of problem solving is the novel responses to problem situations (Tóth, 2015). We can apply design communication very effectively to these kinds of problems. There are no ready-made methods, reference points. It is not known whether there is any good solution, or more than one solution is available. The result and the way to

achieve it are created and completed at the same time. Communication integrated into development and evolution is realised (A. Cosovan, 2009), thus progress, positive movement are taken for granted, which is the fruit of the result.

4.1.5 Problem is the opportunity itself

Designcommunication **can be interpreted in product design, research, education, problem-solving situations where divergent thinking and creativity are essential.** It is basically (but not exclusively) an approach built on open problem-solving situations (Dorst, 2011). It is of the highest importance that **task is not interpreted as a problem, but as an opportunity**, which also implies a positive, supportive, and solution-oriented value judgement in its educational practice, but not only a result-oriented one, as in many cases the result itself will be the way to get there.

Closed problem-solving is faced when the components of the problem are known. The desired goal is known, we know how the components that determine the goal are related, how they interact, how their interactions affect the solution, so the problem can be easily solved (Dorst, 2011). If a component is missing, it can be deduced from the other two elements, as in the case of a simple equation. Related to that, the number of unknown factors is a lot more in the case of open problem-solving.

Most of the time, we only know the value we want to achieve, the form of the solution, the synergy of the components that support it, is not a reference point (A. R. Cosovan et al., 2018; Dorst, 2011). In such cases, the solution and the way to it are present at the same time, the result and the method are realised at the same time. **The inseparable link between development and progress**, as discussed in the context of the definition, **is also confirmed in the methodology of designcommunication through the open problem posing.**

4.2 The main thesis of designcommunication

Our creator, designer networking capability – since the existence of our species – determine our integrated and differentiated i.e., complex human mindset, which, considering minimum and maximum rules, is manifested – in the phenomenology of cognition – in a holistic relationship system, thus helping to find the designer and creator optimum (A. Cosovan, 2009). This relationship system is set in the relations of (1) material-immaterial, (2) survival-maintenance-evolution, and (3) constant-variable(s) (A. R. Cosovan, 2015).

The three sets of relationships can be interpreted in any context, including education and planning tasks. It is this set of relationships that needs to be examined before starting a problem-solving exercise, during the planning phase and finally during the evaluation (D. Horváth, Cosovan, Csordás, et al., 2018) in order to minimize the possibility of errors. The evaluation criteria and the identification of their meaning are summarised in Table 1.

Table 1: Explanation of the main thesis of designcommunication

Main thesis of designcommunication	Own interpretation of definitions
survival-subsistence-evolution	Conscious in the case of the environment, exists from the past and progressive for the future.
constant-changing	The product is timeless, long/term, despite the continuously changing environment and trend.
material-immaterial	Beyond its material meaning, its latent message also represents value.

Source: own elaboration, author's interpretation, based on Designcommunication literature

Based on the table, the survival-maintenance-evolution relationship suggests that the design process should keep in mind that the resulting product should incorporate the achievements of the past, while at the same time be innovatively valuable not only in the present, but also have characteristics that are relevant in the long term, thus linking to the duality of sustainable development and economic competitiveness (Málovics & Ván, 2008). The constant-variable relationship requires a timeless value in a continuously changing environment, which can also relate effectively to new trends. In its material-immaterial relationship, the result of the design process has a symbolic meaning in addition to its tangible aspects. It is essential that the underlying message is consistent with both the product's physical characteristics and its function.

4.3 Value category and sustainable nature of designcommunication

4.3.1 Empathic and good

Designcommunication is an empathy-based approach, available to everyone, striving to realise the objective good, thus designcommunication represents the value category of “good”, in two senses (A. R. Cosovan et al., 2018). On the one hand suggests that good means something adapted to the needs of product, space, organisation and community. It means everything that is appropriate, useful, that is good. At the same time, it transmits moral aspects and the principle of social responsibility via the science of a design (A. Cosovan, 2009). Therefore, this means that it integrates an approach into the design process, whereby it will be our interest to take into account other people’s interests. If company leaders also take this approach to a problem, integrating design perspective, the established solutions represent value for the society besides their functionality, whether it is the creation of products and services or the reorganisation of workflows (Boland & Collopy, 2004).

4.3.2 Sustainable

The sustainable nature of designcommunication is given emphasis in its educational application too. The educational practice of sustainable development is intercultural co-operation, where the aim is similar: to draw the attention of children to the fact that for the global realisation of sustainability (in which they also participate) it is our interest to get to know and support the situation of less developed countries (Huggins, Siraj, Dékány, Feksz, & Szabad, 2018). Designcommunication also interprets the rule of good minimum this way. The connection of the methodology to sustainable development, is involved in the triple relationship of the basic statements of designcommunication presented in the previous chapter. Literature underlines that besides knowledge, recognition and an active, problem-solving behaviour are also necessary during a creative, sustainable education capable of solving problems (Lesku, 2010). Designcommunication includes exactly this innovative approach in its methodology.

4.3.3 Besides knowledge, it encourages recognition

According to designcommunication the acquisition of knowledge and the solution of a problem are not exclusively about getting to know something, they are rather about recognising it, which is the realisation of something not necessarily entailing linear cognition. We cannot only recognise which we already got to know earlier. Recognition differs from getting to know something, which strives to acquire knowledge (M. Demeter, 2015). The relations system between knowledge and recognition serving as basis for designcommunication can be observed in Ádám Angyal's study: *“Getting to know something is the acquisition of knowledge, while recognition is the creation of knowledge. While the point of getting to know something is experience, the most important method of recognition is thinking. Both experience and thinking are fundamental methods of the formation of knowledge but due to their different nature, their “products” can also be differentiated. The product of experience is knowledge while the product of thinking is recognition. At the same time, it is known that experience and thinking cannot be contrasted, because they mutually build on each other. Recognition is the consequence of thinking and experimentation beyond knowledge, a roam in a world which we do not know, or which cannot be known yet, in the unknown”* (Angyal, 2007, pp. 7–8). The question building on the open-ended problem-solving applied by the methodology of designcommunication is also based on recognition.

Designcommunication, focusing on recognition highlights also that **it does not make an attempt to pass on a ready-made knowledge package, it rather encourages users to create a knowledge package themselves via the recognitions experienced during the process.** Referring back to the aforementioned line of thought, it does not limit creativity, but instead, it builds on non-systematic, trans-range creativity, which can serve as the educational catalyst of sustainable development by its proper pedagogical application.

4.4 The educational aspect of designcommunication

The most important yet-to-be-answered question in present-day educational practice is how expectations changed in every respect and from the point of view of all participants can be met and how we can adapt to personality changes caused by the digital world in a way that the new methodology can have a permanent value (D. Horváth, Cosovan, Horváth, et al., 2018). During my examination and empirical research, the educational aspect of designcommunication came to the fore as a result of the above-mentioned thought, thus I am going to present the

educational dimension of the methodology further below. The application of the designcommunication methodology in education is unique, because as it was already mentioned in the introduction, it connects the phenomena of the different fields of science, society and economy. It supports the establishment of real-time relationship among education, research and enterprises (A. Cosovan & Horváth, 2016, p. 36). The main aim of this thesis, namely to start a dialogue between education and enterprises and to harmonise aims and expectations is greatly supported by a methodological starting point specifically aimed at the achievement of this goal.

The application of designcommunication **as an active, creative educational-methodological tool**, makes participants aware of their ability to create values. **It provides guidelines, and assistance for orientation, however it does not give any complete solution modules.** Therefore, from a designcommunication perspective, the designer does not have any pre-defined series of steps, but instead problem-solving and the road towards it are realised concurrently (A. Cosovan, 2009).

The initial chaos is mitigated in parallel with the formation of the solution and the result, the sense of achievement may lead to **flow experience** (Csíkszentmihályi, 2001), which I also experienced in the case of the examined classes during my empirical research, Designcommunication builds on partnership and the principle of everyone's equality (Benkler, 2006), focuses on real problems, primarily seeks answers to open-ended questions, builds on group work, **which contribute to the creation of a creative environment at school** too (Péter-Szarka, 2014).

4.5 Designcommunication in relation to design thinking

Designcommunication serves as the contemporary alternative of design thinking, widely used in today's business and managerial practice, but it can also be considered to be its challenger (A. R. Cosovan et al., 2018), while their content and mission show similarities. The understanding, significance and role of designcommunication which can be exploited in education can be presented easier in relation to design thinking, contributing to the thorough understanding of the methodology.

4.5.1 Design thinking

The concept of design thinking has taken shape over time, its currently used definition is attributable to innovation advisory company and its leaders. The corporate strategy of IDEO reflects the development of design thinking itself: originally it was focusing on product development, later the focus of design was complemented by the design of services, strategies and also educational and other social systems (Liedtka, 2015). Design thinking connects design principles methods, approaches and tool in order to resolve a problem (Brown, 2009).

According to another definition, emphasis is on anthropocentricity and innovation processes, where the conceptual framework of design thinking consists of the simultaneous formation of observation, co-operation, rapid learning, the visualisation of ideas, the immediate creation of prototypes and a parallel business analysis (Lockwood, 2010).

In summary, design thinking is a systematic creativity-based practical method which is a series of pre-defined steps. Its process is defined by a series of routine steps in a specific order. The solution of a problem is realised in three consecutive stages, where feedbacks may take place between the stages. Their order is as follows: (1) identification and understanding of the question in focus (inspiration), (2) pooling of plans and methods of resolution adapted to the given situation (ideation), (3) level of implementation (Brown, 2008).

Design thinking is applied successfully in a number of situations, its consecutive steps can be further broken down. In their article, Fehér and Varga (2017) compared numerous practices and applications, where they used a combination of any of the following steps: (1.) definition; (2.) research; (3.) interpretation; (4.) collection of ideas; (5.) production of prototypes; (6.) search for different variants; (7.) contextualisation; (8.) exploration of correction possibilities. The series of design steps consisting of pre-defined, consecutive steps serves as a supportive guideline in the search for solutions. Design thinking can be a particularly efficient approach in the already presented closed problem-solving situations. However, an opportunity to rely on a procedure built on a given order may limit the outcome of the design process, thus what provides support may hinder innovation at the same time. Nevertheless, design thinking is only one viewpoint of the design approach. Ability to identify key points, recognition and artistic interpretation as dimensions already appeared in the literature prior to design thinking (Buchanan, 1992 in A. R. Cosovan et al., 2018).

4.5.2 Systematic overview of differences

The overview and comparison of the two methodologies are carried out by Cosovan et al.'s (2018) analysis, especially focusing on the table in the article (Table 3 Comparison of design thinking and DIS.CO) (A. R. Cosovan et al., 2018). Design thinking basically supports systematic creativity, which is a much more routine method, but also easier to control and organise during the application of creativity. This is confirmed by the fact that when participants feel in a design thinking-based situation that they have stepped out of their comfort zone, then they practically step into another zone, normally controlled by the facilitator, where they get to a predictable environment from the facilitator's point of view, thus the learned methods and techniques can continue to be applied, and participants can keep playing their familiar, well-known roles.

On the other hand, in situations building on designcommunication, both participants and facilitators partly instructing the process can get out of their comfort zone, where new dimensions open before the users as a result of a considerable uncertainty, like the transdisciplinary creativity influencing and moving ranges (Csíkszentmihályi, 2018), which was previously referred to as active creativity too. Organic ritual is emphasized instead of routine. Design thinking, by its knowledge acquisition nature, builds on knowledge, while designcommunication is based on recognition, consequently, while in the former case the nature of development is linear, in the case of designcommunication the exponential nature of development comes to the fore (A. R. Cosovan et al., 2018).

4.5.3 Connection points

Besides differences, a number of similarities can be discovered. Both methodologies are anthropocentric, the definition and solution of the problem are carried out with the involvement of the stakeholders the roles of the designer and the user are blurred together, and largely overlapped. Solution processes include – even if in different proportions - analytical and intuitive thinking, subjective observations and feelings as well. While in the case of design thinking these elements appear in equivalent proportions (Martin & Martin, 2009), in the case of designcommunication the balance is tilting in favour of intuitive thinking. In his study, Martin (2009) points out that the most successful enterprises of the forthcoming years will balance analytical skills and intuitive originality in a dynamic interaction, which he identifies

as the method of design thinking. However, the appreciation of soft skills experienced in the recent years already shades these proportions.

Who is actually the designer? The starting point of the literature was the viewpoint – as realised by Buchanan (Buchanan, 1992) – it is actually the experts who take part in the design process, and who are capable of creating socially acceptable results. The active role of the audience appears later in a way that they will be those who draw existing and relevant conclusions. Later, new organisations and the related forms of organisations, for example the launch of Wikipedia in 2001 (Rosenzweig, 2006) evoked further thoughts on who the designer really is. Due to the uncertainty of the environment users require a kind of generational commitment, in which the difference between designers and users is blurred, resulting in a community of co-designers (Liedtka, 2015). This orientation already much more integrates social focus, emphasis is put on co-operation which was missing from former theories. Product design is not the exclusive privilege of the designer anymore. Both design thinking and designcommunication – although in different degrees – allow participants of the given problem-solving process to demonstrate their design attitudes and to act as designers instead of ex-post opinion leaders during the solution of a problem.

Empathy, as a key phenomenon becomes an essential motif in the comparison, especially with regard to similarities. Empathy does not appear in former management theories at all, so it acts as a pioneer in connection with design thinking (Patnaik, 2009 in Liedtka, 2015). Empathy goes beyond the mere recognition of the subjectivity of design; practically, all current descriptions of the process emphasize design thinking as an anthropocentric and user-based basic value. This is in line with the definition of designcommunication, which focuses on the empathy-based nature of the approach (A. Cosovan, 2009). Therefore, we can see that design thinking basically determined the formation of designcommunication, its most important building blocks were included after a rethink and a revaluation of the focal points. The methodology of design thinking is the closest linking factor, however, for the comprehensive knowledge of designcommunication it is worth reviewing where the applied methodology is located within the wider scientific field.

4.6 Designcommunication in the wider scientific field

4.6.1 Post-normal science approach

Post-normal science approach examines the changed relationship between science and society and how the most important participants of this relationship – researchers and citizens – have changed their attitude towards science. Science looks for answers to complex, overall, in many cases unexplored problems difficult to resolve and a path towards these answers. Because of the complexity of problems, science is only capable of finding the solution in connection with a number of questions with the help of transdisciplinarity (Köves, Gáspár, & Matolay, 2020).

Transdisciplinary research can be defined with the phenomenon of the interoperability and integration between the disciplines of science (Dúll, 2017). Mutual learning is necessary in the process, in many cases, transdisciplinary is forced to harmonize different values, areas and levels of knowledge in order to solve a problem. Besides the passage between areas of knowledge, it is also important that transdisciplinarity creates new knowledge, which is not only limited to the participating discipline of science, but it can be interpreted in a totally new theoretical framework (Dúll, Somogyi, Hülber, Brózik, & Szabó, 2018). This is consistent with the characteristics of wikinomics co-operation, one of the typical forms of co-operation of the designcommunication design process primarily applied in educational practice and presented in the next chapter. When a whole class or a larger group works together on the solution of a project or a problem, the harmonisation of opinions, observations, comments of individuals with various personality traits, attitudes, interests and levels of knowledge form part of the path to the solution in order to get results. Levels of knowledge are added up, and the new knowledge is obviously greater and more complex than the simple sum of the knowledge of each individual.

According to postnormal science approach, besides the opinion of researchers it is also important to involve the people concerned and the opinion of the community extended in connection with the research topic. A solution for the resolution of the more and more interconnected social and economic problems is the linkage between the disciplines of science, this is what literature considers to be the progressive science approach, which principle is also interpreted by designcommunication as its basic statement. Therefore, the postnormal science approach is as follows: “it examines complex problems in complex systems by nature” (Réti & Varga, 2008, p. 7 in Köves et al., 2020). Postnormal science approach promotes education for

sustainability, which is also in line with the value categories of designcommunication. Furthermore, postmodern science approach considers the broader knowledge base and set of opinions of experts not doing research activities to be important (Köves et al., 2020), which element is an essential component of our own empirical research.

4.6.2 Art-based research and education

Postnormal science approach also allows art and science to connect to each other (Köves et al., 2020). Designcommunication is closely related to the trends of art-based research, especially those applied in education as well (Judit Juhász, 2019). Art-based research is an emerging qualitative research approach; it refers to the use of any art form (or their combination) at any point in the research process (Cole & Knowles, 2001). Art-based research can also be defined as the systematic use of the artistic process, the actual realisation of artistic expressions in all the different forms of art, as a primary method to understand and examine experiences of researchers, and participants integrated into the study and involved in the research by these researchers (McNiff, 2008).

From the point of view of scientific understanding, opportunities in art can be extremely important, because **they promote the widening of dimensions of knowledge and understanding and make it possible for other forms of knowledge production to come to the fore** too (Boydell, Gladstone, Volpe, Allemang, & Stasiulis, 2012 in J. Juhász, 2019). Art-based research cannot be regarded as a specific method, it is more a set of research approaches. In most cases, art-based research does not only mean that art is the research subject. Art is included in several phases of these kinds of research procedures, like analysis, interpretation or knowledge production (Judit Juhász, 2019).

Education is regarded as one of the most common areas of application of art-based research. Art-based research is not just about research subjects participating in a creative activity. **Co-operation and communication can become more efficient via a joint creative experience.** Creative process shapes thinking, facilitates interaction between individuals, compulsivity ceases to exist, and control is minimised. The environment established during artistic research serves as the engine of creative environment thereby enabling soaring creativity (McNiff, 2008).

During my empirical research based on my designcommunication workshop the above-mentioned establishments are assumed. One of the aims of the thesis is to provide evidence for

them during the examination, by answering the research questions, thus if they are proven, the applied methodology can be included in art-based research methods.

Colleges and universities offer more and more courses and programmes connecting art to other disciplines of science, and in parallel with this artists seek how to harness their research skills, and this way scientific environment can have a better reaction to new examination methods (McNiff, 2008). Some examples for universities offering such mixed training programmes include but not limited to: SAIC⁵, Stanford⁶, University Arts London⁷, University of Toronto⁸, Case Western Reserve University⁹. Trends towards acceptance are greatly thanks to the work of Rudolf Arnheim and Susanne Langer, who validated the cognitive aspects of arts for the scientific community in the 1950s. With this they justified the existence of art-based research approach among serious scientific examinations (McNiff, 2008).

Art pedagogy is regarded as an art-based method of education, whose conceptual meaning can be divided into two parts. On the one hand it means the teaching of art subjects the education for art (Trencsényi, 2000), where the aim is to get to know art, on the other hand we associate its meaning with methodological tools applying art to realise various pedagogical practices. Here we are talking about education with art (Trencsényi, 2000), where art serves as a tool of the educational process. Furthermore, the characteristics of art pedagogy include facts that it applies its pedagogical toolbox, its aims are in accordance with the aims set by the educational environment and it can be realised both within and outside the pedagogical framework (Kiss, 2017).

When the concept of art is interpreted in a pedagogical and therapeutic context, the point of the concept is function, language and expression. In these cases, aesthetics itself is only secondary. In addition, the definition of art therapy can also be characterised as multi-pillar, its two inseparable aspects, the art as sublimation and the art as communication are the most widely used approaches of the presentation of the therapeutic method of art in the literature (Kiss, 2010). When the sublimation nature of art has priority, the creative process itself is in focus. **The experience of creation**, and the release of the parallel anxiety, stress and tension take

⁵ <https://www.saic.edu/academics/areas-of-study/art-science>

⁶ <https://arts.stanford.edu/for-faculty/art-science/>

⁷ <https://www.arts.ac.uk/subjects/fine-art/postgraduate/ma-art-and-science-csm>

⁸ <https://www.artsci.utoronto.ca/future/ready-apply/programs-study>

⁹ <https://weatherhead.case.edu/degrees/doctorate/phd-management/design-and-innovation/>

place. When the communication nature of art comes to the fore, the examination focuses on the result of creation and its messages instead of the process of creation. These include among other things the projective techniques as methods applied in education too (Kiss, 2010).

The approach of **education with art** has most parallels with the methodology of designcommunication. Education with art can also be interpreted as the common section of education for art and art therapy. The literature considers it to be a characteristic of the method of education with art that art itself is a tool, and cannot be defined as a goal. Just like designcommunication, it promotes problem-solving and facilitates socialisation. It interprets personal and artistic contexts together, and the integration of social engagement forms an integral part of the process of education with art (Kiss, 2017). This feature, social engagement (Bodóczy, 2012 in Kiss, 2017), education for global citizenship also appears in the methodology of designcommunication examined and applied by myself. Areas of application of education with art include skills and personal development and education for efficient communication too (Illés, 2009), which among other things means the realisation of the development of soft skills, thus this is also a meaningful connection point between education with art and designcommunication.

4.7 Wikinomics co-operation, as an important catalyst of designcommunication

We cannot ignore the trend influencing the emerging business world and scientific community that **individuals share their knowledge, computing power, bandwidth and other resources with each other in order to produce a wide range of free and open source products and services, which can be used or modified by anybody**. We only need a computer, a network connection and the spark of initiation and creativity to connect to economy. Mass co-operation has opened the floodgates and converted innovation flow into a flood, in which anybody having ideas and a computer is free to swim and forward these ideas (Fuchs, 2008).

“According to modern understanding **a student is a client and also a colleague** who produces the “product” of school: his own development co-operating with school employees” (Buda & Péter-Szarka, 2015, p. 11). I rely on this thesis statement when I interpret the possibility of thinking and working together as the starting point of the workshop, a central element of my research building on the methodology of designcommunication developed by myself. The fact that I build on a good foundation is confirmed by the phenomenon that an

increasing proportion of the most influential companies in the world regard mass co-operation as a successful weapon to ensure innovative power (Rinaldi, 2009).

I have built the designcommunication design approach, and at the same time wikinomics co-operation using its set of tools into the product development process of the creative educational-methodological workshop, where it practically works as the catalyst of designcommunication. That is why the presentation of its most important components is a highlighted chapter of the thesis.

According to its definition wikinomics means mass co-operation (Tapscott, Williams, & Garamvölgyi, 2007). It is built on the principle that it should impart the requested necessary knowledge to everyone, however the source of this knowledge is the set of the other participants (Fuchs, 2008). Its application affects more and more areas of science. When we talk about the relationship between science and the “wiki” world, we talk about forms of co-operations which have been going on for about a decade and in which members of the general public donate their intellectual resources for scientific progress (Rinaldi, 2009). It is **often used in educational and offline environments**. It was also applied in former Hungarian researches, however, the user environment there consisted of university students (D. Horváth, Cosovan, Horváth, et al., 2018).

In the present empirical research, the integration of wikinomics co-operation into the workshop tested boundaries and specifically focused on moving students out of their comfort zone. Mass co-operation in educational practice means that subjects participating in the given project are open towards each other, they are happy to share knowledge and they work together in order to jointly achieve a goal, furthermore, to improve the life of a given community by achieving this goal.

Wikinomics can also be defined as the co-operation of equal people (Benkler, 2006), which is the essence of designcommunication-built workshops. This statement was directly put into practice in the research: students, teachers and the trainer holding the workshop took part in it as equals, which presupposes an open, friendly and inclusive environment. This atmosphere provides students with safety, a point of stability in uncertain situations. Corporate processes also have parallels to this: efficient leaders establish positive relationships with all stakeholders, thereby promoting horizontal trust, encouraging professional respect which has a positive effect on co-operation. This also happens when the hierarchical relationship between teachers and students temporarily breaks down, and gets a new interpretation during co-operation (Raelin, 2016).

Wikinomics co-operation contributes in general to the above-mentioned processes and more particularly to my own designcommunication course via the following four pillars:

1. Openness: Acceptance of the new situation. A class of students work together and create a new project, what is more, in a heterogeneous composition of participants.
2. Co-operation of equal people: There is no hierarchy, so it is worth making participants aware that their thoughts are equally valuable. It does not matter whose thought it is, what matters is what added value it has in open-ended problem-solving situations (Dorst, 2011).
3. Share: All ideas and suggestions are available for everybody during the work. The created, shaped knowledge is for everyone, it is shared on both online and offline devices.
4. Global activity: The good in activities and solutions and its communication and extension to people not participating in the project too.

5. Methodological approach of the research, research plan

5.1 Exploration of research aims and questions

After the literature review, the focus will be put on defining the research objectives and research questions. The research aims include the development of an educational product that can be easily integrated into a closed, mainstream school framework, allowing students to create and design in groups, collaboratively, and from a creative, designer perspective. A training module that aims to develop soft skills, with a particular focus on creativity, collaboration, and entrepreneurship. Some phases of research, such as data collection and the product development process, are simultaneously present, so that design communication provides the methodological basis not only for the educational module but also for the product development process. Design, many aspects of planning, go hand in hand with search and research, which reinforces the harmony found in the simultaneous occurrence of design process and research (Friedman, 2003). The development of a creative educational methodological tool titled *“I wish to make my home a better place!”* based on the methodological foundations of design communication was implemented and developed during the research. This research is focused on the product developed. The central (main) research question was formulated as follows:

How the use of designcommunication (designer networking) as a creative educational methodology through a workshop shapes and forms the participating community (students, teachers)? How does open-ended problem-solving contribute to communication within the group under study? Its contribution and influence are assumed in the following dimensions: (I) community-building, (II) development of soft skills, (III) development of a designer, creator identity, (IV) rise of entrepreneurial competences. I seek to answer the questions raised by the fixed dimensions through the following research sub-questions.

(I): How does the workshop help community-building?

(II): In what way, in what directions does the workshop shape the students' soft skills?

(III): How the workshop shapes the students' designer identity?

(IV): How does the workshop and the community shape the intensity of the entrepreneurial attitude and spirit?

The most important objective of research is to contribute to the scientific literature and to benefit society. Beyond this, a deeper dialogue is intended to start with the corporate sector to align the skills and competences taught and expected. Furthermore, the aim is to explore and describe what and how the open-ended problem-solving situation affects this age group. I attach particular importance to ensuring that my academic work reaches the community most interested in research at a practical level, where I can research real-world results and create immediate added value for the research community. The social purpose of my research is to support and develop the individual and the organisation under study at the same time as developing the product, to provide children with a unique experience that can be a key element in shaping their thinking, so the workshop is designed and adapted to the organisation both in the test phase and in the later research stages. The longer-term objective of the research is to integrate the methodology into the curriculum, design, develop and deliver a marketing communication strategy for the workshop to professional and civil communities interested in and/or open to the development of education.

5.2 Qualitative methodological approach

In line with the above research questions and objectives, this doctoral dissertation is therefore based on a purely qualitative research methodology. At the heart of this research is the relationship between soft skills and education, so it was felt important to be able to draw on

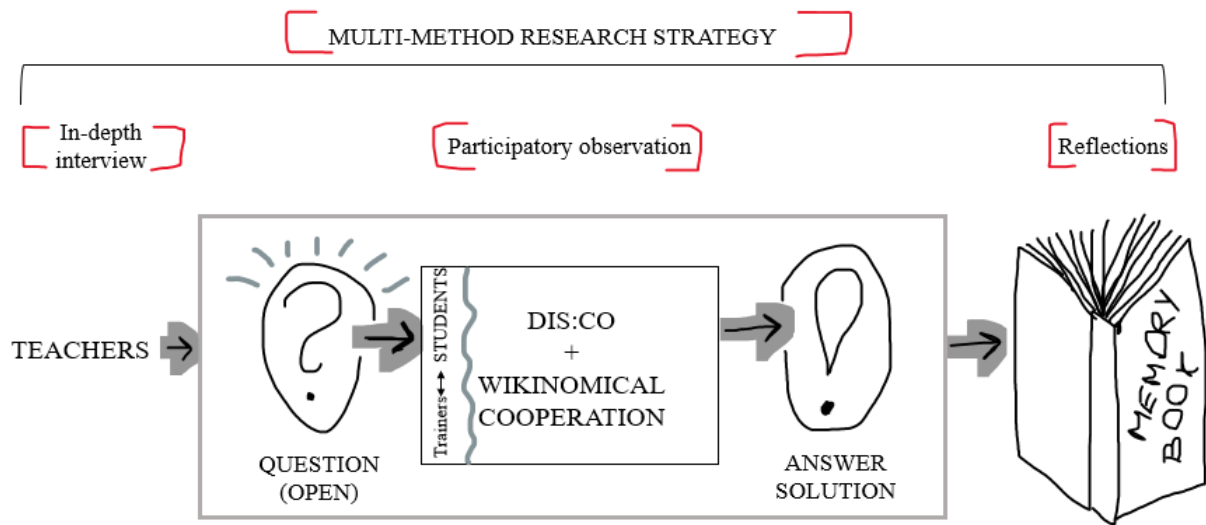
a methodology that could be adapted to the choice of topic in all of its elements. In the case of the qualitative methodological approach, there is no well-defined path, redefinition is a specificity of the methodology, a developmental step. The researcher is the route planner and is also responsible for marking the landmarks, which also requires a high degree of creativity. The path, the terrain, the boundaries, and the point of view change many times, in many ways, until the system that the researcher has created becomes clear and visible. It takes patience, dedication and perseverance (D. Horváth & Mitev, 2015).

The definition of qualitative methodology is dynamically changing and varies from discipline to discipline, so I have encountered difficulties in defining it precisely. The definition that is most close to this research can be associated with Van Maanen (1988), who argues that qualitative research is part of a debate, not a fixed truth (Van Maanen, 2011). It is an attempt to capture the deep meaning that frames and sums up everything I write about what we actually do. Unfortunately, qualitative research, despite its growing role and increasing acceptance, is not fully accepted in the scientific community. In most cases, the results are not quantifiable, the integrity of the research is not as visible in the way and in the form of a quantitative methodology, and the lack of tangibility can often make the results of qualitative research less scientific. **The lack of tangibility reduces the above question to a clearly identifiable service marketing problem, the specific, specialised position of which is not disputed in marketing science, on the contrary: it is a fully accepted phenomenon** (D. Horváth & Mitev, 2015).

5.3 Research strategy and sampling techniques

Among the qualitative methodological approaches and strategic directions, the strategy of this research is multimethods (Morse, 2003), within the framework of which three different qualitative data collection methods have been used, as illustrated in the following figure and detailed in later chapters.

Figure 3: Research strategy and data collection methods



Source: own elaboration, based on fixed research plan

In addition to the specifics of the topic, the implementation of the pilot research presented in the final section of the thesis helped in the precise design of the research process, this is how the research plan presented here was put together.

5.3.1 Multimethod qualitative research strategy

The methodological framework of this research, the research strategy, is defined by the multimethods, or multi-method research strategy.

Different use and definitions of terms in the literature are typical of hybrid research approaches. A unique feature of hybrid research is that it has several legs to stand on, thus creating opportunities to access hard-to-reach groups and data. The flexibility to combine research methods, which may differ in part or in whole, pushes the boundaries of cognition (Neulinger, 2016). A hybrid research strategy is basically understood as the combined use of different research methodologies. It can be achieved by a combination of quantitative or qualitative approaches/data collection alone, as well as by a conscious and well-organised combination of the two. A sequential solution is when these data collections follow each other, while a parallel solution is when the data collection process is carried out simultaneously (Neulinger, 2016). In the marketing field, the two main directions of hybrid methods are most often labelled as multi-method and mixed-method research, which builds on different foundations, so it is important to clarify the key differences between the two (Harrison & Reilly,

2011). At the same time the research strategy of this study is named, in order to clarify and make transparent the differences in definitions found in the literature referring to the definition of Morse (2003). During the research, his definition is followed (Morse, 2003).

(1): Mixed-method approach: In essence, it involves mixing two types of data collection methods. It is the conscious and organised combination of different types of data that leads to the realisation of the research results.

(2) Multi-method approach: It uses a variety of data collection methods, but within either a purely qualitative or a purely quantitative methodological approach, without mixing the two.

The two approaches definitely differ from each other. Several authors, such as Fielding (2012), do not make a clear distinction between the two strategic orientations and thus interpret the mixed-method approach more broadly (Fielding, 2012). There is therefore no clear explanation as to why a research combining purely qualitative methodological approaches could not fall within the scope of a mixed-methods approach (Fielding, 2012). This is supported by the fact that the mixed methodology can be seen as a combination of a core and a complementary methodology, where the core results help to interpret the complementary results (Morse, 2010). The QUAL-QUAL mixed methodology is thus characterised by a central data collection method and complementary elements that answer smaller questions and support the main direction, which would not be sufficient on their own (Morse, 2010). According to this definition, if I were to capture the strategy of my research as a mixed methodological strategy, the main component would be participant observation, with reflections and in-depth interviews as complementary components.

There are also instances where the approach defined as a multimethod research strategy includes both qualitative and quantitative data collection methods (Budai, 2004). This can not only be found as an applied method, but also in methodological literature (Schutz, Chambless, & DeCuir, 2004). Neulinger (2016) also gives an example of a hybrid solution where a multi-method and a mixed-method approach are used simultaneously.

Among the approaches interpreted at different levels and within different frameworks, the multi-method approach is selected, as previously recorded and clearly defined, as a starting point, and thus this research also distinguishes between hybrid approaches, taking the approach of Morse (2003) as an initiative (Morse, 2003). Thus, purely qualitative data collection methods have a place in the multi-method research strategy. These data collection methods follow each other sequentially. First the in-depth interview, then the participant observation and finally the reflections will be carried out. In the first case, the subjects, the location and the time are

different; in the case of participatory observation and reflections, information is recorded at the same time, in the same place, from the same subjects, using a different type of data collection method. In multi-method research, I use a hybrid measurement in which the same respondent (student) is exposed to multiple methods of data collection (participatory observation, reflection), but there is also a respondent (teacher) who is asked in only one way (in-depth interview).

5.3.2 Sampling techniques

Repetition of the research is not conducted till theoretical saturation (Mitev, 2012), the workshop was delivered to every Hungarian county, and even to Budapest. In this way, the aim is the added value at the local level, which the creative educational methodological tool I developed would provide to the participants, while continuously developing and improving the product through the incorporation of the added value of the participants. So, the workshop was accomplished in 19 counties, in Budapest, and in a transborder Hungarian settlement in addition to the pilot occasions, altogether 24 times.

In selecting the schools, I aimed to carry out the research in public institutions that are regular mainstream schools that use the national core curriculum as a guideline. In any case, I considered it important to avoid, in the first phase of the research, examining private institutions that follow a specific curriculum and are explicit about their ambitions to develop creativity. The ideal sample for this research is an eight-grade, state-supported district school, where group work and innovative, non-traditional active learning methods are rarely or not used, and their use is not a curricular obligation but depends on the attitude of teachers. I assumed that in the early stages of the research I could really test the effectiveness of the method in schools where it was unfamiliar to the students, where group work was not part of their daily routine, where they had not previously been involved in a significant number of similar learning methods that would affect the outcome, and so I could minimise confounding factors.

Summarizing the selection aspects, the following were considered:

- (1): 8-grade elementary school
- (2): publicly founded institution
- (3): normal curriculum, following the National Core Curriculum,
- (4): Hungarian-language primary school that cover every county and Budapest

(5): the school's and teachers' openness, flexibility and increased interest in science are an added value, but not a primary selection criterion

The sampling was carried out considering the above selection criteria for schools, applying the qualitative sampling techniques presented by Horváth–Mitev (2015) called snowball or chain sampling (D. Horváth & Mitev, 2015). The starting point, also the place of the pilot study, was the Kazinczy Ferenc Member Institution of Bárdos Lajos Primary School of Tapolca, which helped the first steps with its partner institutions and network of relationships.

Sampling was interpreted at two levels. First, in each case the school and the class within the school on which the research is focused were selected. Within the school, the age group studied is the sixth-grade pupils. In this case sampling technique is theory-based, and this age group was selected based on results of an earlier research phase. 4th, 6th and 8th grade students were studied, focusing on their openness to the methodology of design communication. The results revealed that the 6th grade, with its strong plans and free, bold ideas, was the most suitable target group for this research, which is considered to be the most empowering for Generation Z (D. D. Horváth et al., 2020). In schools where there was only one class per year, sampling was determined. Where there are several sixth forms within a year group in the school of choice, the choice was left to the head teacher and the teachers teaching in the school. In all cases, the reasons for the choice are recorded in writing, but it should be considered that in this case, it is possible that research bias may also be taken into account. The teacher/director's bias, academic ambition may influence the choice and thus the outcome of the research. There may be a bias towards choosing the more talented class with better abilities, as they want to present a better image of the school to the researcher, the university behind the researcher. The picture is clouded by the objective of the research, which is that teachers will apply the methodology, so that, indirectly, students of lower ability who are not the focus of the research may also can participate in the workshop.

5.4 Qualitative data collection methods

As part of a multi-method qualitative research strategy, several qualitative data collection methods were applied, which are, in order of implementation, as follows:

(1) in-depth interview with the homeroom teacher of the analysed class, because he or she is the officially appointed leader of the group (Mészáros, 1998)

(2) participatory observation, through the realization of the designcommunication workshop,

(3) reflections and analyses written by student participants. Related to in-depth interviews and reflections projective techniques were also applied.

Before describing each data collection method in detail, the data collection methods are summarised in a table, which describes the origin of the data, the type of data, the criteria used for collection, the data analysis methods implemented in the research and the possible limitations of the research.

Table 2: Data collection methods and the journey of data registered by these methods

Research strategy	Sample size	Data collection methods, Data recording	Origin of the data, where does the data come from?	Cornerstones that determine the research process, given instructions	Data	Data collection method	Limitation, Difficulty
Multi-method research strategy	24 (19 counties + Budapest + Hungarian crossborder settlements)	1. Preliminary interview with the pedagogue closest to the class IN-DEPTH INTERVIEW	-Sound recording -Note of the interviewer -Visualisation of projective technique tasks	Insights of the pedagogue, exploration of preliminary knowledge to precisely record effects, in-depth interview guide, prepared interviewer	-narration -drawing, figure, other visualisation	Content and figure analysis	-Pedagogue's attitude - Presumed and real relation between pedagogue and students
	24 (19 counties + Budapest + Hungarian crossborder settlements)	2. Workshop with the students forming part of the class community PARTICIPATORY OBSERVATION	-Output created by the participants during the workshop -Note of the observer (trainer) during participatory observation	Opportunity for reference to change, result, starting point, adaptation of students to the workshop	-textual description of output -journal entry -drawing	Content analysis	- Outcome of the workshop -Activity and cooperation of participants - Involvement of underaged in the research process
	24 (19 counties + Budapest + Hungarian crossborder settlements) * 22 students (average class size)	3. After the workshop, students write reflections about their experience during the workshop REFLECTION	- A diákok által írt fogalmazások -projektív technikát alkalmazó feladatok vizualizációja	Students should write their thoughts on a blank, white sheet, in the guestbook, formulate their experiences based on given conditions, what changed in their opinions	-reflection text - drawing	Content and figure analysis	- Students' attitude to the task - Question of honesty - Involvement of underaged in the research process - Literacy and expressiveness, vocabulary

Source: own elaboration, considering the phases of the research plan

5.4.1 In-depth interview: defining the framework, identifying the problems

Under the term qualitative interview, the in-depth, semi-structured, unstructured interview format has been mostly defined (J. Mason & Tóth, 2005). The first data collection step of empirical research is an in-depth interview with the teacher who is the most familiar with the class – that is the focus of the study –, who is also likely to be the head of the class of the students, and who provides useful information about the research subjects, primarily as a community. Preparedness on the part of the interviewer is of paramount importance, as it is this interview that will help to successfully shape the next steps of the empirical research. For this

reason, special attention should be paid to the formulation of the interview guide (Pervez & Kjell, 2011).

The interview questions are based on the dimensions identified and explored in the description of the main research question and related sub-questions, with the aim of understanding the challenges faced by the classroom community, the relationship of students to each other and to teachers. During the interview, it was aimed to get information about the teacher's perception of the creativity of the class, the use of group work and other alternative and active learning methods, the teacher's openness and experience.

The data collection started with in-depth interviews at the respective study locations, so that by the end of the research series, 24 in-depth interviews were conducted with teachers and data derived from them were available. The importance of timing is not negligible, it is very important to anticipate participant observation in order to ensure adequate preparation and to refine the workshop process if necessary, based on the interview results.

During the interview, projective techniques were also added into the series of questions. Teachers were asked to personify creativity: what kind of person/animal is creativity itself, and a drawing visualisation of the phenomenon in schools was also an exercise. The projective techniques and the significance of their use will be discussed in more detail in a later chapter.

5.4.2 Highlighted data collection method of the research – Participatory observation

The central element of the research is represented by the created educational methodological tool “*I wish to make my home a better place!*” workshop also registered in the introduction. It is an educational methodological product applying the theory of designcommunication. It is specifically designed for primary school pupils. In creating it, great importance was placed on its applicability in a closed system of schools with rules and obligations. A detailed description of the self-developed educational methodology tool (workshop) as a product is given in the chapter on primary research (Chapter 8), and the workshop script is available for the reader in the Appendix. The scheduled and realised timing of the research is the first half of the 2019/2020 school year, which can be considered very fortunate, and in hindsight proved to be an excellent decision, as the pandemic that developed during the course of the research would have prevented the full data collection later, which would have significantly limited the results of the research. The active preparation of the research and the contact with the participating institutions started already in spring 2019. The

workshop research and data collection were carried out through participatory observation, where the researcher and the workshop trainer are the same person.

Participatory observation is one of the longest-established data collection methods in qualitative research, which can also serve as a research strategy in a broader sense, but in my case it is a data collection method (Schleicher, 2007). Its application is really informative when we are interested in the behaviour of people in a given natural environment, in their own milieu. The researcher is in the crossfire of interactions between them. In participatory observation, the observer enters into the framework of the world under study, his participation in the framework under study, the change of perspective (looking from the point of view of the observed) allows a reduction of subjectivity (Kapitány & Kapitány, 2002). The essence of participatory observation is summarised in the work of Malinowski (1972) and is derived from anthropological research: the researcher or observer must take notes on everything, even on moments that do not seem important at the time, and the precise observation of behaviour is not negligible. The community must seek to be inclusive, with guided questions to ensure that the researched topic is brought to the centre, but without influencing (Kapitány & Kapitány, 2002). Participatory observation, in the classic case of foreign cultures observed by anthropologists, requires very long periods of time in the field, even years. Since it started to be used in organizational research, this time has been shortened. This includes the observation of the school class I used, with the addition of the activity of observing the community during the implementation of the workshop, where the researcher and the workshop leader are the same person. As a field researcher, it is important to define your research identity, which can have a big impact on data collection. The participant, as observer, is present in this research. Students are aware of the research process, as this is the direction with which they can most be identified with ethically (Schleicher, 2007). The researcher is involved in the workshop, if not fully active, as he is also the trainer and gives the opening presentation. This increases the factor of subjectivity and greatly facilitates the inclusion. In order to reduce the risk of validity, the workshop is audio and video recorded, so that the researcher's notes and reflections can be checked and refined, and the observation can be clarified. The valid results of the research are further helped by the fact that on several occasions a second researcher participated in the workshops in a purely observational role. His notes allowed for double-checking.

This dual role concept is typical of participatory observation within organisations and is also reflected in this research. During the workshop, the role of the participant and the role of the observer are constantly changing. A presentation is given, the researcher as an active participant performs it, and then, if he/she deems it appropriate, changes to an observer role,

the point being that the research can benefit from the role change. In the case of a presentation, for example, you could record how the group incorporates what is said into their work (Oborni, 2017).

Observation aspects applied during participatory observation were the following:

- (1): Recording the students' attention (listening, questioning, note-taking, existence and intensity of discussion) to the presentation that starts the workshop
- (2): Quantity and nature of asked questions
- (3): Observation of students' independent task solving process: roles, communication, turning points, passive actors
- (4): Behaviour of students during the time of the individual task
- (5): Process, steps, roles, and communication of individual task solving
- (6): Number of conflicts that have arisen during the task, their influence on the work, how to resolve the conflict
- (7): Difficulties identified during the exercise that did not lead to conflict but were resolved
- (8): Milestones on the way to a solution, students' relationship to the outcome
- (9): Analysis of the result/product created

Observational aspects have evolved and developed over time as the research has progressed. After each workshop, the ready responses received were incorporated into the next session, without deviating from the main research line, but complementing it, so that the possibility of comparability was maintained.

Although the research strategy employed cannot be narrowly defined as action research, it is the qualitative strategic approach that guided the researcher's role in participatory observation, so it was felt important to briefly characterise it and define the key cornerstones that were considered to be the most inspiring. While in traditional research methodologies the organisation in focus is passive, in action research the researcher acquires dynamic knowledge, actively interacting with the organisation under study (Grasselli, 2009). The intervention may confront the researcher with a reality that does not always or not exactly reflect the literature as expected, and thus the research question may be shaped along the way.

Action research, and within it, participatory action research, has been the guiding principle, where the importance of the community, the organisation under study, is enhanced, where the researcher is actively integrated into the research process, *not only as an observer, but also as a planner and analyst*. Action research can be described as a scientific approach rather than a method (Grasselli, 2009). The definition of action research is presented from the perspective of an alternative paradigm: the definition of Reason and Bradbury, who define “participatory research” and “action research” terms in a common understanding, in a generic term: “...a democratic, participatory process aimed at the creation of practical knowledge for the benefit of people and humanity... and which combines action and reflection, theory and practice, aimed at the common solution of problems of importance to people and, more broadly, at the upliftment and advancement of individuals and their communities” (Reason & Bradbury, 2001, p. 2). This definition is fully in line with the outlined research objectives.

Another important guideline for action research has been the approach of Lewin (1946) to functional development, where outcomes become measurable and research creates value from both a practical and theoretical perspective (Kaukko & Fertig, 2016). The steps can be defined as follows:

- 1) diagnosis
- 2) planning
- 3) initiating the first step
- 4) application of plans
- 5) observation
- 6) design the new phase on the basis of an analysis of the results of the previous one, incorporating the results of the observation (Vámos, 2013) 6)

There are countless variations of action research, certainly one of the most practical outcome and knowledge-focused methodologies, which seeks to demonstrate not only theoretical knowledge but also change in practice. It aims to create knowledge that supports people in their everyday practice (Csillag, 2016). Action research in pedagogical practice compares and analyses the purpose of a given educational activity/tool and the result realised in relation to it. Action research in pedagogy means integrating everyday things into educational practice, where they are unfolded, and their meaning is examined. Its specificity is that it focuses not only on the outcome of the process, but also on the process itself. It enables the observation of the learning process itself, as well as the performance of the students, while at the same time the community-building role of action research cannot be overemphasised (Havas, 2004).

When we speak of a scientific paradigm, it is based on a scientific-theoretical approach that focuses on the fundamental beliefs of the researcher, including (1) the goals that science serves, (2) the tools that researchers use, and (3) the ontological choices (Csillag, 2016). Based on the study of Csillag (2016), participatory paradigm – through its most characteristic peculiarities – gives answers to the ternary “representation, validity and practice” crisis present in social sciences (Lincoln & Denzin, 1994, p. 28 in Csillag, 2016). The participants in the research are not only the subjects of the research, but also co-researchers, and the results of the research are the result of a joint creative work.

1. The researcher himself is the subject of the research, his knowledge is based on his real experiences, for which, of course, the appropriate critical subjectivity is essential.
2. Integrating theory and practice creates knowledge that is valid for practice.

Researchers observe total democracy in participatory action research (Lajos, 2018). This in itself determines why such a theoretical basis based on equal roles as designcommunication is inspired by the theoretical framework of action research. In contrast to the definition of action research, participatory action research can be defined as follows: “focuses on participation and power shifts, participation in decision-making processes that affect communities” (Bodorkós, 2010, p. 37), and “involves, as far as possible, all relevant actors in the process of evaluating a situation that is considered problematic in some respect, with a view to bringing about change and concrete action” (Bodorkós, 2010, p. 37). Participatory action research is a specific approach to scientific research. The researcher builds on the knowledge of the local community, focusing on the process of shared learning, where the group uses the results of this learning for its own development and to solve a given problem. This shared learning process requires a constant, active presence of action and reflection. The aim of participatory research is not only to gain a deeper understanding of problems, but also to create social knowledge and to synergistically combine different types of knowledge (expert/trainer and classroom knowledge) (Pataki & Vári, 2011).

5.4.3 Memory book: reflections written by students

The final phase of the participant observation (workshop) is a written summary of the participants' views. Along minimum guidelines, research participants are asked to summarise their thoughts in writing on *a clean, white sheet of paper*. To use a metaphor often used in qualitative approaches, a memory book/guestbook was applied. It is important to record their own role, their good and bad experiences, their suggestions, what they liked and what they did

not like. Projective techniques were also used during the reflections, the students are asked to define the outcome of the personalisation of the designcommunication, the workshop based on the creative and design approach. It is necessary to depict with precise external and internal characteristics what kind of person or animal the workshop itself would be. The projective technique is also combined with visualisation, with students having to draw the phenomenon of creativity without any help or added information. The content analysis of the reflections written by the students themselves plays a very significant role in the data collection and has had a decisive influence on the research results.

5.5 Application of projective techniques

Projective techniques are used both for the in-depth interview and for the students' reflections. Projective techniques, indirect research methods, help to understand consumer attitudes, thoughts and feelings (Steinman, 2009 in D. Horváth & Mitev, 2015). They have the ability to relieve closed-mindedness and tension, leading to a more positive attitude (Gyulavári et al., 2012). An important feature of projective techniques is that they are unstructured and provide as wide a variety of responses as possible (Gordon, Pál, & Langmaid, 1997). Their use in marketing research provides deep and rich information. It reveals aspects of motivations and behaviours, personality traits, that a direct research technique would not be able to (D. Horváth & Mitev, 2015). The projective technique is recorded in the literature as a disguised technique. This is because the subjects involved in the research are aware that they are part of a research process, but the exact orientation of the research remains unknown to them. Hence the aforementioned unstructured nature of the projective technique. The subjects of this research, the children, know that they are part of a research process, but they are not informed about the exact object of the research, they do not know why they are asked for the personalisation of the designcommunication workshop. We usually encourage research subjects to create something during the projective technique (Gordon et al., 1997). Research subjects are not aware of which answers are correct, they are not aware of the socially expected, ready-made module answers (D. Horváth & Mitev, 2015), that can also reduce research limitations.

As part of the qualitative data collection method, the projective technique is included in the research design. The projective technique is intended to bring out the children's instinctive reactions, their unconscious, framed responses during the workshop. The research aims to bring out instinctive creativity, the free flow of ideas and the realisation of the flow experience

(Csíkszentmihályi, 2010). This is facilitated by the use of indirect questions, which encourages a high degree of freedom and instinctive creativity. The use of projective techniques in a group is more difficult, with a minimal loss of depth in the research results, but this does not mean that the use of projective techniques in group dynamic observations cannot be effective. It is very important to note that there are no precise, defined rules for the use of projective techniques and questioning in groups, but to be effective, certain processes need to be carefully managed (Gordon et al., 1997).

For the present research, the “no wrong answer” principle is a key principle. It is important that I do not add to an already unusual situation for children the pressure to conform in front of the group. From the very beginning of the workshop, I assure them that there are no inappropriate expressions, no wrong answers and that they are allowed to ask questions. I emphatically express that this is a free, rule-free few hours where everything they say is both valuable and equally valid. The correct use of the projective technique in a group setting involves ensuring that participants do not feel that they are in a situation where compliance is the goal at all costs, such as in school (Gordon et al., 1997). This is not facilitated by the school/classroom as a location. The problem will be solved by rearranging the room and creating a friendly, relaxed, informal relationship between the researcher and the participants.

5.6 Coding and analysis

Coding of the reflections and in-depth interviews is based on the grounded theory of Strauss and Corbin (Strauss & Corbin, 1994), which is presented in the following three steps (D. Horváth & Mitev, 2015):

1. First, the process of open coding takes place, whereby a relatively large number of categories are identified after an open, free reading of the text. This phase of coding is unstructured. I look for similarities and differences, while constantly asking questions about the phenomena I detect. At this stage data is broken down, labelled and categorised.
2. In the axial coding stage, the categories are merged. It is very important for the researcher to reduce the potentially innumerable number of categories identified during the open coding process in order to draw out the potential relationships between the identified themes and patterns. Clustering of similar concepts is achieved at this stage,

and the key difference with open coding is that the focus here is on examining the relationship between categories. This is the starting point for theorising.

3. In conclusion, the selective coding process will also identify the key category, the central dimension, which will then be compared with the processes during the participant observation, the product achieved, and the problems identified with the community during the in-depth interview, by exploring the dimensions that can be linked to it.

5.7 Triangulation, guarantee for validity

Triangulation is the most effective tool for validating and ensuring the validity of qualitative research (Sántha, 2009). Triangulation is a set of criteria developed for qualitative studies, which does not ignore the specificities of the qualitative paradigm, approaches the problem from a different perspective, thus ensuring the unique methodological principles of the studies (Sántha, 2010). The role of the combined methodology will be enhanced. Although the results of pedagogical research can seldom be delivered directly in mathematical terms, the use of multiple perspectives on problems can bring us closer to a valid interpretation of the results.

The diverse application of several types of triangulation can complete the process. The multi-methodological research strategy employed employs three different data collection methods, resulting in a triangulation of data collection methods with the same components (in-depth interview, participatory observation, reflections and the use of related projective techniques), which can be described as a methodological (within-method subtype) triangulation typology (Sántha, 2017). Methodological triangulation is the central concept of the different typologies, in case of using as many data collection methods as possible to investigate and answer the same problem (Sántha, 2015).

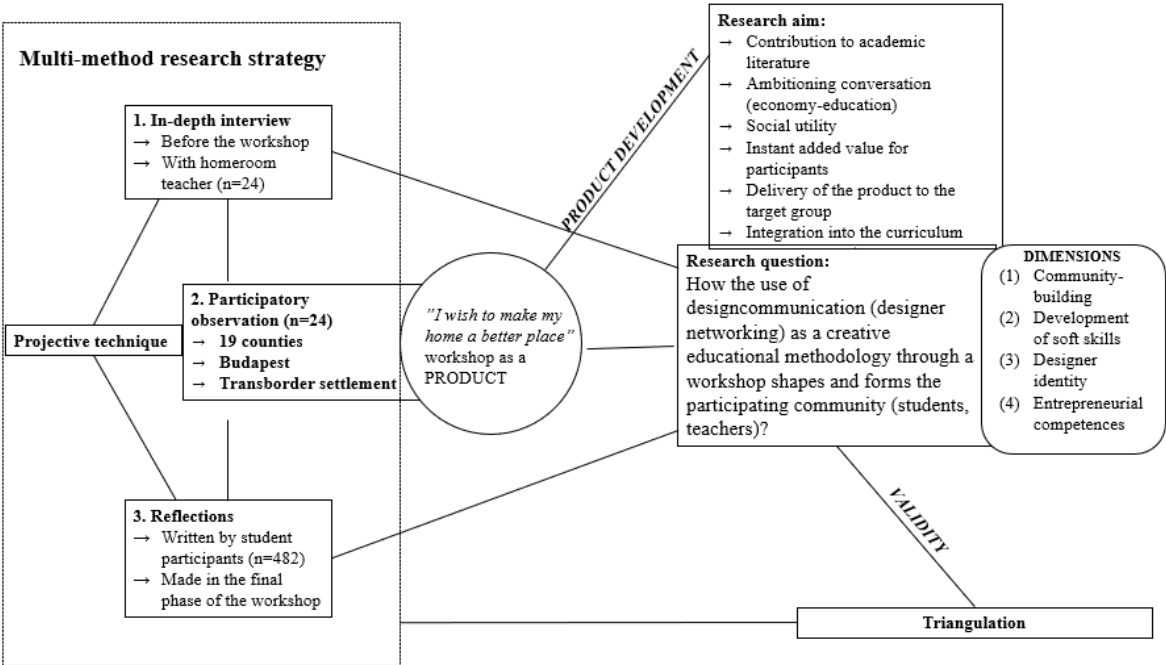
Methodological triangulation is accompanied with triangulation of data. *“In general terms, triangulation of data means working with data collected at different times and places, from different sources, by different people and with different technical implementations. Thus, temporal, spatial and personal dimensions can be distinguished”* (Sántha, 2017, p. 36). There is also a temporal and spatial dimension, as data were collected on 24 occasions at 22 different locations and times. The personal component of the triangulation of the data is realised in the fact that different persons (teachers, students) in given and different locations (schools in each county) are not recurrent occasions, but new research subjects are always being studied.

The presence of personal triangulation is also very important in the process. Such an intensive empirical research, involving a long period of time, can be exhausting if the researcher works alone and analyses the data alone. Personal triangulation is achieved when the same data set, for the same phenomenon, is studied by several people, which is the case in this research, as being part of several research teams allows for this kind of joint work, collaboration, and as a result, the data recorded during the data collection process is analysed by several researchers, cross-validation occurs. Triangulation, often used in pedagogical research, is an integral and central element of empirical studies, and contributes, among other things, to the systematic ordering of qualitative processes (Sántha, 2015).

5.8 Visual summary of the research plan

To visualise the key steps of the research plan, a map has been created showing the key elements of the research plan described in the above chapters from the perspective of the research strategy in relation to the core product.

Figure 4: Visual plan of the research plan in the context of the central product and the research question



Source: own elaboration based on the pre-defined research plan

5.9 Role of the researcher

The role of the researcher is essential in qualitative research. Being a qualitative researcher is a big responsibility, and even more so when the research subjects are minors. What the qualitative researcher seeks during the research is the “spiritual enlightenment”, “creation of meaning”, the latent understanding of processes and their results (D. Horváth & Mitev, 2015). Metaphors are a popular tool in qualitative research to facilitate understanding. In the literature, the qualitative researcher also identifies the role of the researcher with metaphors, of which the researcher in this study identifies with the director role concept. The research itself is nothing more than a contemporary theatre performance, where the researcher chooses the research topic, the workshop theme, the central element, in this case the possibility of making home a better place. He is responsible for the members of the company, the children who are participating in the research, but the theatre company together creates the play, the outcome of the workshop, the concept of improving their environment (D. Horváth & Mitev, 2015). It is important that the characters in the play are also the audience, the roles are reversed, and they have to prove themselves to each other. The result, a jointly created product, the result of the director's alternating active and passive role, lives on in the members of the group, which they can then shape, and which offers the possibility of further action. Re-imagining the result and taking steps towards its realisation by the members is one of the objectives of the research. The researcher plays a dual role during the workshop, as it has already been mentioned in the participant observation. On the one hand, she is the overall facilitator of the workshop, and on the other hand, she is a participant observer. As a trainer, he/she has to shape the processes from the background, all without influencing the children's thoughts. You also have to keep in mind that good ideas need to be given space and room. From a research point of view, she is a participant observer, analysing the processes, the reactions, the group dynamics and the implementation of ideas.

5.10 Ethical aspect of the methodology

The ethical dimension is very important in research. The subjects of my empirical research are minors, so the research must be designed and conducted with great care. The school director knows from the moment he is approached that the children are participating in research

for a doctoral dissertation. The teachers contact the parents, and a research consent form is signed. The creation of this document was developed in consultation with a legal expert. In addition to the parents of the students, the homeroom teacher (or the teacher who knows the class best) signs the consent for the interview. Before the workshop starts, it is also communicated to the students participating in the research that they are now subjects of a research study. During the research, images and audio recordings will be made in compliance with the relevant GDPR rules, with the consent of the parents, stating that their use will be solely and exclusively for analytical purposes and to support visualisation in publications closely related to the doctoral thesis, as an illustrative tool. The relevant provisions of the GDPR were signed as a single document by parents and teachers at the same time as the research consent. The reflections written by the students at the end of the workshop are anonymous, so the subjects of the research cannot be identified. The role of the group dynamic and the individual are both important and are not limited by anonymity. The students participate in the workshop voluntarily, if someone decides that they do not like it or do not want to participate in the research, this is accepted by both the homeroom teacher and the researcher, thus ensuring an appropriate ethical framework for the research.

6. FIRST STEPS TOWARDS THE EMPIRICAL RESEARCH AND THEIR RESULTS – SUBJECT OF ACTION: INTRODUCTION OF THE WORKSHOP “I UNDERTAKE TO MAKE MY HOME BETTER”

I have conducted pilot studies twice for a successful product development process and because of the exact definition and testing of the research question and the methodology. The aim of these pilot workshops was to continuously develop the product, provide remedy for its defects, furthermore, to assess the methodological grounds of the research, test the workshop in practice, check necessary time and tools and eliminate arising problems. I am going to present the course of the two pilot workshops and their results in the present chapter. This is going to be coupled with the presentation of the exact course and characteristics of the developed workshop applied later in the research. The test nature of the pilot workshops was not communicated to either the participating students or the pedagogues, because I considered it to be of utmost importance to work in a real situation without becoming frivolous due to the pilot nature of the workshop. This was an important factor for both the researcher and the participants. Both workshops are based on the two pillars already described in more detail

above. On the one hand, the creative methodology selected during the creation was designcommunication approach, while wikinomics co-operation ensured the experience of a kind of social collaboration.

The starting point I adhered to all the time was the development of soft skills, particularly creativity, co-operation and communication and the creation of an educational tool which can be integrated into the closed, highly regulated system of primary schools relatively easily, with minimum financial expenses. Furthermore, the session is also intended to shape group cohesion via mass co-operation. Students must find a solution in an unusual situation and an unusual composition which place them into a situation outside their comfort zone where they all become designers. They rarely or never solve tasks in groups or if this occurs they do it in small groups. Thus, the unusual “lesson”, the trainer, the topic students work on, the method of co-operation and interactive learning are all novel experiences for students.

My former observations suggested that if this was realised via a realistic topic adapted to the interests of this age group, then real experience would support, strengthen the success of the workshop, the seriousness of the situation would awaken responsibility in participants (Rudnák, Komor, & Józsa, 2015). This was the basic idea when I selected “I undertake to make my home better” as the topic of the workshop. Home, the own, direct environment has an influence on everybody, its stimulus affects the intention to move to another place, thus place marketing plays an increasingly key role (Marien, 2013), and all this can be a common starting point for students and teachers living in the same town. The concept of place marketing is not defined for participants, but the task is about how they can make their direct environment, place of residence, home more attractive. They encounter different difficulties, problems, areas to be developed, but there is a common ground everybody is able to identify with. The criterion that the raised problem can be approached from several directions, from market, economic and social points of view played an important role when creating the topic. The decision whether they approach the development of their homes from a profit-oriented perspective or from the point of view of a charitable, social initiative can also determine the entrepreneurial attitude of the group.

The venue of the workshops was in Veszprém County, in Tapolca. Member institution Kazinczy Ferenc of Bárdos Lajos Primary School in Tapolca was selected. The previously established criteria served as determining factors during the selection. An important aspect was to select an institution which is average in every sense. This school is not a private institution, parochial school or a training centre financially supported by a foundation. Students study in 8 grades. They are taught by a homeroom teacher in grades 1-2, then another pedagogue takes

over the class in grades 3-4, and a third homeroom teacher is responsible for the class in upper primary school. The school is in a quiet, suburban area, currently visited by 558 students.

6.1 The first pilot workshop

The first workshop took place on Friday, 30 November 2018, at 13:00. I wanted to select a time when the workload of students made it possible for them to have an afternoon program. It is similar to the educational form called extracurricular learning (Imre, 2018), thus this timing was done because of the pilot nature of the workshop, because I decided to examine how the session becomes suitable to be integrated into morning curriculum. Based on the results of one of my previous researches I selected two age groups I could work together with during such a project (D. D. Horváth, Cosovan, Csordás, Horváth, & Mitev, 2018).

During the research the aim was to select the relevant target group (out of the examined grades 3, 6 and 8), with which the participatory observation can be realised. As a result of the empirical research I reached the conclusion that designcommunication, as a methodology suitable for the development of entrepreneurial attitude is less appropriate in the case of the youngest examined age group, because interests (work, profession) necessary during the application of such methodology do not appear here so intensively. In the first phase of the research I considered it justified to select one class. Based on research results, further analysis of both examined grades 6 and 8 may highlight new aspects in the research. The results show that interests are realised at different levels. While younger students have less specific but determined, self-confident plans, students at the graduating class know what would be fine, what they are interested in, but they have doubts, fears about realisation, uncertainty factors appear strongly. Finally, I made the decision taking into account the characteristics of the created product that sixth-graders who are free from fears but who have sufficient self-confidence would constitute the homogeneous pilot group, while eighth-graders would participate in the heterogeneous pilot research created together with pedagogues. This way, the age group characteristics of participating groups can also be observed, lessons can be drawn from them for the future and they can form the research plan.

On that basis, sixth- and eighth-grade students participated in the workshop. Neither students nor teachers received any specific information about the workshop, they only knew that they would take part in a creative, joint co-creation, without any obligation and traditional performance evaluation. Considering that the project was organised on Friday afternoon, in the free time of students, participation was not forced, nor was it compulsory. From the point of

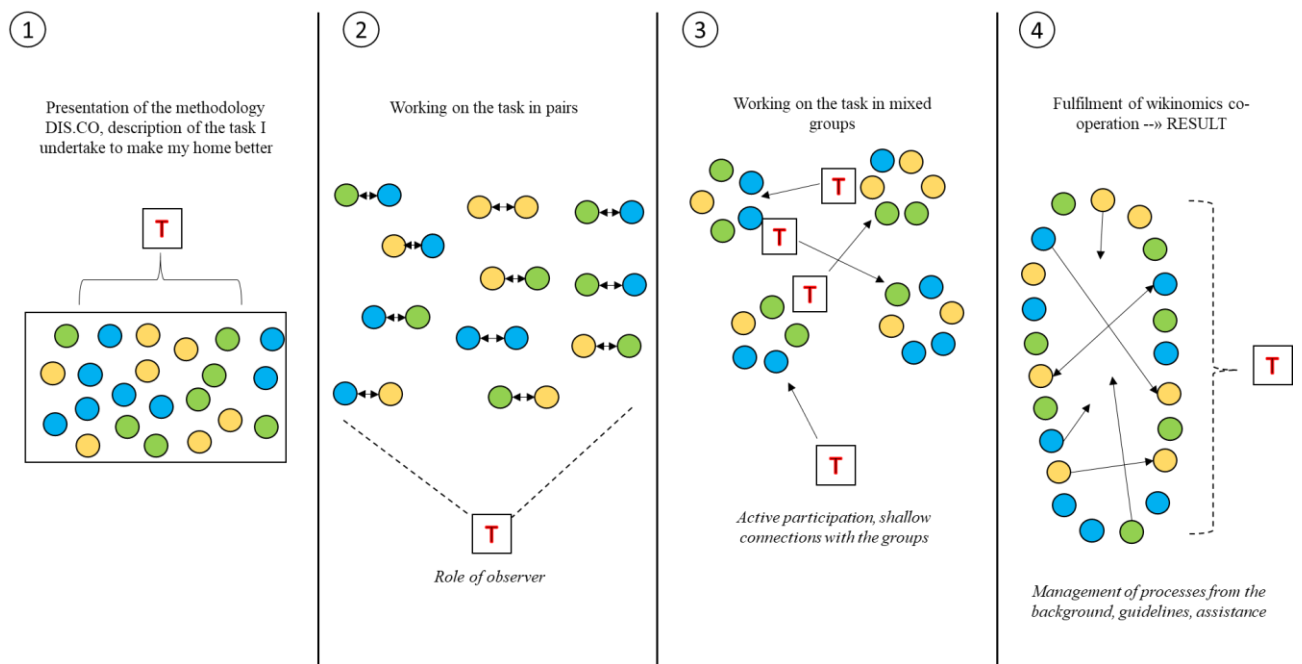
view of the project, it was of key importance that interested, actively participating students were present, instead of students coming in the hopes of getting a better grade in a given subject. Thus, 8 eighth-grade students and 7 sixth-grade students participated in the workshop.

The two biggest questions were whether I should hold a separate workshop for students, and if I should involve pedagogues working in the same school and teaching them currently or in previous years in the process of the workshop. If I involve them, the workshop will be realised with very diverse participants unlike before, when – as regards age groups - a wikinomics co-operation of a homogeneous composition was realised in practice (D. D. Horváth et al., 2018). Finally, during the first pilot workshop, taking into account and thinking further on former experiences I examined how a group diverse in terms of hierarchy, age group and life stage was able to interpret a creative workshop based on a designcommunication approach together. Finally, 7 pedagogues joined the 15 students too. The design of the workshop makes it possible for pedagogues to participate and create together with students, at the same time, the basic statement that everybody participates in the design process like an equal, there are no hierarchical relationships is not influenced by the composition of participants. This means that children and teachers of different ages can participate in the process together, because there is no hierarchical differentiation. Education facilitating tools of which everybody knows to have a positive effect on learning and have direct results can be defined as visible factors. Actually, **an obvious teaching occurs here, whereby the student is able to become his own teacher in a design process** (V. Juhász, 2018).

6.1.1 Phases of realisation

The workshop took place in a classroom. The project work practically does not require any tools except paper and pen. I am going to illustrate the process which is the content of the creative educational methodological workshop with a figure below. The project lasting for approximately 2-3 hours consisted of several parts.

Figure 5: Presentation of the training process from the point of view of participants' roles



Source: Own edition based on results and process of the realised test workshop

Besides themes and tasks the figure also shows the role of the trainer conducting the workshop. His involvement, task and responsibility are different in each phase.

1. The starting point is a presentation held by the trainer in which the trainer presents the characteristics of the applied designcommunication methodology which must determine the thinking of participants during the workshop. Design approach, co-operation as equals, freedom of thought and action are the starting point established by this presentation. Then the trainer has a decisive role, his presentation greatly influences the outcome of the workshop. The focus is on the fact that this is an unusual situation which will be successful if actors are able to adapt to the unique situation.
2. The design task first appears at the end of the presentation, according to which participants should start thinking about how they can make their environment better here and now. First they worked in pairs and discussed the task in a couple of minutes.
3. After that they got into randomly arranged groups which meant the joint thinking of 5-6 persons in the pilot project. All age groups were represented in each group. The trainer actively participates in the work of the groups, but lets the group unfold and gives room for own decisions.

4. The opinions formed in the small groups are discussed together and the opinion of one of the groups or an idea discussed by the whole group will be transformed into reality. The point is that based on wikinomics co-operation this should be a group decision instead of an individual decision. The trainer plays one of his most decisive roles in this phase, namely to recognise how much the group requires his active presence. His responsibility is to maintain the unity of the group and to ensure that valuable ideas are not pushed into the background.

6.1.2 Project “Happy Town”

Based on concrete results the first test workshop can be considered to be successful. The ideas created in groups of 5-6 persons were similar, thus selection and joint thinking were realised relatively smoothly. As a result of the workshop project “Happy town” was created, whose inaugural meeting was held by the group. The aim is to bring life to the town via own ideas and events initiated by the inhabitants of the town. As a long-term project, they aimed to improve infrastructure and broaden purchasing and entertainment opportunities as a result of series of precisely planned steps. They interpreted “making home better” at the level of the town and the fact that every team idea and also the final project presuppose an entrepreneurial mindset/attitude confirmed the results of one of our previous researches (D. D. Horváth et al., 2018). In order to prove that the focus on entrepreneurial mindset and brave attitude are the results of the workshop I need to do further researches, but I will definitely deal with this issue in the future. The town-level interpretation includes that they linked initiatives and the founding team to their own school, which presupposes strong bond and loyalty to their direct environment.

The measurement of project results took place at the three levels presented during the research concept. On the one hand, they include participatory observation during the workshop, on the other hand, output realised as a result of this, furthermore, opinions of students and teachers I measured two different ways. On the one hand, I asked participants to write reflections, on the other hand, I conducted in-depth interviews with pedagogues. Results and feedbacks are extremely instructive during a product development process.

6.1.3 Summary of the analysis of reflections and in-depth interviews

The analysis of reflections, the content analysis starts with the formulation of an important lesson. During former researches examining designcommunication, university students – as a part of the completion of the subject - evaluated projects in a two-page reflection and gave feedback about their own role in the group, their opinion in connection with the course, comparing it with their other, usual courses, the flow experience they had/did not have, lessons, their satisfaction, perceived/real efficiency of the methodology (A. R. Cosovan et al., 2018). University students adapted to certain forms of accountability, the online platforms allowing them to demonstrate their knowledge over the years. Children in the examined primary school handle their smartphones with ease, however e-mail, as a form of communication is not evident for them at all, although they have IT lesson. Reflections requested at the end of the project were submitted incompletely by only a few students. In connection with generation Z this kind of independence, the non-performance of a task without consequences did not promote the expression of opinion. Freedom is important for them, but compliance with rules is not always a priority for them, of which I obtained assurance during the research (Lukovics, Udvari, & Nádás, 2017). Multiple requests from the trainer, and pressure from pedagogues later were in vain, reflections were not submitted. It was a very important experience, thus at the next test locations of the training I complemented the forth, final phase of the workshop with a 15-20-minute part, when participants could write down their recent experiences on site, without being influenced by anyone, facilitating and increasing the completeness of the analysis of feedbacks and self-reflections, the integration of its results into product development and the validation of the method with triangulation.

Despite of this the results of the incomplete reflections were similar, the opinion of the community showed a clear picture for the researcher. I am going to present the results of the pilot project as regards reflections, from the point of view of pedagogues; summaries received from them were analysed. This is because results revealed via pedagogue reflections played a very important role in the product development process.

The analysis of reflections was done along certain dimensions. Dimensions were created as a result of the grouping of keywords identified during the analysis of reflections. The created dimensions are: (1) group cohesion force, (2) heterogeneous group composition, (3) emotional involvement in the project, (4) understanding of methodology, and (5) emergence of creativity. This is line with dimensions I bore in mind when creating the workshop.

Pedagogues assessed the group forming strategy positively, they believed it had group cohesion force (1), and they thought that randomness and heterogeneity facilitated “fast, relaxed, pleasant communication of group members. Groups designed and talked efficiently for a well-defined goal” (pedagogue 1).

They also all agreed that pleasant, active groups were formed and group members motivated each other (regardless of the size of the group). They also had similar opinions in connection with the heterogeneous group composition (2): “It was a very good idea to announce the “movement” *we are equal partners*. Children enjoyed to be in partnership with adults teaching in their school very much. Even if only for a short time” (pedagogue 2).

The transfer of designcommunication attitude is of key importance, because the project work is based on the understanding (4) and application of the essence of the methodology. This is confirmed by the feedbacks of participants at the training and also reflections from pedagogues: “We could get to know the point of the designcommunication project during a comprehensible presentation of superb quality and relaxed atmosphere. We saw a detailed review about the concept of communication integrated into development” (pedagogue 1).

Emotional involvement (3) is proven by the fact that participants stayed on site after the end of the training, and kept talking and designing. They got inspiration from it, “thus children’s simple, clear perspectives could emerge and their intuitions could unfold” (pedagogue 1), but it also justifies strong emotional involvement (3) that “they did not afraid of sincerely expressing their fears either” (pedagogue 3). According to the reflection of another participating pedagogue, emotional involvement could be observed because: “students and teachers got enthusiastic together about the idea of the realisation of project “Happy town”” (pedagogue 2).

The emergence of creativity cannot be questioned either (5). “Instinctive creativity” was mentioned several times in opinions, suggesting that creative ideas are realised instinctively with the help of the method and not as a result of conscious decisions of participants. This is what responding pedagogues define as a deficiency in the existing school framework. Despite this deficiency, they consider it to be an extremely important factor in the formation of “successful self-fulfilment” (pedagogue 2) and a “positive self-image” (pedagogue 3).

6.1.4 Interpretation of roles of teachers/pedagogues – in-depth interviews with teachers

In-depth interviews conducted with pedagogues were important feedbacks besides reflections. Questions were formulated based on reflections, along certain dimensions, facilitating their approach from a new aspect. In-depth interviews were conducted after the workshop during the pilot project. I already changed the order during my research, since the composition of the examined group was changed to which data collection methods had to be adapted. The reason for this is that the changed composition required a different focus during in-depth interviews in order that I could get an answer as precise as possible to the research question. I attached great importance to my own role. Teachers kept in mind help, encouragement and the activation of children and they identified these as their own roles. This suggests that the full termination of teacher-student relationship was not carried out, adults felt what the goal was and facilitated its achievement by shaping their roles consciously: “I tried to play my role in a way that children could show and develop their creativity, and have the courage to play the same role in this communication as adults do” (pedagogue 1).

I specifically asked pedagogues to identify 3 positive and 3 negative factors in connection with the workshop. Positive factors included the random nature of the process (group formation-group cohesion force), the way from generality to more specific things, impulsive attitude and joint thinking.

Several weeks passed between the workshop and the in-depth interviews, thus positive factors included an experienced result as well, namely that students who participated in the training started behaving differently with teachers who also participated in the event. Their relation was transformed into a more open, more direct, but respectful relationship. This relationship allows them to make mistakes, provides confidence and makes it possible for them to co-operate which are all mentioned among factors promoting creativity in the literature (Sahlberg, 2009).

Only one negative thing was mentioned by respondents: lack. The lack of the next level of realisation. They wanted realisation, they had the desire to act. The follow-up of the design result of the workshop is their task and responsibility, as well as how the idea formed at the workshop continues or gets forgotten as a part of everyday routine, losing its ritual nature.

Very important aspect in connection with the analysis are creativity, and the effect of the workshop on creativity. Creativity, its concept and meaning were in the focus of the interview. Based on the own definitions of pedagogues it can be interpreted as follows: “Free, creative thinking” (pedagogue 1), “Creation” (pedagogue 4), “By creativity I mean that a man –

sometimes exceeding his own limits – should be able to think of solutions which somehow could result in some kind of breakthrough in the given field, or could represent or show a new perspective by demonstrating the novelty of things or approaching these things from a different angle” (pedagogue 5) Based on the central thesis of designcommunication, as a communication integrated into development, improvement everybody is a designer (Papanek, 1971), all men have the ability to create. This is also supported by the answers received during the in-depth interview, responding pedagogues drew parallels between creation and creativity. The developed workshop is also built on creation, thus answers suggest that the design process and the product produced by them may have an effect on creativity.

During the interviews I asked respondents to personalise the designcommunication workshop, which is a projective technique applied as a part of in-depth interviews. Their task was to make a detailed description, describing what external and internal personality traits the designcommunication workshop would have if it was a person. Based on the result – which result is clear according to the consistently similar answers – it is a very special, creative, wise and dynamic person, who is balanced, easy-going and determined when solving a problem. All this confirms that I am progressing towards the set goals – the designcommunication methodology makes pedagogues associate with the values defined by myself. They understood the methodological frameworks of designcommunication which could also be observed during the application of personalisation, as a projective technique.

6.2 The second pilot workshop

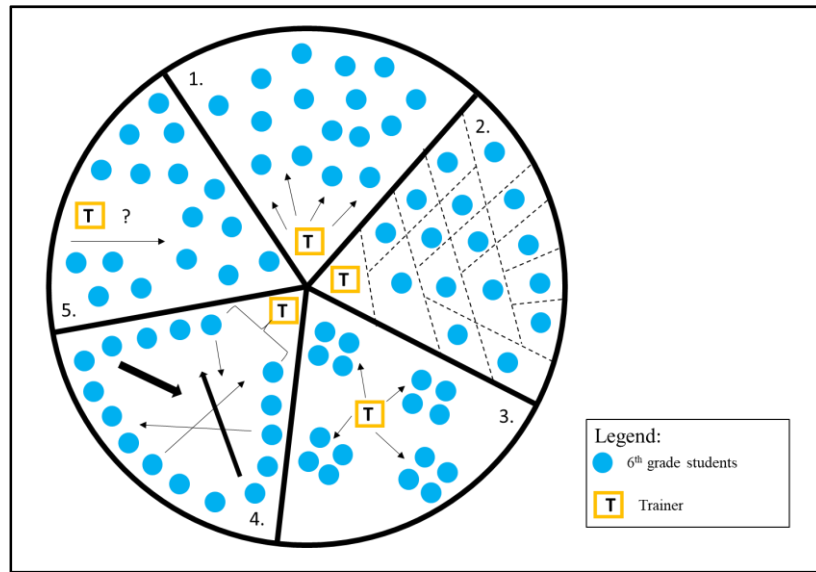
The second pilot research of the workshop “*I undertake to make my home better*” was already based on the experiences and results of the first research, its lessons were integrated into the process and, thus emphasis is now placed on differences and the presentation of results in the thesis. The age composition of the second pilot workshop can be regarded as homogeneous, thus doubts or uncertainties in this regard, or communication difficulties due to different roles did not exist. The venue remained unchanged.

The workshop was organised on 24 January 2019, nearly two months after the first pilot workshop, thus lessons could be integrated. The workshop took place on Thursday, integrated into the morning education during three school lessons and the breaks between them, meaning a time interval of approximately 2.5 hours. This is an ideal duration for a workshop because students cannot pay attention for a longer period. This is proven by the fact that attention span

(duration of active attention) varies by age, but does not exceed 30 minutes over the age of 14 either. In the case of the age group in question (ages 10-12) this is a time interval of about 25 minutes (Torda, 2000). A group of sixth-graders, 16 persons were the subjects of the research who were all in the same class. During the in-depth interview with the homeroom teacher it turned out that it was a community of talented, intelligent students in many cases difficult to handle. The word community is fundamentally questionable, because the biggest problem is that students cannot co-operate to solve ordinary tasks, thus this situation presented challenges from the point of view of the workshop. Students did not know anything about the training, the homeroom teacher told them the day before, that the next day there would be a kind of surprise, thus children could not prepare themselves for it, the new situation they got into was unanticipated, but they adapted to it very easily and quickly.

Structurally, the training consisted of 5 distinct parts, where the level of involvement, openness and the role of the trainer are different in each phase. Two differences can be observed as compared to the first pilot workshop. Here, following the presentation presenting designcommunication, participants identified the problem in their environment individually, not in pairs. This modification was made to allow everyone to have his independent idea he has to shape and think over already at the first step, thereby encouraging participation of individuals. The other difference occurred in the final phase of the training. Learning from the mistake, students wrote their reflections in the final phase of the training on the spot, thus ensuring adequate numbers and quality of feedbacks for the research. The next figure illustrates the steps of the workshop realised in a homogeneous environment in terms of the age of participants. Results are presented below the figure.

Figure 6: 5-step process of the training from the point of view of the trainer and the participants



Source: Own edition based on the process of the realised workshop

6.2.1 A.E.T.: Active Event for Tapolca

The success and efficiency of the workshop are largely determined by students and the product produced by them. Children participating in the research decided to elaborate the concept of a summer town festival-like event. The aim of the event is to resolve one – most important and most urgent - town-related problem every year – from the income of the event. The central element of the family event is a fair whose income is spent to help disadvantaged residents of Tapolca and ensure their decent quality of life. Besides the fair, the event includes cooking and sporting competitions, handicraft activities, presentations and community programmes. In addition to help and town development, students see a community building role for the event, because they believe that there is little opportunity for this in the town. Making the town better was approached by students much more from a social perspective – they defined “making it better” as a help - rather than from the perspective of the design of a profit-oriented product. The appearance of entrepreneurial attitude in the case of this age group in a homogeneous environment was not remarkable at all.

6.2.2 Children's feedbacks – analysis of reflections made in the final phase of the workshop

Every participating student received a white paper in the final phase of the research, at the end of the workshop. The trainer asked everybody to write down how they felt, how they would define their own roles, what they liked and what they did not like during the workshop, as if it was a memory book. There were no other requirements in terms of duration or volume, they could write down their thoughts freely. A total of 16 reflections of 16 participants were analysed during the research. During the study of reflections the three-phase coding logic of Strauss and Corbin was applied (Strauss & Corbin, 1994). Results of the first workshop served as inspiration when creating the codes.

1. The process of the creation of categories, the impartial reading of reflections and the recording of all observed categories took place in the open coding phase. I did not structure data here yet because I considered it essential to get an overall picture. I named categories and highlighted elements considered to be most important. Reflections were read over, and 8 categories were identified in the initial phase. It is important to note that reflections were not very long, partly because of the lack of time, partly due to the age of children. Students filled half of an A4 sheet with handwriting. The 8 key categories were: (1) first reaction, (2) how they felt at the workshop, (3) characterisation of the presentation about designcommunication, (4) definition of their own roles, (5) characterisation of the task, (6) produced results, (7) group work, (8) characterisation of the trainer, (9) obstacles to success.
2. The relationship between the previously defined key categories was determined while their synergies and potential were revealed in the axial coding phase. After revealing relationships, the closely related categories were linked together. The categories own role definition and how they felt during the workshop were interpreted as one dimension. The characterisation of the presentation about designcommunication and the role of the trainer are closely interlinked, since presentation includes one of the strongest presence of the trainer, thus these two categories were also consolidated during the axial coding. The closest connection was identified between the produced results, group work and obstacles to group work, so these three dimensions were treated as one dimension. A total of three main dimensions were defined which are presented in the thesis with quotes.

3. Selective coding was the final phase when the central phenomenon was selected and the story of the central element was created, focusing on the key motif (D. Horváth & Mitev, 2015). Group work and its results were defined as the key motif in the process of the selective coding.

6.2.3 Role definition and experience factor

Children were specifically asked to define their own roles at the workshop and to write down how they felt during the event. Based on the analysis of the reflections it could be clearly observed that the two dimensions are interlinked, since the experience nature of the workshop was greatly influenced by their own roles. They answered with almost no exceptions that they had felt very well/well/mostly well, however, in most cases they also associated it with their own roles: “these were the best lessons”, “this all was built on my idea and it felt good to know that everybody liked it”, “I had a good time, but my opinion was not built into the idea”. “I liked everything, but I could not really participate in it”, “I told them ideas which were good...these were the best lessons”

6.2.4 The role of the presentation presenting the method of designcommunication and the trainer

The methodology was presented in the form of a presentation, in the initial phase of the workshop, thus this was the first intensive contact between the trainer and the students. The trainer is present throughout the workshop, although she moves to the background after the presentation of the methodology, participates in the co-ordination and helps create the frameworks in which the group is capable of working together and producing results. The two dimensions were consolidated and handled together for the reasons set out above, Students defined the workshop as a lesson: “I have learned many things during these three lessons”, but they did not identify the trainer as a teacher, she was described as patient and kind: “The trainer is very kind and patient”, “hats off to her for staying so calm”. The concept of interesting, the acquired knowledge and the role of the trainer who patiently held the presentation and created an atmosphere in which students could create appeared in the context of the presentation: “the presentation was good”, “First the trainer told us about a report she deals with – this was something I found very interesting”, “I was glad the trainer came, because I think she was

talking for at least 3 hours about things the majority of students in the class did not now”, “she showed us things which can or with which we can help other people or our environment”, “I liked this thing very much”. It can be seen that the unusual situation and the novelty affect the attitude of students positively. Of course, a non-hierarchical relationship can be established better with a person students do not know as a member of the pedagogue community, if there are no entrenched role definitions, which, the other way round may be an opportunity. If a pedagogue holds a workshop of this kind for children on a repeated basis, he can influence the teacher-student relationship, whose significance was mentioned during the literature analysis, thus this can be interpreted as a very important result of the pilot project, which definitely needs to be examined during the empirical research.

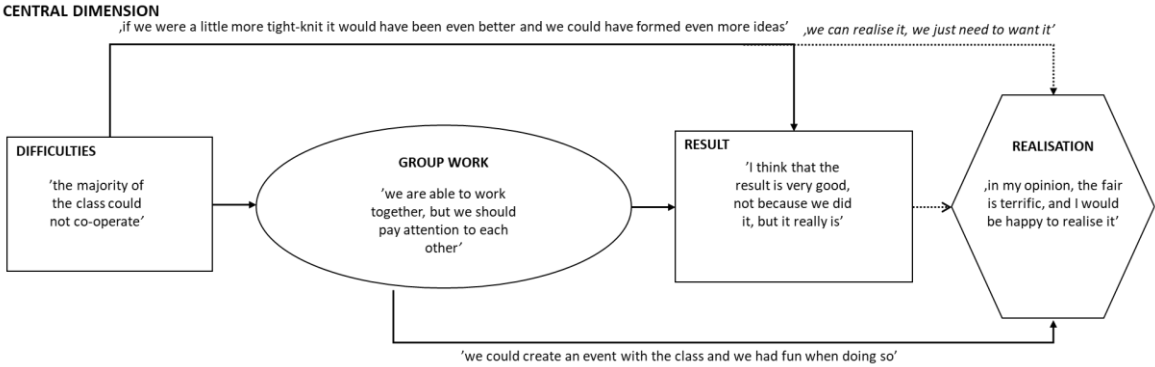
6.2.5 Group work, difficulties of community creation and the result as a central motif

The majority of the volume of the reflections was about the group and the results produced together, in addition to this, great emphasis was put on difficulties and trials which hindered the production of results. Negative things were in line with what the homeroom teacher told me about the class. It is a very heterogeneous group, and it is extremely hard for its members to act as a community. This was confirmed by the problems defined by them in their reflections, namely that: “we always talked over each other”, “everybody was talking at the same time”, “the decision was not unanimous enough”, “the majority of the class could not co-operate”, “the easiest thing was to form ideas, the hardest thing was to work together”. The result and the group work facilitating the production of the result eliminated and overrode difficulties recognised by children. They realised they had been able to solve and over-perform the task as a group at a high quality which they also evaluated and liked: “it is totally weird that the 16 of us managed to do this”, “we are able to work together, but we should pay attention to each other”, “yet, we managed to achieve something”, “we have learned how to work together”, “it was nice working in a team”, “we formed ideas together, everybody had their say in things” They were proud of the result, it was a sense of achievement for them, but this sense of achievement was not just because of the result, but also due to joint creation: “we can create an event with the class and we have fun when doing so”, “I think that the result is very good, not because we did it, but it really is”, “we managed to design our little event in 2 hours”. A particularly important result is that children became aware of the idea that results do not only come from design and realisation is still to come. This recognition is also linked to the dimension of result, which appeared together with group work in the reflections of children,

who regard it as the next step of design, they must perform together as well: “in my opinion, the fair is terrific, and I would be happy to realise it”, “we can realise it, we just need to want it”.

The four dimensions of the central phenomenon are illustrated in the figure below with the most significant quotes. Connections between dimensions are clearly visible in the figure. Despite the recognised difficulties the group was capable of operating as a group and producing results they set out during the design of the event. Furthermore, results indicate the possibility of realisation in the future. The figure illustrates what students referred to, namely that if they eliminate difficulties, even better results will be produced and realisation may also become realistic, if the group really wants it. The relationship between the power within the group and realisation is confirmed by the fact that they would be able to create the event in such a way that in the meantime they could operate as a team and have fun, with which they recognised the value and power within the group.

Figure 7: The four elements of the central dimension

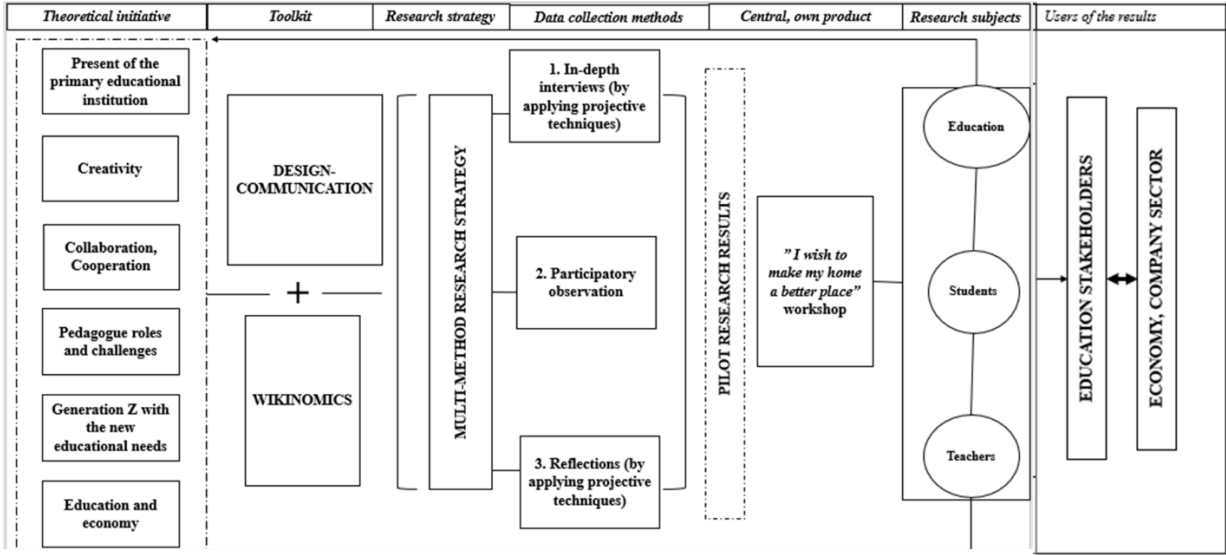


Source: Own edition based on the reflections of students participating in the workshop

7. THEORETICAL FOUNDATION AND SUMMARY OF THE RESEARCH PLAN

The literature analysis and the chapters of the thesis forming the basis of the primary research is visualised with a structured summary figure for the reader.

Figure 8: Theoretical background of the thesis and structured summary of the related research plan



Source: Own edition based on the literature studied in the thesis and the prepared research plan

As the theoretical starting point of the figure shows, initially I provided a detailed overview of how the interdisciplinary literature review, the methodology of designcommunication and the toolkit of wikinomics contribute to the definition of a problem relevant from both an academic and a social point of view, the design of the research concept, the research strategy, the selection of data collection methods and the formulation of the research question. The figure illustrates the parts of the theoretical framework studied in detail which was the starting point, which gave inspiration in this topic, and highlighted its importance. The workshop “I undertake to make my home better” can also be interpreted as the result of the research work and product development carried out so far, it was created in parallel with the research process taking full account of the needs of the target group.

Education and pedagogy, furthermore their economic aspect and assumed impression, the interdisciplinary approach make it possible for me to deepen my knowledge of a topic, where social significance, social utility, the individual added value and/or learning of people participating in the research can be truly realised and thus interpreted among research purposes. In the creation of the final phase of the research plan, the realisation of the two pilot researches helped me a lot, besides the knowledge from the literature review. The results and experiences of the researches were integrated and contributed to development, whether we are talking about product development or the appropriateness of the methodology. It means a lot to me and it is

forward-looking that I already experienced the characteristics of the examined age group and the atmosphere they create before the start of the “real” primary research, thus I already had this experience at the next research venues, which formed the role perception of the researcher. The qualitative research holds opportunities to change, improve or perfect all the time, which greatly contributed to the provision of the answer to the research question formulated by myself.

8. THE EMPIRICAL RESEARCH AND ITS RESULTS

8.1 The central product – the designcommunication workshop

8.1.1 Background of the creation of the product

The design perspective-based aspect of the methodology was described in detail in the chapter presenting the theoretical fundamentals of designcommunication. The application of the methodology appears at two levels in the thesis. The first level is the process of the design of the thesis itself: the emergence and integration of social added value, sustainability and interdisciplinary approach into the thesis. Furthermore, this also includes the phenomenon, as a methodological characteristic of designcommunication, that the result of the doctoral work is not just the creation of the doctoral thesis, but in parallel with this (even spanning over the process in time and space) there is a product development process as well. Therefore, one of the tangible results of the doctoral work is the creation of the designcommunication workshop “I undertake to make my home better”, as an intellectual property.

The second level of designcommunication appears in a way that it is applied as the methodology of the created workshop and research questions also focus on it. Therefore, the methodological characteristics of designcommunication and its added value in the improvement of soft skills are examined via the produced product. Pilot researches greatly contributed to the formation of the product, the establishment of foundations and starting points. Later, sessions held during participatory observations, one of the data collection tools of the multi-method qualitative research methodology helped further develop the product, which was thereby perfected. It reached a level where it could already be presented as a product and could be handed over to pedagogues, the actors most concerned by education for everyday application. The aim of the present chapter is to give a precise description of the product, as the result of the thesis, together with its characteristics and details.

8.1.2 Mission and vision of the product

The most important mission of the educational methodological product, the reason for its creation and its long-term effort is the conscious improvement of soft skills of primary school students co-ordinated at least at school level. The design methodology-based session primarily strives to improve creative, critical thinking, and co-operation and communication skills via the application of a class-level wkinomics co-operation. The vision of the produced product is to familiarise itself with pedagogues as widely as possible via trainings, and make an attempt to be integrated into the curriculum. Moreover, the vision of the product also includes a relationship function, which will be established, maintained and deepened by the product between the corporate sector and education.

8.1.3 Primary and secondary target group

Primary school students, and pedagogues teaching them directly, with special regard to creative pedagogues open to new methods in the organisation of school are defined as the primary target group of the designcommunication workshop I undertake to make my home better. Furthermore, headmasters approving and deciding about the application of new methodological tools are also defined as members of the primary target group. All educational actors, with special attention to experts of employers making decisions about the necessary and expected skills of their new employees were defined as members of the secondary target group.

8.1.4 Unique selling proposition

The unique selling proposition of the session includes its flexibility, multi-faceted applicability and customisation. The design approach itself already presupposes plasticity. The courses are charted, however, there are no strict frameworks. The most important thing for trainers applying the workshop to do is to get acquainted with the essence of the session and the characteristics and value system of the designcommunication workshop. This will support the recognition how the mastered tools can be adapted to the given community. The workshop offers us the opportunity to get to know the way to the solution of a problem instead of giving ready module responses.

8.1.5 Product description

The duration of the created workshop is approximately three 45-minute lessons together with breaks, which can be shortened to two 45-minute lessons. The shortening can be done if the same trainer has already conducted the session with the same community at least once. It is important that the schedule of the parts of the workshop should not be carried out in accordance with the normal timing of lessons, thereby forcing students out of their entrenched routines. It is worth taking maximum one break during the session, but then it is also important to keep students in the same area, in order not to interrupt the developing process. Of course, if children need to go to the bathroom they can do this at any moment of the session after letting the trainer about it.

The workshop does not require any tools which makes its applicability simpler. However, it is worth holding it in a classroom, where tools like paper, writing instruments, blackboard, coloured felt-tip pens, materials necessary for students to create are available. It is not compulsory to use these tools, and we mustn't encourage participants to use them, but they may help the work of children when they visualise things during the creation process.

Class arrangement is a key issue during the workshop. A space should be created where children can move easily with their chairs. It must be ensured that they can turn towards each other, and adapt to the size of the group easily and smoothly, and there are no physical elements between them which separate them from each other in space.

The workshop I undertake to make my home better is carried out focusing on the home, as a common concept understandable to all participants. The first workshop should definitely be organised around the home theme, this is the starting point. However, regular application of the session makes it possible to work on other topics as well. The topic of the workshop is important in the sense that it must be selected in a way that it should be almost equally known or unknown by participants. This is based on Amabile's research results who pointed out that creative solutions are more likely to be found if individuals create something new in connection with an area they know, or they often work with (Amabile, 1996). However, processes are much more decisive than topics during the session. Themes mean only the surface as a driving force to reveal underlying processes. In the case of topic definition open-ended questions are also important criteria. Students must look for answers to problems or questions to which there are no accurately, well-defined solutions, thus, in accordance with the establishments above, both the solution and the path to this solution are important, in most cases the result itself will be this path, at least with respect to development factors.

The structure of the workshop is realised as follows: The program begins with the introduction of the trainer holding the session and the students. The class arrangement outlined above can be realised as a part of the warm-up exercise or game. Similarly to workshops and trainings, it is necessary to start with tasks which result in a relaxed atmosphere, help get in tune and create a focused attention which will be necessary later. This is followed by the introduction of the designcommunication methodology in the form of an interactive presentation, which leads students to the experience of a creative design attitude. This is about a methodology established according to a scientific, academic framework, thus it is extremely important to hold the presentation in a manner and interpretation adapted to the target group, in order that students can really apply what was said here during the tasks. Learning, and also recognition, the acquisition of real knowledge should occur. The specific, central topic of the workshop appears only at the end of the presentation. It is important that no conversation about the topic can be started between the trainer and the students, so here it must be made sure that children can start thinking without any influence. The second phase of the session begins here. (1) The first step is to tell students the topic and the related question (In the case of the present series of workshops: You undertake to make your home, your environment better!) which they think over independently. Everybody must have their ideas, opinions here. Individual results are not shared with the group. If everybody has formed ideas, they get into groups of 4-5 persons randomly, and the second element of the second phase of the workshop begins. Physical space is also adapted to this, one large circle is converted into several smaller groups turning to each other. (2) The task of the smaller groups is to generate a joint solution from individual ideas. Every group should discuss and have an answer, a concept to how they would make their home, their environment better. Meanwhile, the trainer moves around and supports the work of the groups as a facilitator, however, she does not reflect on the work, she encourages students without judgement, but does not form an opinion. There is no good or bad, the trainer cannot criticise, she can move students from their standstill, but she rather asks than declares. The trainer is responsible for time management, she mustn't interrupt the ongoing process by setting time limits for students. The third phase is the (3) wikinomics co-operation, when small groups are converted into a big community and their task is to make a decision and produce a product at the level of the class/the whole group, together with visualisation. Students decide about its quality and type. The product can be a proclamation, a drawing, an inaugural meeting, a poem, but during the first events, the product in many cases will be the joint, progressive conversation and debate themselves. This is the most difficult task of the trainer holding the session, because she mustn't interrupt the work of the group. The class-level co-operation is the strangest, most

unusual and most novel experience for students, we practically prepare them for this during the whole workshop. This is strange for them for the first time, they may need more time to produce results, but we definitely have to let them unfold, because these are the most important pillars, which may bring about development, and show progressive changes on every occasion. In the case of the third pillar of the second phase it is important that they must present their result – what consensus they reached/did not reach - in some form. The real result is produced in the final phase of the session, it is a bit like savasana at the end of a yoga class, when your body summarises and incorporates the beneficial effects of the past 60/90 minutes. Here students write down how they felt, what they liked and what they did not. They receive a blank, white paper which they fill individually with their experiences and feelings as if it was a memory book. This must take place right after the workshop as its final act, in the same venue and environment. This is one of the most important outputs of the pedagogue, which, in the case of a proper analysis holds up a mirror to the teacher, building on which the next workshop can be developed.

8.1.6 Availability and introduction of the product into school environment

The training is available and applicable to all pedagogues, however, in order that realisation can occur correctly and for its intended purposes, teachers must take part in a designated process and training before individually applying the designcommunication methodology-based creative educational methodological tool. The training is held by the designated teachers of the Department of Marketing, Media and Designcommunication of Corvinus University of Budapest. After the theoretical training, pedagogues must participate in the designcommunication workshop described in detail above as observers. This can happen in their own, affected school community or at another school. The second step is a role reversal, when pedagogues hold the workshop which is monitored and supervised by a group of experts on the designcommunication methodology. An assessment interview takes place on the basis of what happened here and then pedagogues will be entitled to hold the workshop individually. It is important that from this point they become part of the teacher's network of the designcommunication methodology, which also means continuous support, monitoring and involvement in academic researches, thereby ensuring the continuous improvement of the educational methodological tool in the light of the received results. This way, constant stability is ensured in the constant-changing relationship of a dynamic product by continuously sharing knowledge, as a system of wkinomics co-operation.

8.2 Preparation process of the research, practical realisation

The preparatory phase of the research began in the summer of 2019 after processing the results of the pilot workshops and passing a complex exam, a milestone in the doctoral studies. The timing was important, because critical feedbacks received at the complex exam had to be built into the research. The interested primary schools were contacted with the help of the application of the snowball sampling described in the chapter on methodology with the involvement of the professional-pedagogue groups of social media. Sample collection was facilitated by the fact that in many cases pedagogues volunteered for the research proactively after seeing the call/ learning about the workshop from their colleagues, thus I, as a researcher did not have to face and deal with the mental and technical difficulties of refusal. Pedagogues' openness to and interest in the research was already a determining positive feedback itself in connection with the research and the topic which inspired me very much.

At certain schools first consultation was held with a pedagogue, who consulted in-house with the headmaster of his institution, but in certain cases the headmaster of the institution was the primary contact person and he directed me to the homeroom teacher of the class I wished to involve in the research. Considering that work at primary schools starts for pedagogues in the second half of August when they get to know and create the timetable and the exact schedule of the school year, thus only the first enquiries and consultations were held in the first half of the summer, while the specific dates were agreed in the second half of August 2019 and at the beginning of September 2019. A professional letter of introduction was sent to each institution concerned which contained the aim of the research, the presentation of the research and the researcher and the expected tasks, after which the specific date was agreed. This latter included a consultation over the phone, a conversation in all cases whereby the researcher and the pedagogue affected by the examination got to know each other informally. The consent form sent to the homeroom teacher and the parents of the participating students in the weeks before the workshop was an important contact point, which I got back signed on the spot, thus ensuring the principles of research ethics already explained in more detail in the chapter on methodology and the compliance of the research with the existing data protection rules.

Because of the great distances these were mostly all-day jobs, in many cases the workshop already began at the lesson commencing at eight o'clock. The sessions usually took place on Tuesday or Friday once or sometimes twice a week between September 2019 and February 2021 co-ordinated with my teaching job at the university, the schedule of the co-researchers

and the appropriate dates for students and pedagogues, which was not easy in many cases. We travelled to the venues of the workshops by car. Besides myself, another – sometimes two - co-researcher(s) always participated in the researches, who in addition to documentation supported participatory observation with their own reflections too.

Apart from the pilot research, data collection was carried out 24 times via the sessions. This included 19 Hungarian counties, Budapest and a settlement on the other side of the border. On one of the other 3 occasions, the headmaster of an institution in Bács-Kiskun County insisted that both classes participate in the session. Two sessions were held in Veszprém County, in Tapolca too, in one case on an experimental basis, with an age group of second-graders who greatly differed from the primary age group the research was focusing on. Furthermore, two workshops were conducted in Borsod-Abaúj-Zemplén County as well. The reason for this was that two educational institutions were contacted approximately at the same time, and both of them wanted very much the research to be carried out at their place, so I visited both places extending the sampling and focusing on the social nature of the research. It is interesting that we drove 7300 kilometres during the research to get to all locations concerned and the participation of more than 500 students and 24 pedagogues rounded out my multi-method, qualitative research. The exact locations (towns) of the workshops, the participating schools and the dates of realisation are summarised in the table below for the reader.

Table 3: Summary of realised school sessions by date and location

	County	Date	Town	School	Number of students	Km travelled
1.	Bács-Kiskun County	Friday, 6 September 2019	Kalocsa	Eperföldi Sports School, Primary School of Kalocsa	49	270
2.	Veszprém County	Tuesday, 17 September 2019	Tapolca	Kazinczy Ferenc Member Institution of Bárdos Lajos Primary School of Tapolca	35	640
3.	Pest County	Friday 20 September 2019	Nagykőrös	II. Rákóczi Ferenc Primary School of Nagykőrös	15	180
4.	Budapest	Monday, 23 September 2019	Újpest	Bene Ferenc Primary School of Újpest	16	0
5.	Heves County	Tuesday, 24 September 2019	Eger	Kemény Ferenc Sports School, Primary School of Eger	25	284
6.	Borsod-Abaúj-Zemplén County	Tuesday, 1 October 2019	Bodrogkeresztúr	Eötvös József Primary School of Bodrogkeresztúr	19	450
7.	Csongrád County	Tuesday, 8 October 2019	Hódmezővásárhely	Varga Tamás Primary School of Hódmezővásárhely	32	382
8.	Borsod-Abaúj-Zemplén County	Tuesday, 15 October 2019	Sajószentpéter	Kossuth Lajos Primary School of Sajószentpéter	23	400
9.	Tolna County	Tuesday, 22 October 2019	Tamási	Würtz Ádám Primary School and Primary Art School	20	285
10.	Szabolcs-Szatmár-Bereg County	Tuesday, 5 November 2019	Baktalórántháza	Reguly Antal Primary School of Baktalórántháza	15	540
11.	Jász-Nagykun-Szolnok County	Friday, 8 November 2019	Besenyszög	Chiovini Ferenc Kolping Catholic Primary School and Primary Art School	15	260
12.	Békés County	Tuesday, 12 November 2019	Mezőberény	Primary School, Primary Art School and Student Hostel of Mezőberény	23	414
13.	Fejér County	Tuesday, 19 November 2019	Baracs	Széchenyi Zsigmond Primary School and Primary Art School	25	180
14.	Komárom-Esztergom County	Friday, 22 November 2019	Dorog	Zrínyi Ilona Member Institution of Hungarian-English Bilingual Sports School and Primary School of Dorog	15	116
15.	Hajdú-Bihar County	Tuesday, 26 November 2019	Debrecen	Gönczy Pál Primary School of Debrecen	25	468
16.	Győr-Moson-Sopron County	Tuesday, 3 December 2019	Tápszentmiklós	Csokonai Vitéz Mihály Primary School of Tápszentmiklós	12	250
17.	Somogy County	Friday, 6 December 2019	Kaposvár	Zrínyi Ilona Hungarian-English Bilingual Primary School	22	380
18.	Zala County	Friday, 13 December 2019	Alsópáhok	Dr. Szántó Imre Primary School and Nursery School	24	380
19.	Veszprém County	Friday, 17 January 2020	Tapolca	Kazinczy Ferenc Member Institution of Bárdos Lajos Primary School of Tapolca	14	640
20.	Baranya County	Tuesday, 21 January 2020	Pécs	Bánki Donát Street Primary School of Pécs	20	414
21.	Vas County	Thursday, 23 January 2020	Szombathely	Paragvári Street Primary School	23	440
22.	Nógrád County	Tuesday, 4 February 2020	Dejtár	Mikszáth Kálmán Primary School of Dejtár	10	180
23.	Slovakia	Friday, 7 February 2020	Pelsőc	Dénes György Primary School	19	410

Source: own edition

8.3 Presentation and framework of the research results

Due to the complexity of the research, the large number of samples and the diverse data collection methods, research results are presented along a predefined workframe which is the same at all locations, focusing all the time on the research question and sub-questions to be answered during the thesis. In the first phase of the analysis results are presented by school, segmented according to the different data collection methods, thus presenting in-depth interviews with pedagogues, participatory observations, reflections written by students separately and I deal with results of each data collection method, consistent with and linked to each other. It is very important to present the coding, the analysis and the most significant intermediate results by location, in order that results of each county can be compared. This is not the primary objective of the thesis, however, if we want to ensure that pedagogues can use the product widely all over the country, individual results of each county and region may serve as very important feedbacks. Furthermore, getting to know the whole picture, exploring processes and problems thoroughly, defining correlations and the scientific contribution deriving from them cannot be considered to be well-founded without knowing the results of each location. Moreover, analyses by location reveal stages of product development which took place during the research process and illustrates well the continuous formation of the researcher's role and behaviour, as a characteristic of the qualitative research methodology.

After the presentation of the research results by location, the collective analysis of the 24 sessions and the determination of the most important key categories will take place, thus a clear and transparent structure will support the provision of a consistent response to the research question and will contribute to validity. The analysis of projective techniques is carried out during the presentation of the collective results, where the nature of the products produced during the session is also presented and conclusions are drawn from it.

8.3.1 Technical process of coding

The theoretical background was provided by the three-phase coding structure of Strauss and Corbin discussed in detail in the chapter about methodology (Strauss & Corbin, 1994). Coding was realised in a complex excel table, where the first sheet contained the coding of in-depth interviews while the second sheet contained the coding of the reflections of students. The use of different colours facilitated the individual analyses of each location. Every workshop

realised at these locations received an index, a number between one and twenty-three. A total of twenty-four workshops were realised, however, two sessions took place in Kalocsa. Here, the date of realisation, the circumstances, the location, and the age group were the same, therefore, I treat them as one event in the analysis. Two workshops were held in Veszprém County in Tapolca too, but at a different date and with a significantly different age group (6th grade and 2nd grade students), thus in this case the workshops were analysed separately. This is important to note because of the clarity of the coding. The location index was also the index of the in-depth interview conducted with the pedagogue. The indexing of the reflections of students was adjusted to these indices, thereby contributing to an easier comparability and identifiability. Students participating in the workshop at the first location had codes 1.1, 1.2, 1.3 etc., while students participating in the event at the second location were coded as 2.1, 2.2, 2.3, etc., then each location was numbered logically to 23. This indexing ensured that the anonymously made reflections could be linked to locations, but they also served as unique identifiers allowing a database to be created which can be processed in another research later.

8.4 Structured presentation of the results of each location

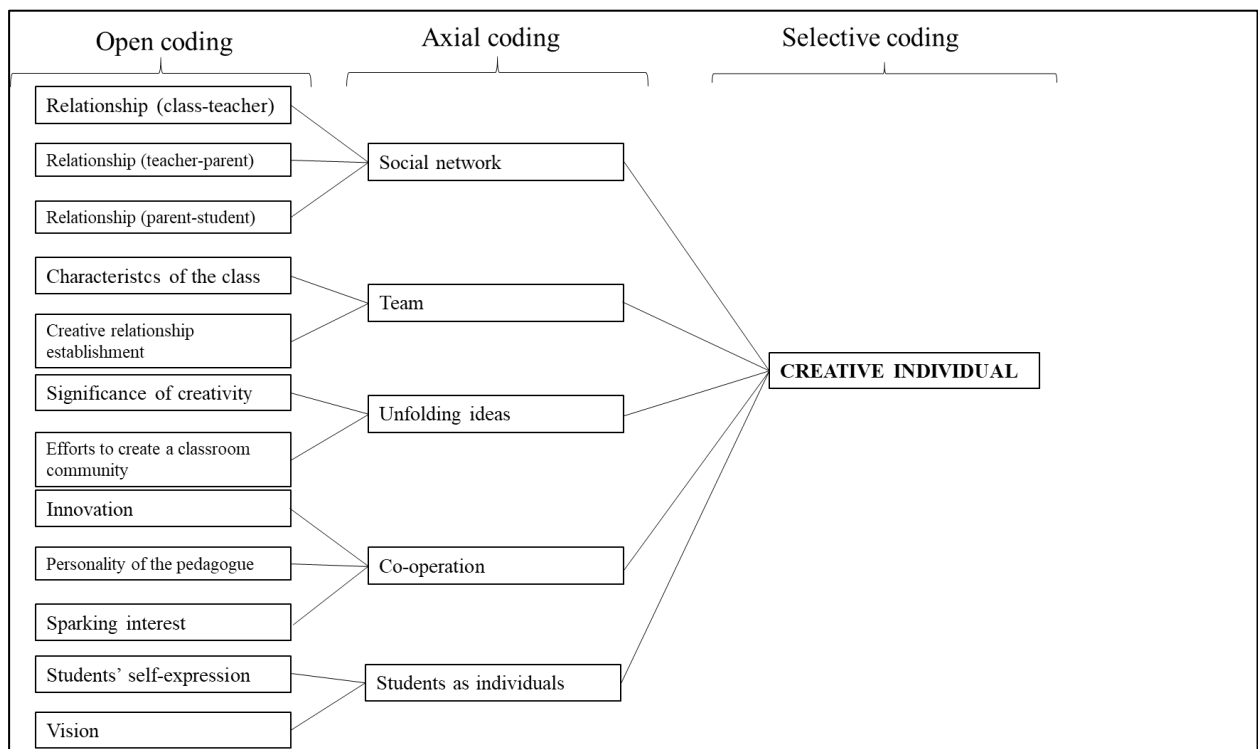
8.4.1 Bács-Kiskun County, Kalocsa

In-depth interview

The data collection process of the qualitative research started with an in-depth interview at each location, whose primary goal was an exploration, as it was formulated in the chapter on methodology, the examination of relationships, existing problems and the presence of soft skills via creativity. Conversations were conducted with two pedagogues in Kalocsa I often quote their words during the analysis. They both have an intensive relationship with the examined class. This relationship is driven by the phenomenon *“we laugh together, we cry together”*. There is also a basically optimal relation with parents: *“I have managed to establish good relationships with both the children and the parents”*. When they had to define the class they used the expression *“developing team spirit”*. According to them it is a very active community where the conduct of students is sometimes problematic, but *“if there is trouble they are able to co-operate”*, and in addition, they express their individual opinions, but this primarily happens when the pedagogue asks them to do so. They cannot compete with elite schools in the town because of the poor infrastructure but they try to compensate with the methodology. Group work is typical, but it is mainly carried out in a structured, controlled framework with specifically defined tasks. They consider the multi-level experience of creativity to be

indispensable and they urge the creation of more opportunities to express individual ideas in education, but according to them pedagogues “*must work terribly much*” to achieve this. The analysis of the interview transcript was carried out according to Strauss and Corbin’s coding logic at three levels (D. Horváth & Mitev, 2015), where the importance of individual ideas was defined as a key category as a result of the analysis. The vision is negative, they predict that individual creativity will cease to exist due to the school system, at the same time they urge the integration of the creative view into everyday life which can reverse this process. The details of the coding are summarised in figures (one for each location), then the coding systems of the 24 locations are unified during the summary of the research results, based on which well-founded answers can be given to the research questions.

Figure 9: Code list of the pedagogue in-depth interview– Kalocsa



Source: Own edition based on the analysis of the in-depth interview transcript

Labelling was done when reading the interview transcripts, then categories were formed from the related elements during the open coding. I defined the 5 interrelated conceptual systems in the axial coding phase, which capture the essence of the interview. The key category is therefore the concept of the creative individual who is oppressed by the existing educational system, at the same time pedagogues can maintain and develop the uniqueness and creativity of individuals via co-operation-based group works if they invest time and energy into it, taking advantage of the unity of the class.

Participatory observation

Participatory observation was realised with respect to the aspects described in the chapter on methodology. Results experienced during the observation are revealed to readers by the self-reflections of two researchers at each location. One of the reflections was written by myself,, from the point of view of the mentor, the leader and co-ordinator of the research who is also an active and a passive participant of the research, while the other reflection enriched the analysis with the thoughts of a second researcher playing the role of the observer who escorted me to all locations. As a reminder, observation aspects are therefore as follows: (1): listening to the presentation, (2): number and nature of the raised questions, (3): independent task solving process, (4): conduct, (5): independence, (6): conflict situations, (7): positive solutions, (8): attitude of students towards results, (9): the produced result/product.

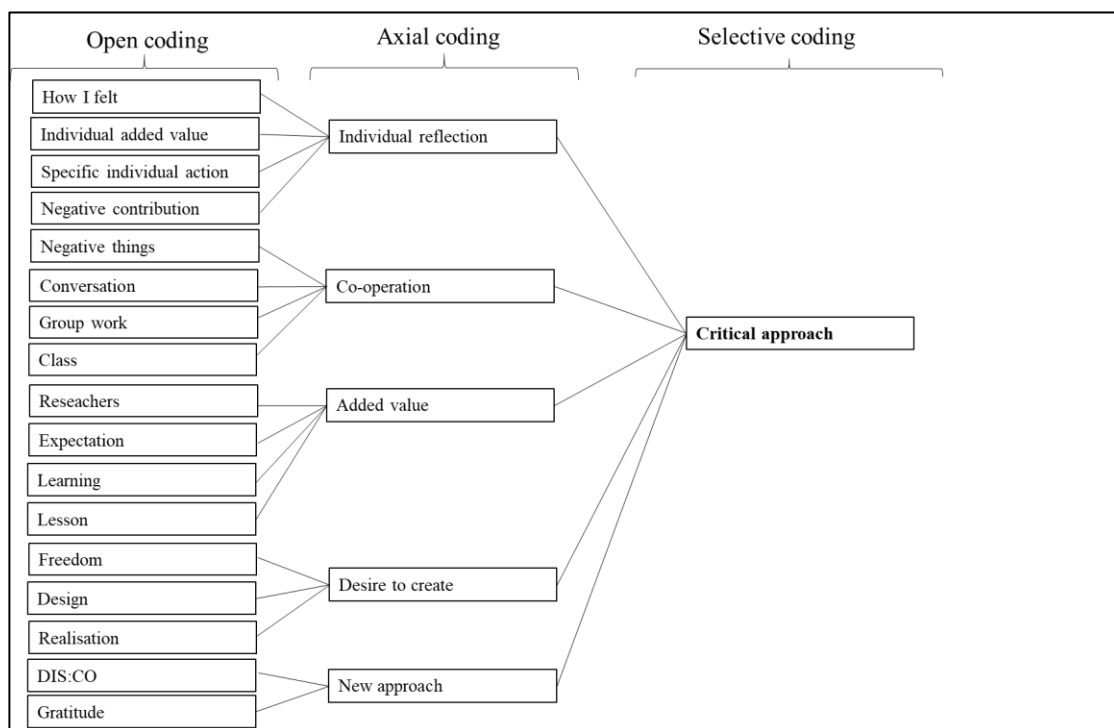
The class welcomed me kindly and with interest. They were listening to the presentation carefully (1), they answered questions, but did not ask any questions themselves (2). They were following the events in amazement, but they started squirming around in the second half of the presentation. This was the first indication that theoretical presentation should be shortened and made compact a little in the future and that a game must be inserted between the warm-up activities of the session in order that a relaxed atmosphere can be created sooner. Also, we need to achieve a much smaller research-student distance for the creation of this atmosphere to get as far as possible from the ordinary hierarchical teacher-student relationship.

In the first part, when they had to think about the problems in the environment of their home, they were seemingly thinking, but then it turned out that most of them did not have any specific idea. This is in line with the phenomenon revealed by their pedagogues. The work in small groups proceeded relatively well, although there were behavioural problems (4). They asked everything, really everything (if they can turn the paper over, if they can write with pen) and raised their hands before commenting anything, independence was not typical (5). They were talking to me all the time instead of their classmates. Indeed, their classroom community was not totally ideal, they were hurting and mocking each other in several cases. They were unable to organise themselves and perform tasks (3). 2-3 children finally undertook to take the lead and it was they who contributed most to the result. The rest of them accepted this, they did not get into an argument. (6). It was felt that they got very tired in the second half of the workshop. I had to be present actively. As soon as I stopped mentoring the process we did not progress. (5). They understood the significance of design, that they had created something (8). What they finally created was a rainwater tank at school (9) they would water the newly planted

trees from this rainwater. Project managers were members of the class, they were responsible for their own residential area. Plant! Collect! Do! Towards the end of the workshop their behaviour rapidly worsened, as their attention was not so active, however, their enthusiasm could be observed for a moment, a slight flow that they could really implement this project. Reflection writing undoubtedly recharged them, as if they had been a little more enthusiastic again, they were under control, they received more precise tasks which was already a less unfamiliar terrain for them, despite the dubious, uncertain wording of the tasks.

Reflection analysis

Figure 10: Code list of student reflections – Kalocsa



Source: Own edition based on the analysis of student reflections

The analysis of student reflections also started with the open coding logic, whereby the most important categories were identified. Codes are clearly visible in the summary figure, however, it is worth highlighting that participating students are critical of both their classmates and themselves. This was also confirmed by pedagogues during the in-depth interviews. They recognise factors hindering co-operation, however, they do not have the ability to resolve this problem between them. Consequently, the problem is realised, but they are not capable of resolving it. They require group work (“my favourite thing was group work”), and also class

level conversation (*“I liked that we could talk”*), but skills necessary for co-operation do not make this smooth (*“it is a pity that the class cannot think together”*). The positive qualification of researchers is emphasized during the reflections (*“The researchers were very kind, they could come more often so that we can learn more from them”*), suggesting that the personality of the pedagogue/mentor has a very strong influence, which also confirms what was said in the in-depth interviews with teachers, namely that the invested energy of pedagogues is indispensable. The concept of the desire to create was also given a place during the axial coding, involving the earlier created elements freedom, design and realisation. Here we could conclude during the analysis of reflections that students crave freedom to create (*“I liked that we could almost do what we wanted”*), the realisation of their individual ideas (*“I hope that later, if we grow older we will be able to realise this organisation”*) and that they can be free to design (*“we were thinking of what it should be like and we finally made it”*). They are grateful that they could participate in the workshop, because they had the opportunity to be creative there and to perform a new and innovative creative work, and they could do this within the framework of their school lesson (*“I am very glad I could be here”*, *“it would be very good if there were more events like this”*). Students as individuals together with their critical approach towards themselves and their classmates are in the focus as key categories. They recognised how they hindered joint work, but also what added value they got during the session. The recognition of their own limitations, and the limitations experienced during the co-operation of the class members is already a huge step in itself in expressing a need for development and finding a solution.

8.4.2 Veszprém County, Tapolca

In-depth interview

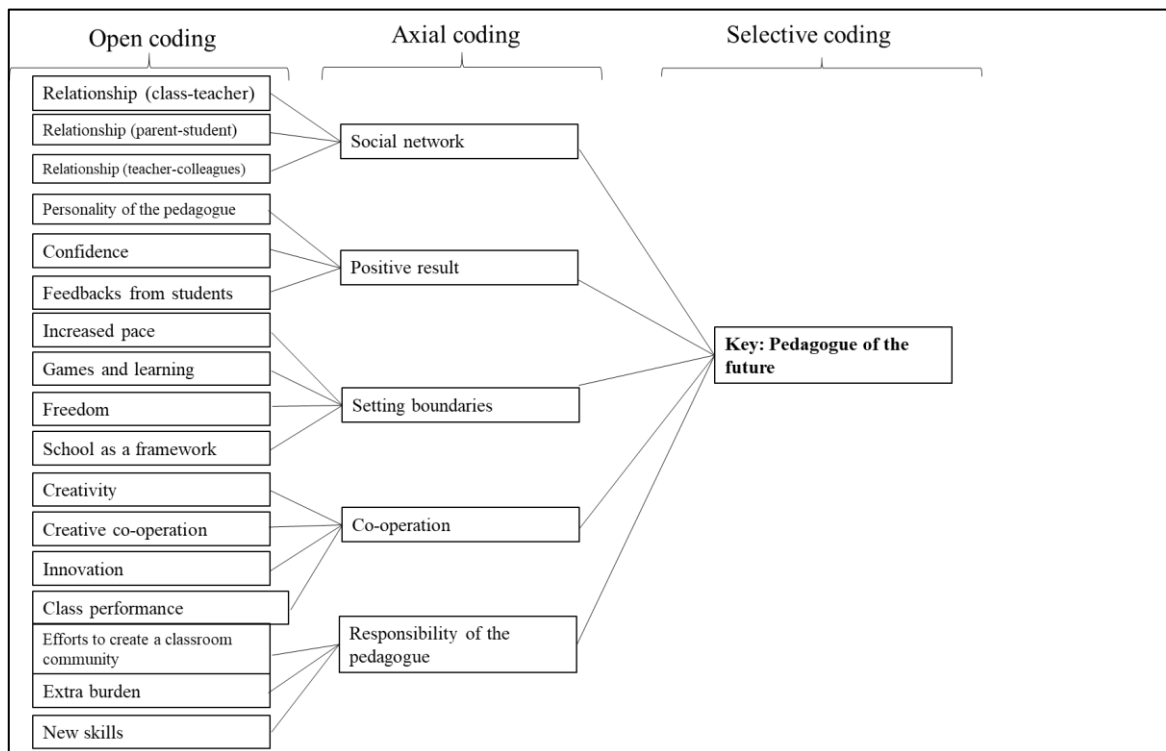
The second location was provided by the Kazinczy Ferenc Member Institution of Bárdos Lajos Primary School of Tapolca. The relationship matrix was presented again during the open coding of the in-depth interview, where the relationship between the homeroom teacher and her colleagues also appeared besides the teacher-student and the student-parent relations. The pedagogue strives to establish good relationships, it is also important for her to feel that she is a part of the community, at the same time she seeks to maintain the hierarchical teacher-student relationship considered to be common: *“I feel that it is very good to belong to a community, and it is very good to lead a community a little, support them on this way, during their school studies”*. In order to deepen her relationship with her class, she strives to be open to other pedagogues, thus she receives information about her students on a more complex platform

(*“And my experience is that I listen to my colleagues, ask for the opinion of the colleague and actually try to get to know them.”*). Confidence is very important due to the personality of the pedagogue, (*“I should be their “mate” in quotation marks they can turn to with anything, with any problem”*), as well as positive feedbacks from students to make sure that her personality successfully meets expectations of students. The interpretation of the class as a community is not relevant yet, there is disunity, girls are a little more tight-knit, but we cannot talk about unity in class.

She interprets freedom in a different way as compared to previous pedagogues (*“But it is not fine if we give them total freedom either. So, everybody has to find a balance between constraints and freedom”*), so she finds it important to set boundaries. On the one hand, this is required by the increasing pace of life, (*“The world has become fast-paced, and children are also revved up, they want to deal with everything, and they want to learn everything, but nothing sticks in their minds”*), on the other hand she does not trust in the transfer of knowledge of innovative methods either.

Changed expectations/ or expectations demanding changes have particular importance for pedagogues in connection with innovation, extra resources for the community (*“Consequently, much more programs must be organised in order for me to get to know them too and in order that the communication and relationship between us can be even better. This is cumbersome for me now. This is harder for me. But this is my responsibility”*), and children with special educational needs as well. In the case of the latter, she also draws attention to the redefinition of the requirements for the pedagogues of the future. (*“I am sure that the whole system has deficiencies in this or the whole system is poorly-constructed”*). Based on what she said, this is the central key motif, from which everything results. The summary coding system made for the analysis of the interview is presented in the figure below.

Figure 11: Code list of the pedagogue in-depth interview – Tapolca



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

Lessons of the sessions realised in Kalocsa were already built into the workshop at the location in Tapolca. After the kind and positive reception now we first sat around with the children, turning to each other, whose incentive effect on co-operation is also confirmed by the literature (M. Galton & Williamson, 2003).

After my short introduction we started with a ball game. The concept of home had to be associated, and the student the ball was passed to gave an answer. This was followed by a presentation with a more conscious explanation of concepts. Initially, attention was very active (1), very good, conscious comments were made (2), however, in the second half of the presentation I felt that enthusiasm waned (4), and based on my experience understanding also decreased here, more difficult concepts were discussed, which pointed out the necessity of the small-scale restructuring of the presentation, and the significance of the incorporation of more interactivity.

After that I randomly formed small groups where creation was carried out very efficiently (5), it was felt, that they had already participated in such a work in small groups, and it was

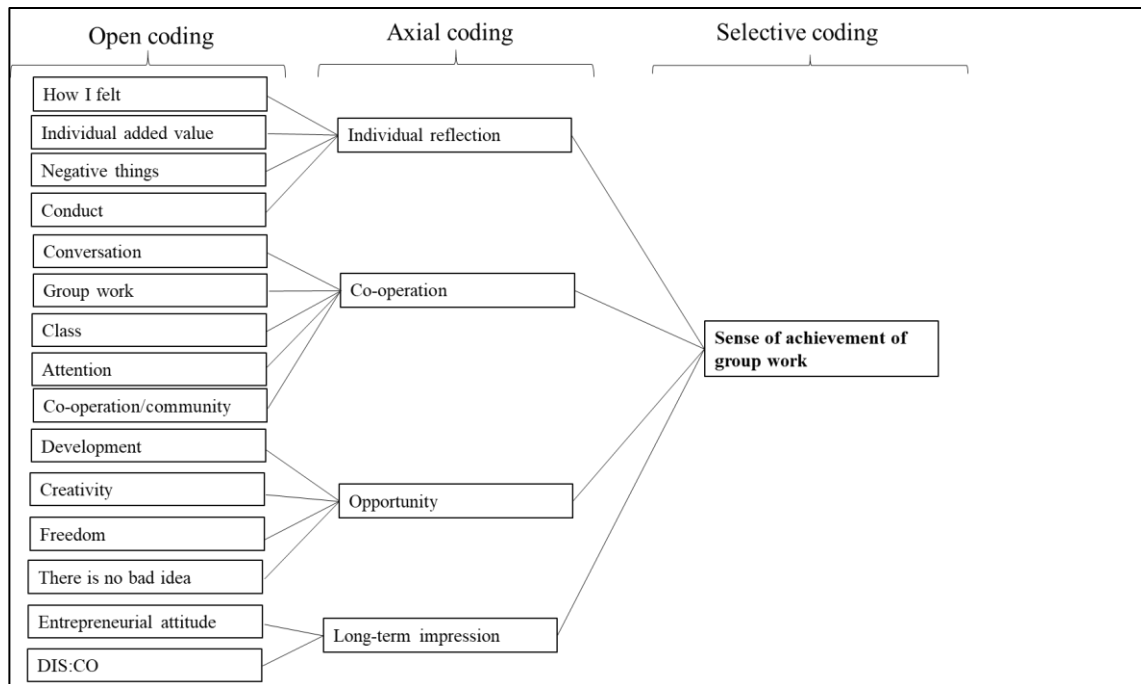
confirmed by the in-depth interview too (*“Miss Erzsi tries to form these groups with a little direction, the formed groups already work fine”*)

The four individual projects were as follows: 1. Self-sufficient farm (with energy from renewable sources), 2. Dog shelter (where children would walk and play with the dogs) there would be a doctor, animals must not be euthanized, 3. Making the environment more beautiful (with decoration), and 4. They would distribute scone and some hot tea for homeless people. Surprisingly, sixth-grade students raise issues like homelessness, helping the poor or the institutionalised system of animal protection. Here we moved on to wikinomics co-operation. We were sitting around (the researcher was also sitting in the circle) and they started talking. Initially, everybody turned to me while talking, but then they started talking to each other (7). They hushed each other up (6), then they voted and finally they decided to create one project out of the 4. In parallel with this, I, as a researcher physically left the circle, but children kept raising their hands, when they wanted to say something. After making the decision to form one idea out of the 4 projects, they retreated (8,9). They became fussy, distraction began to prevail. We named the idea “Farm project” (9) with great difficulty, but after that they could not really resolve more tasks, which is basically understandable after 2.5 hours. Nevertheless, it is an interesting experience, that while they worked together in small groups really well, they became hesitant when they should have made responsible decisions and in most cases they expected the solution from the “adult”. This highlights that children should avoid normal school situations and face tasks and thought experiments like these more often. It is interesting that despite the more traditional teacher-student relationship approach represented by their homeroom teacher, children addressed me informally which can be explained by the novel, casual situation.

They were happy to write into my memory book (as a student reflection), and this task was already a little easier for them, it was a more familiar situation, just as I experienced it in Kalocsa too.

Reflection analysis

Figure 12: Code list of student reflections – Tapolca



Source: Own edition based on the analysis of student reflections

During the coding and then the analysis of reflections the most visible results I would highlight from the summary code list shown in the figure are group and group work as unity and more or less success, with the critical attitude (“we worked a little badly, but we worked”), that they recognised the necessity of and the opportunity for development. (“The class could work together as a group, although sometimes stupid ideas arose too”, “We mostly managed to work together, but we will be able to do it better over time”). Group work is undoubtedly familiar to them (“the thing I liked most was when we had to work together in groups”), during which they are given the opportunity to talk, and have social interactions (“I liked when we talked”), which may lead to the strengthening of the community (“we collaborated pretty well”) in the long term. The success of the result produced in small groups outweighed the less productive outcome of the wkinomics co-operation in the minds of students (“we worked together very well, because we resolved the task”, “The class worked together well during the task, because many good ideas and thoughts arose this way”).

A particularly interesting information during the coding was the appearance of the entrepreneurial attitude as a result of the workshop, whereby the business aspects of the produced product could also be observed in the reflections (“The thing I liked most was

company establishment”, “*The majority of the class worked much to convert a good idea into a very, very good enterprise*”). The thoughts of students shed light on a recognised responsibility, resulting in an increased seriousness and value of the task in their eyes, and a greater role of imagination, creativity and flow experience (“*We tried to unleash our imagination*”, “*I liked the so many good ideas the others said and the joy I saw on their faces*”).

8.4.3 Pest County, Nagykőrös

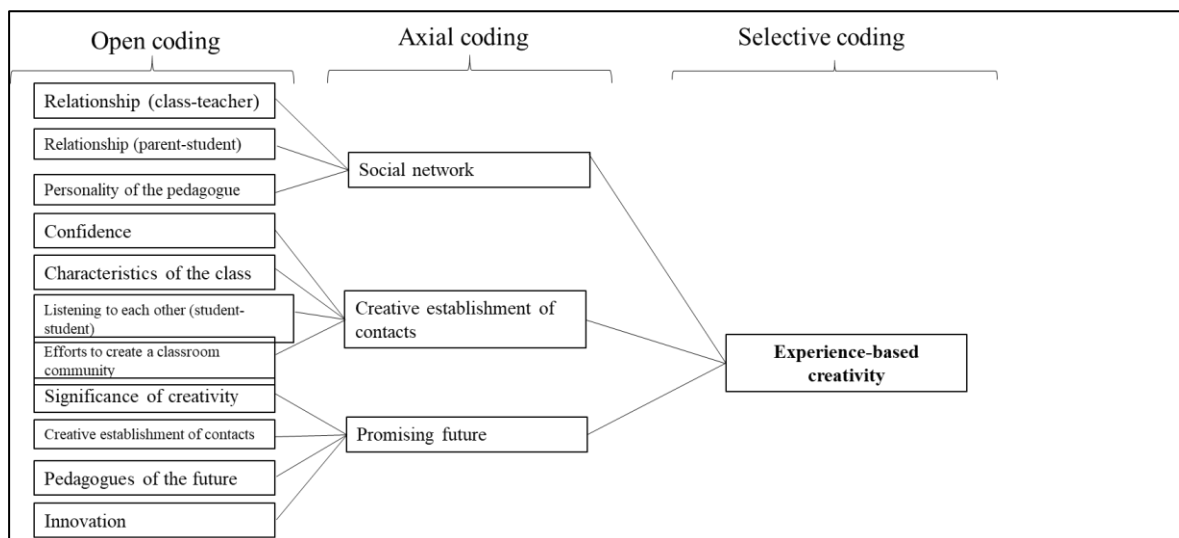
In-depth interview

The in depth-interview in Nagykőrös was conducted with a particularly open-minded and enthusiastic pedagogue who is ambitious and the examined class is the first class where she acts as a homeroom teacher as well. She feels that she is a part of the class, her relationship with the community is determined as a real team member rather than a leader (“*I have a good time with them, I think they would say the same, that I am happy and informal with them*”). She seizes every opportunity to involve innovative methods, she thinks this is future. The improvement of poor institutional infrastructure may contribute to the ideal educational model, (“*here, school infrastructure needs to be improved, but the teaching standards do not depend on it. We could have more and better, but we always have to make do with what we have*”), however, if pedagogues have a creative attitude it can already be enough for a progressive educational system (“*It is very important, almost one of the most important things in teaching. To meet new requirements. It may be important because students come here with different needs every year, and we have to be creative to be able to apply new methods*”). She believes that the key category is the unification of the innovative, creative attitude of young pedagogues (“*But, if we want to use only the existing methods, creativity is very good for them too, because it provides a new perspective on them. Creativity is definitely important, we have to use it*”) and the decades-long experience of the professionally impeccable teachers (“*But I think that we, young people also have to be open to them, because they have loads of experience*”).

The relationship matrix is similar here, it seems there is a general phenomenon, that the homeroom teacher herself spends little time with her class, which she tries to compensate with the organisation of leisure activities in order to strengthen classroom community. A new dimension and code category appears, students listening to each other (“*it looks like it is very hard for them to listen to each other during homeroom. Fight. In upper primary school they do not really care what happens to the other student*”). The pedagogue told me that the classroom community still had room for improvement meaning that their ability to listen to each other

should be developed (“The community should still be developed, as regards the relationship between students”). In addition to this, despite students often work in groups in everyday life (“Most of my colleagues had them work in groups at lower primary school too, therefore they are familiar with this”), the expression of their opinion, self-expression is not typical, they have much potential for development (“This is not typical. This independent opinion formation ... they have difficulty expressing themselves. Emotional intelligence is difficult.”). The coding system of the in-depth interview can be summarised according to the figure below.

Figure 13: Code list of the pedagogue in-depth interview – Nagykőrös



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The venue of the workshop in Nagykőrös is a perfectly normal primary school, its exterior is a little deteriorated, indeed it is time to do the renovation mentioned by the pedagogue, but anyway a spacious, bright, big courtyard can be found in the middle of the school. This is considered to be a less good school in Nagykőrös, it is not an “elite school”, furthermore the foster care institution is also in this district, thus many disadvantaged and foster children go to this school. There are students within the class who need more attention, because they live day-by-day.

We started the workshop on time, children were kind and inclusive. Mónika, the homeroom teacher was interested, she participated in the workshop from the beginning to the end as an observer, which proved her innovative spirit and openness to new methods. It was already a sign that children threw the ball outside the circle to her during the ball game. This

confirmed what Mónica had said, namely that they love and accept her and she is really a part of the community.

They were listening during the presentation (1), they were active as compared to other classes and they commented on the topic (2). Ideas were formed during the work in small groups, but it was relatively hard. Children had a good time, they were talking quietly, but they typically got distracted from the task (4), the mentioned practice and routine in connection with group work appeared to a lesser degree.

Learning from the example of the former sessions I took a very short break before the joint task and after that we sat in a big circle in order for them to resolve the task together. The wikinomics co-operation began. As I stepped out of the circle, children closed it. This is the first time when it can definitely be said that roles in the group were established. There was a moderator who made every effort to reach an agreement. There was no hindering person, everybody co-operated. They were never disrespectful to each other, they did not laugh at one other and in most cases they listened to each other's ideas. They succeeded in performing the task totally independently (3), in which there was always somebody who took up the role of leader. Their work was harmonious all the time, and they never asked for help. When a little girl said something and there was not enough silence, boys hushed the others. They disciplined each other (6): "Only one of us should talk at a time", "how many people are talking again?", "Let Dóri speak", "Everybody be quiet". The moderator raised the question: "has anybody got any ideas?" They agreed that in the case of several ideas they would tell me the one they liked the most (7) (this was only partially achieved, they typically told me all their ideas). Righteousness appeared: "we listen to everybody and in the end there will be a voting", "There is one rule: 1 person may vote for a maximum of 2 persons!" If somebody said something stupid they did not laugh at each other. There was a little boy who was very nervous, he had trouble speaking. Instead of laughing at him his mates told him: "Take a deep breath!". This contradicts what was said during the interview in connection with listening to each other and disinterest. This task contributed to the attention they paid to each other. At the end of the session they applauded and cheered themselves, they considered the result to be valuable, a sense of achievement, a flow experience was realised (8). The created ideas were as follows:

1. Workers should work manually in factories, not with machines, thereby reducing energy consumption, homeless people should also be employed, there should be more electric cars.
2. Food should be taken to Africa ("rich countries would send supply packages, clothes, medical stuff")

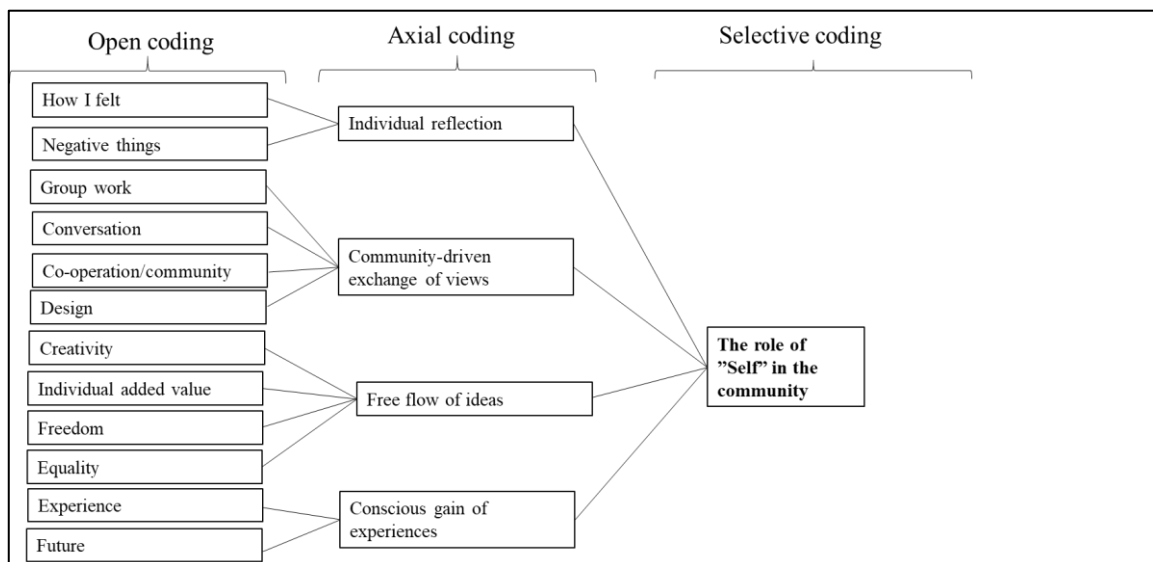
3. Irrigation system to the town from rainwater and creeks.

When they were ready they turned to me, they said they were ready and presented their idea (9). The project was named Making the world more beautiful, which was also selected by voting.

Reflection analysis

Reflection analysis suggested that students were either very laconic in written communication or they were exhausted during the session, because very straightforward, concise reflections were written with a surprisingly clear coding system.

Figure 14: Code list of student reflections – Nagykőrös



Source: Own edition based on the analysis of student reflections

They gave positive feedbacks on how they felt about the duration of the session without exception. The co-operation of the community, group work and open, free conversation in the community were of crucial importance for them (“I liked that we could talk about big problems of humanity”, “I liked very much when we were talking in a group”, “These lessons were very good because everybody could interrupt the speech of the others”). It is important, that they imagine this on an equal basis (“I liked when we voted on who has got the best plan”) which confirms what I experienced during the participatory observation and at the session. Besides co-operation on an equal footing (“we had to agree on our decisions”), - sometimes as a complement to it – the added value of the ‘self’, that is how individuals contribute to the product produced together clearly appears, thus justifying their role within the group (“I was thinking

and I gave good ideas”, “I helped resolve the problem”). This was predominantly reflected in all reflections, thus it is no coincidence that this formed the key category most intensively during the analysis.

They think they can acquire knowledge during learning combined with fun, which they also experienced in practice during the designcommunication workshop (*“I had a good time, because I had fun with my friends and my classmates”, “I liked when we were thinking for the future while having fun”*).

8.4.4 Budapest, Újpest

During the session of Budapest the homeroom teacher participating in the research actively supports her students in getting familiar with as many new methodologies and forms of learning as possible and participating in as many programs as possible with her extremely innovative approach and actions (*we had a number of programs last year for which both children and parents were grateful. Most of them were like this. I kept my eyes open and we agreed to do what was free of charge*). This kind of proactive approach is based on one of the pillars of designcommunication and it reveals the phenomenon of the creative establishment of contacts (A. Cosovan & Horváth, 2016) in practice. She redefines the traditional school framework and routine tasks and as a pedagogue helping the student government she does not only add colour to school lessons but she also organises programs strengthening the bonds within the class, and the decoration of the classroom is also carried out as a result a community design work and a team building. She basically leads them (*“then we put things together, I told them what to do, they wrote it on it, we laminated it”*), as a leader (*“They drew out of a hat who will get into their group. I am watching them for the time being. It is obvious, that there are some students who are popular, the other love them, but they are incapable of leading the group. I have more to do here.”*), she participates in processes, but she tries to give children creative freedom (*“I leave them to themselves, saying: sit together and do it!”*).

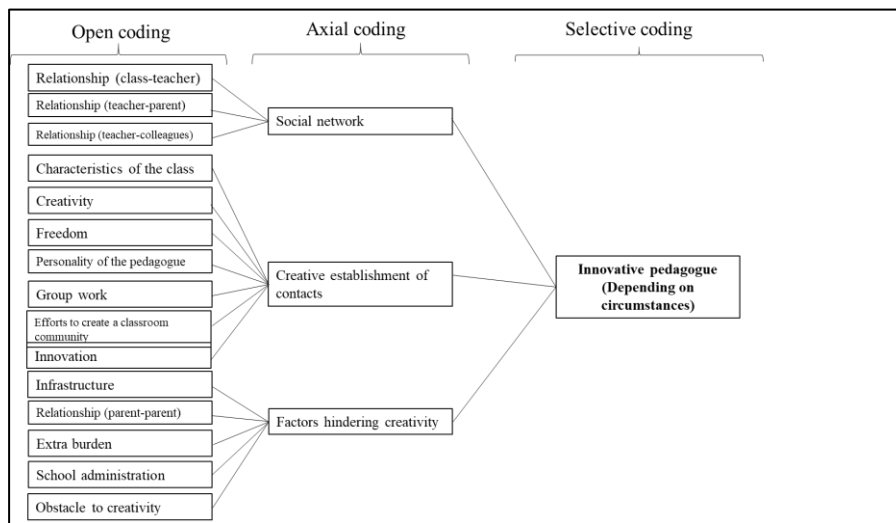
However, innovative attitude is not enough, a supportive environment is also necessary (Sahlberg, 2009). This support is provided by her colleagues (*“On the other hand, my colleagues are fantastic, this is very important, to be able to co-operate.”*). However, the lack of infrastructure is a hindering factor (*“It would be nice if substantial conditions were met, that is to say if we adapted to this digital world.”, “But if we had an interactive whiteboard in this classroom, it would be a qualitative leap, because we have plenty of interactive materials, so I could use it.”*). In addition to this, another two circumstances that may cause difficulties were also mentioned and recorded as new code categories, in connection with the direct school

administration (*“The other thing is, well, we need a democratic leader. Our leader is not democratic. He is quite autocratic.”*) and the educational policy situation (*“We are constantly against “US” now. At least, I think that the main aim of the educational policy is to educate robots and people executing everything whose independent thinking is zero”*). Among other things, the factors above are barriers to creativity (*“They have lots of energy and we could raise fantastic people, but we suppress them.”*), instead of being the engine of creativity which is necessary among others: *“to educate thinking people, who will be able to run this country and the educational policy a little smarter.”* In parallel with this, pedagogue colleagues shoulder an infinite administrative burden, therefore sometimes even ordinary tasks present challenges, not to mention innovative efforts which go beyond these tasks (*“We have been very busy during the first three week, and we have not done any worthwhile things. Because we have so many administrative tasks. Our class schedule is still taking shape. It is very hard”*).

In the context of social network much emphasis is placed on parents in the case of this research location. This also refers to parent-child relationships and relationships between parents (*“there were many wiseacre parents here, who influenced other parents”*). This was also a new code category, because this is about the manipulation of indirect actors who occasionally try to make decisions contrary to the opinion of the pedagogue through children (*“I struggled a lot last year. There were problems with parents, not with children. They were thinking about things differently and they told children this from the background. I had to break through many barriers.”*) The biggest problem in connection with the situation recognised here is that it is also an obstacle in education which (may) hinder development of children.

The code tree summarising the code categories highlighted above is depicted as follows.

Figure 15: Code list of the pedagogue in-depth interview – Budapest



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

My putative observations in connection with the homeroom teacher during the in-depth interview, were confirmed during the workshop. The basically kind, enthusiastic innovative, modern, very active, whole-souled pedagogue – besides her many good characteristics - tries to control students in several cases. Her professional knowledge, innovative ideas and their realisation are remarkable, however, there was a little contradiction between the things she said at the interview and her behaviour with children. She underlined during the interview that she considered it indispensable that children should learn how to think independently and she strived for this in her job. In contrast, during the workshop she did not wait for children to arrange themselves in a one boy, one girl order, but instead she thought that the solution was to say the name of somebody and “force” him/her to perform the task. This approach characterises her whole work. Her attitude shows that if she figures something out, she would also like children to perform the task the way she thought. In the meantime she may give opportunity for them to think, but not independently! She guides their thoughts on the way she imagined and this was reflected in the solution of the task too. She was present in the workshop almost from the beginning to the end and I had to ask her not to control children in order for the result not to be distorted. This was an important lesson for later sessions when I let pedagogues stay at the workshop on the condition that they assured me that they would be only observers and would not influence processes, because this would distort the results of the research.

Students were listening to the presentation (1), they commented it and if I asked them a question they answered it actively (2). The session of the children included morning break

which took place in the classroom, but threw them off a little, thus this was also an element I consciously paid attention to later. There were very good topics in small groups. With great difficulty the conversation began, we proceeded relatively well, projects were developed nicely (3), there were two groups, who were talking much about the topics which were as follows: More quality time spent with the family instead of gadgets, Energy saving and Good relationships with neighbours, provision of help, if necessary.

The problem actually started when they had to work in a big group. When they were about to jointly decide how they wanted to undertake to make their home better, the class was overwhelmed by total disarray and chaos. Micro-conversations started which never ended. There were always individual attempts, but due to the failure (nobody listened to each other) by the end of the “game” everybody resigned themselves and accepted the first solution they heard to end the chaos. The crisis situation was confirmed by the fact that they turned outward from the circle and looked at me asking for help with their gaze several times (5). Boys were not willing to sit next to the girls, as this existing conflict was mentioned by the homeroom teacher during the interview. The transfer of ideas was not realised, 1-1 stray pieces of information were lost in the group. They had to be interrupted, disciplined and controlled them. Then, two little girls took control with great difficulty. “Groups should stand up and tell their ideas that way.” “Be quiet!”

They felt they did not listen to each other (6), they did not progress and this annoyed many of them. A little boy got angry, because he could not hear the communication. Everybody was fidgeting. They laughed at each other. “stop fidgeting”, “hush now”. They were running out of patience, they felt that they should create something, but they absolutely could not realise it together (6). “Let us decide it please!”, “it is of no use shouting”. Finally, some little girls combined two ideas in a small group: picking up trash and planting trees together with neighbours. The project was called joint environmental protection (9), whose elements included picking up trash every Saturday and planting trees every Wednesday. People who litter will pay a fine.

Overall, girls were more creative, although boys were also very active in small groups. Consequently, the idea was formed with great difficulty, but it was much more a task solution in small groups, than a wikinomics, class-level co-operation.

Here it was also clearly visible that they were good at performing tasks in small groups, because they already had experience in this, however, it was felt that they got lost without control. Independent problem-solving was not typical, their creativity could not unfold, because

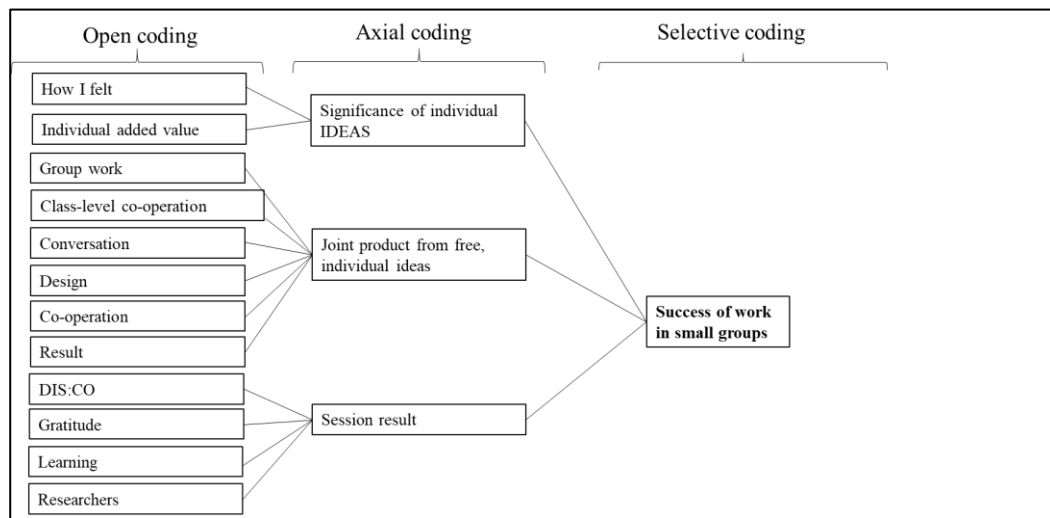
the communication problem between them and the fact that the free flow of their thoughts is not ensured in their daily life inhibit the process.

Reflection analysis

In the light of the results of the in-depth interview and the participatory observation, the information received during the analysis of student reflections was surprising. Instead of the usual straightforward expressions student reflections described their experiences during the workshop for relatively long time. They did not feel like a failure the lack of wikinomics co-operation at all, at the same time they realised that there were problems in class-level co-operation (*“When the whole class started discussing which one can be the best, there was a little debate”*). However, the recognition of the problem did not intend to fix them. It was more like a feedback that they did not like this less successful co-operation process because of this problem (*“What I did not like so much was the class-level discussion, because everybody was talking and we could not concentrate well”*, *“what I did not like so much was when we were sitting in a circle and we had to discuss environmental protection”*). Great emphasis was put on the demonstration of individual added value (*“I had and I have many ideas and I told them all of them.”*, *“I tried my best during this work and I think I was active.”*, *“I played some role in everything, because I commented on everything”*). It was also important because they were proud of the result and they wanted to feel that they had contributed to its production, it was to their merits too (*“I also liked that I took part in the end result and I could help, and this project was made of my idea as well.”*).

Beyond a reasonable doubt, they liked the work in small groups the most, they already felt more comfortable there, they had experience in that and they routinely handled the situation. This also points out that well-known situations promote co-operation processes (*“The discussion in a group of four was better, because we could listen to each other better”*, *“It was nice when we discussed in smaller groups what we could do for our home.”*). They underlined as a positive thing that this group work gave them freedom and allowed them to think without any control, and they enjoyed this (*“It was nice that everybody contributed to it with their **own** ideas”*, *‘so to speak, we designed and invented things **together**’*, *“I had a very good time because we had to be in the group and generate and discuss ideas **by ourselves**”*)

Figure 16: Code list of student reflections – Budapest



Source: Own edition based on the analysis of student reflections

8.4.5 Heves County, Eger

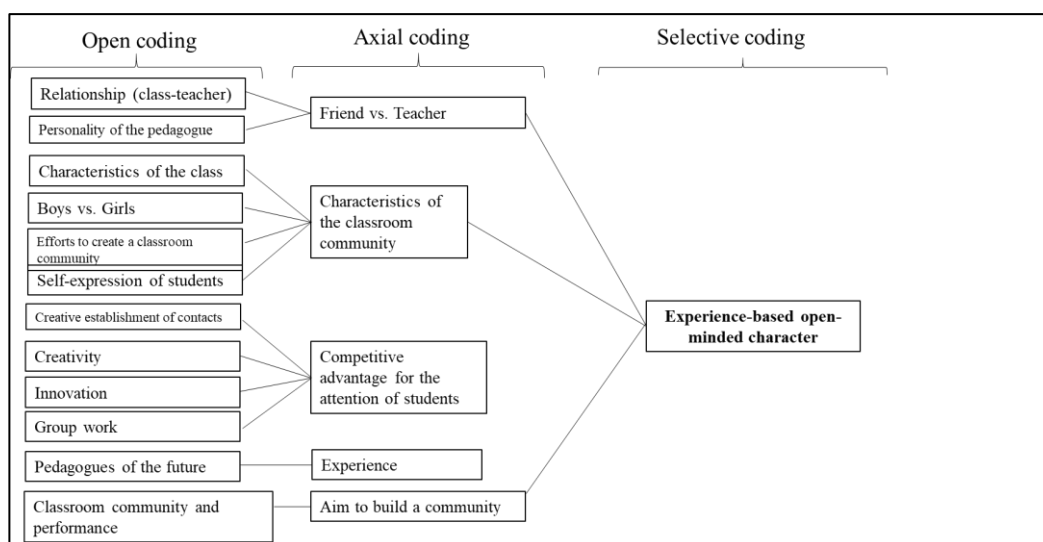
In-depth interview

The class I examined in Eger was the first class whose homeroom teacher was a man. The in-depth interview highlighted two things as its most important results. One of them is the necessity and importance of the experience of the pedagogue. The experience which is measured by openness and the time spent with children instead of years (*“It is important to approach education from as many angles as possible. This may be the key to the solution. To try different ways. This requires experience. Experience does not necessarily come with age. Some people gain as much experience in one year as others in five years. If somebody spends much time among children, he gains much experience.”*). The other key factor is competition. Competition for the attention of children, against the impulse of digital world. There is only one chance in this competition: creativity (*“We currently have to compete with video games and smartphones in order to get the attention of children saying: hello, we are also here and we would like to tell you something. And this is tough. If we do not try to be creative, children will not listen to us. Never. Because they are thinking about those things. And we can only achieve this with creativity in the current state of education.”*) The homeroom teacher can be characterised by a creative attitude. He provides students with freedom to create, however, he strives to maintain a balance between new wave and traditional, hierarchical educational methods (*“I like letting my thoughts soar. I do not think that old pedantic teaching is good. I am trying to introduce new methods, but I also like frontal work in class. I am interested in*

everything which may give something extra to children. I love everything which is different or new.”)

It is important to mention an interesting thing, the conflict between boys and girls, which does not help strengthen the already unstable, not fully formed classroom community but which at the same time is a characteristic of their age group, which is also handled by the pedagogue day-by-day at the level of the community. (“Boys and girls: they can be characterised by total disunity. They are fully separated. They are not open to each other.”). However, in this respect, the strengthening of the community and the improvement of co-operation are not negligible, because they greatly contribute to good performance (“If there is a good classroom community, there will be a more pleasant atmosphere during the lesson and children will get more things stuck in their heads. They can concentrate and perform different tasks better together.”).

Figure 17: Code list of the pedagogue in-depth interview – Eger



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The school is a sympathetic institution in the suburbs, we were received at a tidy place. It could be seen that students like their homeroom teacher very much, they were joking with each other, he approached them in a good humour, cheerfully. The reception was absolutely positive, children were curious and willing. They looked like they were open to novelty and they were also happy for us. Most of them handled well the kind and informal start, maybe one or two students had difficulty in addressing me informally, but they were all very polite and attentive. I felt that the mood of the person they were talking to / talking to them was very important for them, because it easily rubbed off on them.

I noticed during the presentation of the DIS:CO how much they look up to the 8-year-old Iza, who had already designed a logo. It was amusing to see their faces, their dropped jaws and here the accompanying “woooooow”-s. In connection with this, I would also mention that I strongly felt that they craved recognition that they cared about other people’s opinions (1).

They were basically listening to the presentation carefully (1), this time I involved them asking them questions more often than on previous occasions, I strived for interactivity of a higher degree. They had some time before the work in small groups to have mid-morning snack, they sometimes need to take a little break to get energized. Work started hard in small groups, then when they got into it, pretty good ideas were formed and they specifically talked about the topic (3). The uproar in the classroom was bigger than usual (4), this may be attributed to the fact that this class consisted of twice as many children as former classes. Topics raised in small groups: Environmental pollution, what can we do? Protection of animal species, Movement of focusing on the world around us instead of cigarette and telephone, Plastic(bag)-free world.

There was also a 2-3-minute break after the work in small groups, then they worked together at the wikinomics co-operation level. I told them what the task was and stepped out of the circle physically as well, because I wanted them to feel that this was their terrain and they could only count on each other. First I thought this was going to be tough because small groups also got off to a rocky start. But then there was a boy who immediately took up the role of the moderator and the roles of the groups were outlined in a second (5): “I talk and you be quiet”, “Our idea was to...”, “everybody say their idea...” When teams told him their ideas, the boy who took up the role of the moderator asked if there was somebody who had his/her own idea in addition to those discussed in the groups! “it can be a new idea too”

It could be observed that they interpreted the task precisely, they did not really ask questions or at least fewer than during previous workshops. There was a little girl who told us her idea in detail. Sometimes they giggled a little at each other’s ideas but they were not mean to each other. They disciplined one another during the presentation too and they did not stop doing this later.

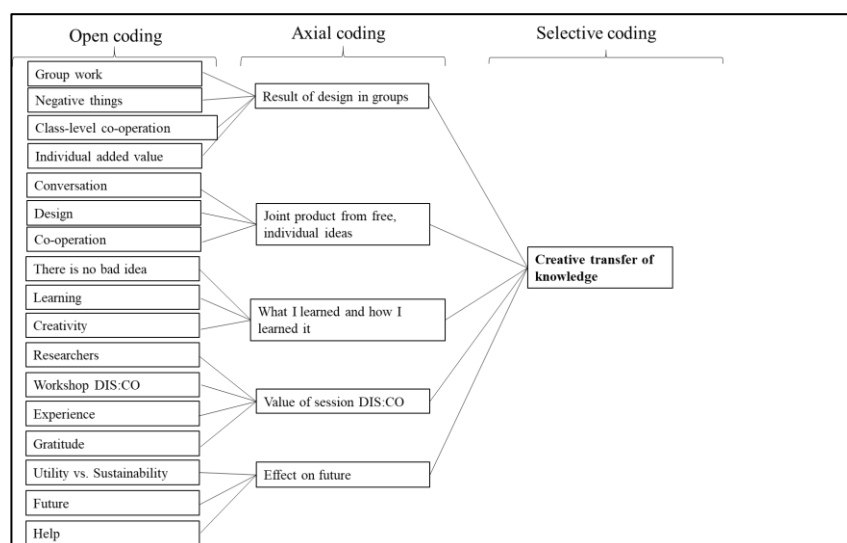
They messed and quarrelled with each other (6). Indeed, a meaningful debate-dialogue took shape between them, it was felt, what the homeroom teacher had said during the interview, that they studied debate culture within Hungarian lesson. They questioned ideas. They were the first class to realise that they needed an idea they could do for! They were focusing on this: “it should be an idea we can support”, “be quiet now, Miki is talking” Sometimes they acted as police officers: “only one person talks at a time”, “please be patient, lady” – they told each other to listen.

They basically listened to the moderator, but there were children who wanted to lessen her role: “I am also interested what others think” There was a low point towards the end of the workshop, when there were so many comments, observations and doubts in connection with each idea, that they felt they voted for an idea then they convinced each other that it was not fine. It was felt, that more and more children were involved towards the end of the workshop, at the same time they started lose patience. I had to interrupt them a little, carefully distract, focus, and accelerate them which triggered the final phase: “everybody has to be more flexible”, “we need a shared view”, “we try to consolidate all of them, and then it will ok for everybody”, “the problem is that we have already decided it, but we are still quarrelling”.

Finally, the project was outlined, they presented the result (9), they produced, which was about a plastic-free world. They would start by banning the use of plastic bags, thus progressing step-by-step towards environmental conservation. As a final thought, I would like to mention a phenomenon (8), which is also a part of the research peripherally, still, which concerns a subject which could form an important part of a research in the future. They tried to find a solution for global problems in the case of both bigger tasks, and I felt from some sentences dropped from their tongue and their facial expression that they had climate anxiety to some degree. Obviously, it is important for them to know about the problems of our world, but some of them may be worried about them. Their attitudes towards things are mixed, sometimes almost totally resigned, saying that “it is of no use telling this to an addict”, while the rest of them say: “if we do not team up, who will?”. Despite of this, they managed to produce a positive result.

Reflection analysis

Figure 18: Code list of student reflections – Eger



Source: Own edition based on the analysis of student reflections

The reflections of the students in Eger clearly confirmed the experiences of the workshop, that this was a very intelligent, extremely well-educated classroom community with a broad vocabulary. Their writing could be characterised by polished wordings and compound sentences. I would like to underline some important and new dimensions besides the figure presenting the code list. One of the very important aspects is learning, the recognition and realisation of the acquisition of knowledge they acquired during the workshop (*“I got to know many new concepts”, “I learned things at this lesson which will not benefit me now, but much later”, “I learned many new things, which were very interesting”*). In parallel with this, the designcommunication workshop itself, the presentation (*“I liked things which were projected on the interactive whiteboard very much, because I learned many new things from them too”*) tasks forming part of the session (*“I liked the interesting and exciting tasks very much”*), and creativity, the driving force of the methodology (*“I had a good time, because I have never heard about this method, but I liked it, because it is based on creativity.”*) were evaluated positively too. They put particular emphasis on the fact that there is no bad answer, nor anxiety, only free creation (*“We could not make mistakes and the tasks were interactive.”, “the best thing was that we could not make mistakes”*). The element closely related to the above is the experience they formulated, with which they were enriched in these three hours (*“I considered it to a good pastime activity, because we could learn many things and I also had fun and we could protect the environment too”, “I hope I will have such an experience in the future again”, “The whole program was very precise and enjoyable, it could be seen how much work had gone into it. Thank you for this experience”*).

The dimension of future appears at 3 levels in the reflections of students. They were aware that this was a part of my doctoral research, and the opportunity to contribute to its result made them feel good: *“We are glad we could help Daniella in her work”, “We could help Daniella in her doctoral thesis”*. The second level is the opportunity to actively, physically contribute to sustainability and the appearance of a growing interest via the sessions: *“I have become interested in these things much more than before”, “I especially liked when we were sitting in small groups and we had to figure out processes contributing to environmental protection”*. The third one is the questioning of the result, the topic, if this makes sense, a philosophical approach in connection with the attitude of humanity (utility vs. Sustainability), which shows how deep thoughts the session revealed in students: *“Plastic bags cannot be banned, because people benefit much from them. I know they contaminate the environment, but I think this is not feasible”, “I do not consider this issue to be important, because half of the 7.5 billion people would not regard it as important, they would not care about it they did not benefit from it”*.

8.4.6 Borsod-Abaúj-Zemplén County, Bodrogkeresztúr

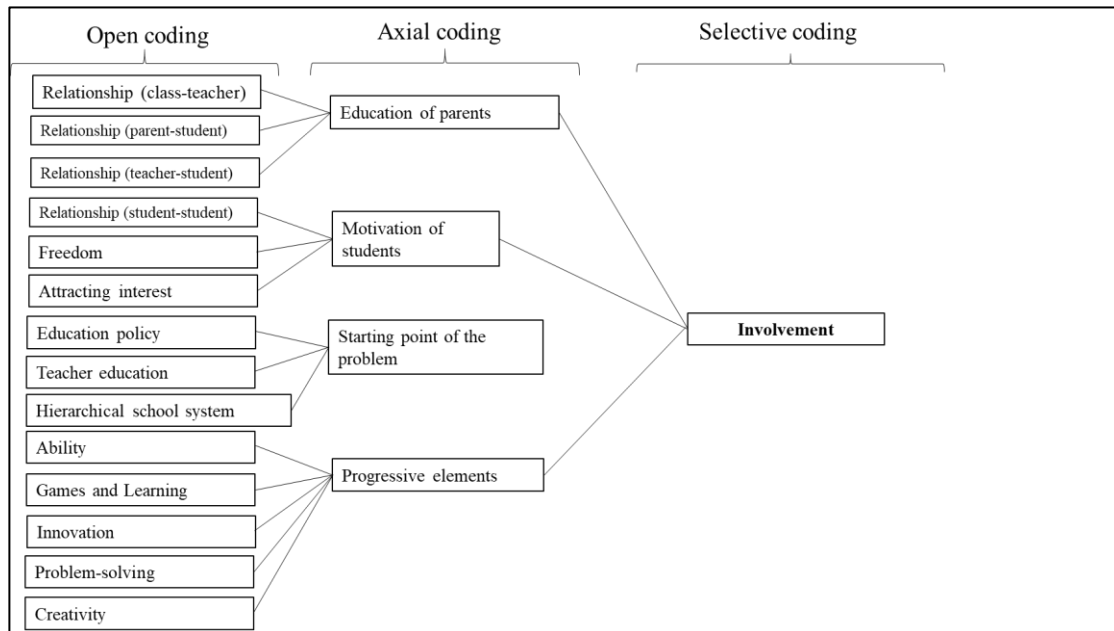
In-depth interview

The pedagogue in Bodrogkeresztúr had a spirited, basically rule-following but very reformer and innovative attitude. Education is more than a mere job for her. (*“I do what my passion is. This is a profession.”*). She applies methodologies supporting the interconnection of games and learning every day (*“I try to apply all kinds of methods and games. They need to have breaks and they do not even notice that they interpret rules together, read and learn strategy games.”*) She thinks that the efficiency of education can be enhanced with problem-based teaching (*“Or there is a problem, and we orient mathematics around it. Let us build a bigger house! And if we think about it: there is also history in it, and music, and maths and physics and chemistry”*), and that the most valuable knowledge for students is acquiring skills (*“It is emphasized that children these days will do a job which does not yet exist. We, pedagogues can teach them professions in a way that we develop skills.”*) This exactly confirms the aims of my thesis and strengthens the methodological basis of designcommunication.

She thinks that the framework for education is not suitable for development, because it is an obstacle to talent promotion (*“Talent promotion and development. These are not resolved today in Hungary, only in rich families where children are taken to private lessons.”*). She also disagrees with the hierarchical educational model (*“the teaching and education that come, let us sit face to face and I am going to present and explain, that is a disaster! That must not be done.”*). According to her, the other problem is teacher education. She questions the preparation of pedagogues of the future (*“There is a beginner young generation. They come, see what is going on and leave two or three years later. On the one hand, because of the salary, on the other hand they are not prepared with sufficiently effective methods. But this should be the responsibility of teacher education. They do not get current, usable, active methods.”*) for a target group which does not follow the rules (*“Children these days take it hard to follow the rules”*), which is increasingly hard to motivate (*“They do not know why they have to study. It is hard to motivate them”*) and whose communication skills are disappointing (*“They have an increasingly poor vocabulary, We went out, I told them to establish contacts, to ask questions. Well, it was miserably.”*), however, they express sharp criticism towards each other and the pedagogue (*“There is harsh criticism towards the other person.”*).

She believes that the solution is the integration of new, design methods and the active involvement of students (“*Education definitely has to be made interactive. Children should become a part of it. I involve them in the creative activity.*”).

Figure 19: Code list of the pedagogue in-depth interview – Bodrogkeresztúr



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The workshop was realised after the in-depth interview, where the heterogeneity the homeroom teacher had talked about in connection with the family background of children could already be felt during the first warm-up task. The presentation was maybe a little longer than usual (1), children had more comments and answered more questions due to the increased interaction (2). It was hard for them to identify themselves as designers, but then when I asked them if they were sure, they started forming ideas about when they became designers in their everyday lives: “we realise a thing we think of” // “I plant onion” // “we are designers when we play with LEGOs” // “when I am capable of doing a thing nobody has realised yet”.

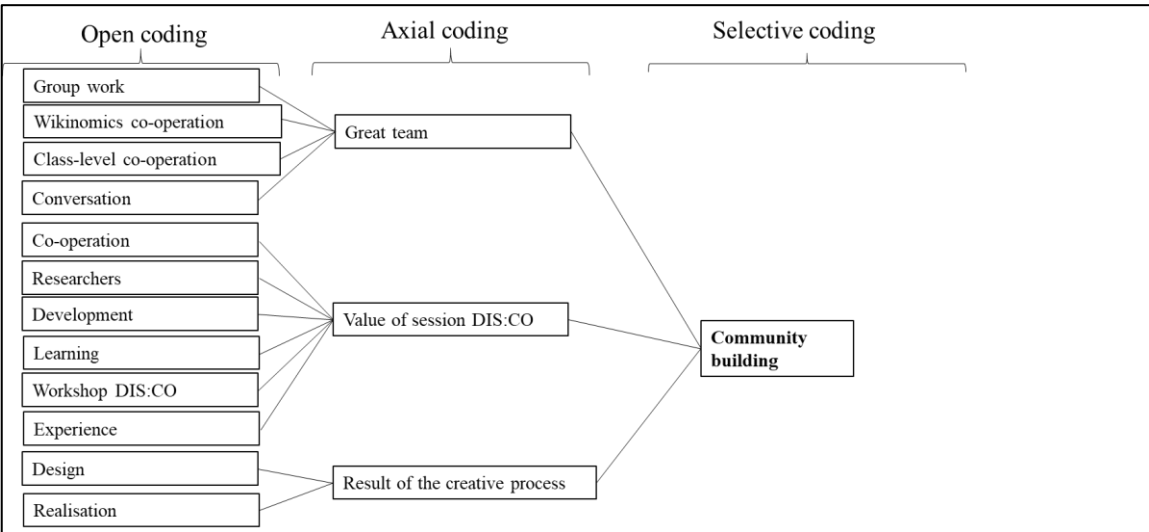
I would define them as a quiet, interesting company, their conduct was okay (4), they could be characterised by active attention. They mentioned school buffet, environmental clean-up within the village and environmental protection in connection with making their home better in small groups. Disruption was typical in two groups (6), which is in line with what the pedagogue had told me: “*As I see it, children who undertake to express their opinion would not affect the community in a positive way, they are rather negative voices. They are the agitators.*”.

Joint communication started very hard, they may have needed much time to open up to each other. When they started working together in a large group at the class level a little girl started talking and took up the role of the group leader (7). “I think we should do it in a way that each team shares its idea with us. Team one starts first”. At first they were very co-operative, but then order broke down a little. They started it skilfully, but then they lost focus, however, overall, it can be said that when we left them alone, they progressed towards their goal from the beginning to the end, although with little halts.

Finally, they created a school buffet, as a final joint product (there is no school buffet, they can buy food in the convenience store opposite the school to a limited extent, but they must be accompanied across the road), which appreciates trash pick-up and gives a discount in exchange for environmental awareness, thereby interconnecting ideas of small groups (9). It was positive to see that they carried out the creative process with as much precision as possible by making a very detailed plan. Students typically consolidate their ideas, or select more of them, but they do not suppress meaningful ideas, they rather merge several ideas into one somehow, which is a kind of compromise that may refer to a respect for the creator (8). May be the most positive experience was that the possibility of merging several ideas into one did not just emerge but it was realised. Of course, they also had low points when some of the children lashed out and said: “You are adding something to it, but we are not making any progress.” Despite of this, in the end they made a complex plan of which they were a part as well (8).

Reflection analysis

Figure 20: Code list of student reflections – Bodrogkeresztúr



Source: Own edition based on the analysis of student reflections

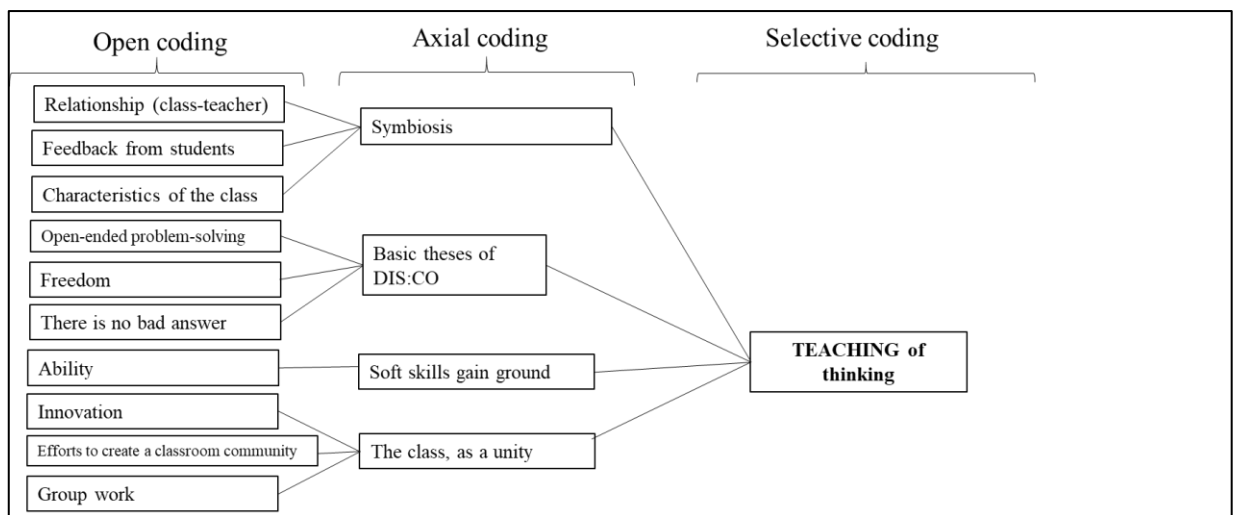
Two important phenomena are worth highlighting based on the reflection analysis. One of them is the category of realisation, whereby the objectives (“*I liked that we had to discuss in the group what we wanted to achieve*”), the designer’s task, and also its realisation, the product come to the fore (“*I like that I can realise what I design*”). They think that the process is completed with realisation apart from the process itself and they consider the community to be capable of doing it: “if we join our forces we will be able to realise it”.

The strengthening of the classroom community also has to be highlighted in connection with the result of the session. Since students from the surrounding villages go to school to Bodrogkeresztúr, children do not have the opportunity to spend some time together after school, which, however they would require. That is why they attached a high value to the fact that the session made this possible for them. “*it brought our class together*”, “*I had a good time, because we were a team*”, “*I liked that the class met*”, “*we had a good time together*”, “*this whole program strengthened the bond between class members*”.

8.4.7 Csongrád County, Hódmezővásárhely

In-depth interview

Figure 21: Code list of the pedagogue in-depth interview – Hódmezővásárhely



Source: Own edition based on the analysis of the in-depth interview transcript

The pedagogue in Hódmezővásárhely is a particularly young, enthusiastic teacher open to novelties and committed to her profession. Her innovative approach primarily means the application of digital methods. She uses the educational program of LEGO which basically can be linked to the method of design thinking, closely related to designcommunication. This may

be the reason why many concepts appeared (as can be seen in the code list too) in her educational-pedagogical method, which are included in designcommunication as well. This includes a reference to the necessity of the open-ended problem-solving (*“This is an awesome task, but if there is only one good solution, or there is only one way to find this solution, how much does it develop?”*), the principle of there is no bad answer (*“If I think of myself, I am trying to teach them this: There is no bad answer”*), and also the approach linked to the freedom-creativity relations system (*“If I think of creativity, there is typically something free, something different, a different approach in my lessons”*).

It is also important to underline in the interview that the role of abilities and skills in value creation appears here as well, which – by focusing on critical thinking – sheds light on the unavoidability of communication and creativity too (*“we have to teach them how to think, and express themselves. In order for them to become value-creating adults, it is indispensable for them to be creative and to be able to use their creativity too.”*).

Participatory observation

The session basically started well. It presupposes an inclusive community that they have a disabled classmate, whose forearm is missing and they helped and supported this little girl all the time. They regard her as a full member of the community, which was also confirmed by the homeroom teacher saying that this is typical in their everyday lives. They were laughing a little in the beginning. It is typical that children compensate their initial embarrassment this way. They were interactive during the presentation (1), then segmentation in small groups also went smoothly (3). They were talking, but not focusing on the topic, they typically got distracted from it (4).

They were not afraid of class-level co-operation either. There were two wilful little girls, their words prevailed. “Now, everybody tell their problem”. It was interesting that here they did not start from group problems, but rather each of them said something, but these could actually be traced back to group problems (3). There were too many options, and they were not aware of what each of them had said either. Finally, ideas of students were written on the sheet of paper who shared these ideas with the others and who were louder (6). The team task itself went well, roles and co-ordination were fine, but the ideas were weak. They did not really understand the point of the task, but they started moving towards the solution with a little help (5). One of them drew the attention to the criteria of the basic thesis of designcommunication, and they tried to comply with them. Finally, pollution, the ban of plastic straws, a more beautiful garden and a *“more home-like home”* became the centre of attention.

The summary of the pedagogue was reflected in their communication, namely, that: *“There are some children who are very happy to express their opinion, but they are nit-pickers. But they are often just mute as a fish. They do not say anything”*. Many children could not express themselves, which was an obvious problem, just like a louder voice or rude speech which had a bigger effect than reason (6).

This was the first group where students did not just present the result orally, but they had to visualize together what they had created (8). The incorporation of this element was necessary to leave room for realisation discussed earlier in physical form, increasing the sense of achievement. Roles formed during the process supported the aforesaid: Two little girls directed the others, and many children could be characterised by the expression obtuse, who were present, but who had no idea of their emotions, if they liked it or not. The biggest obstacles to the completion of the process were self-expression and communication skills, or especially the lack of them. Here I would emphasize what also confirms what the homeroom teacher said. The task requiring creativity itself is a necessary but not a sufficient condition. In addition to this students must be able to apply creativity as well.

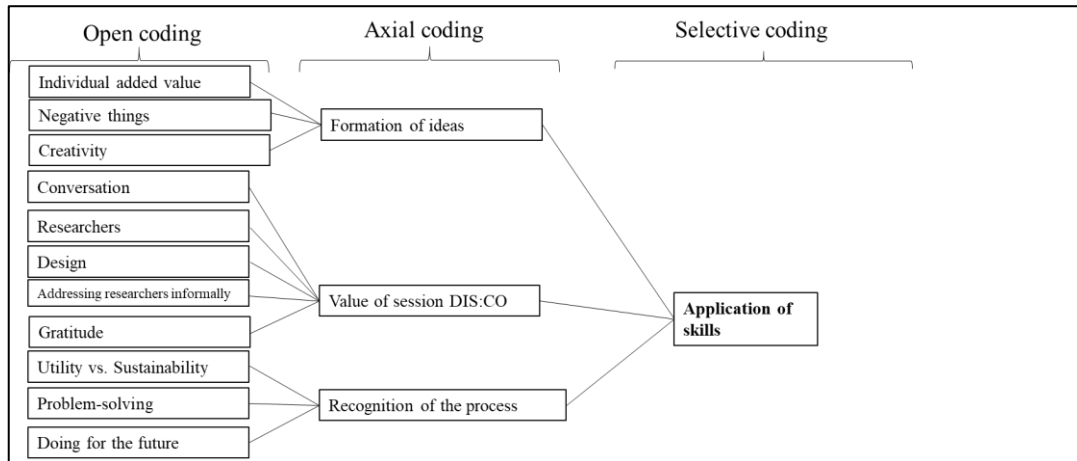
Reflection analysis

Student reflections show that they had a very good time, they are grateful because this session was realised with them (*“Thank you very much for bringing such a good presentation”*, *“There are so many sixth-graders besides our class and I am very glad you came right here.”*). It is interesting that many feedbacks were given on the researchers (*“you are very kind”*, *“you have strong nerves”*), and the creation of an informal, free (*“nobody reprimanded me if I laughed”*), non-hierarchical (*“I liked that we did not have to address each other formally very much”*) situation. It can be seen from the positive feedbacks on the researchers that they are aware of their changing behaviour, they are critical of themselves and their classmates which they defined as a negative attribute experienced during the session (*“I did not like the big hubbub”*, *“I did not like when the others made noise”*).

They can see the process clearly despite having faced obstacles during realisation. They point out in the reflections that the problem is recognised (*“The Earth should be protected from mankind, not allowing them to pollute poor Earth”*), it is discussed by the whole class (*“I liked when we formed a team and we had to discuss that particular problem”*), and after that the solution is found (*“The environment can be saved with our contribution”*) with their joint contribution. The question arises: why can they not apply this knowledge properly in practice if they can see the whole picture that well. Verbal communication and the lack of self-

expression may explain the problem. The figure below summarises the coding system including the phenomena highlighted during the reflection analysis.

Figure 22: Code list of student reflections – Hódmezővásárhely

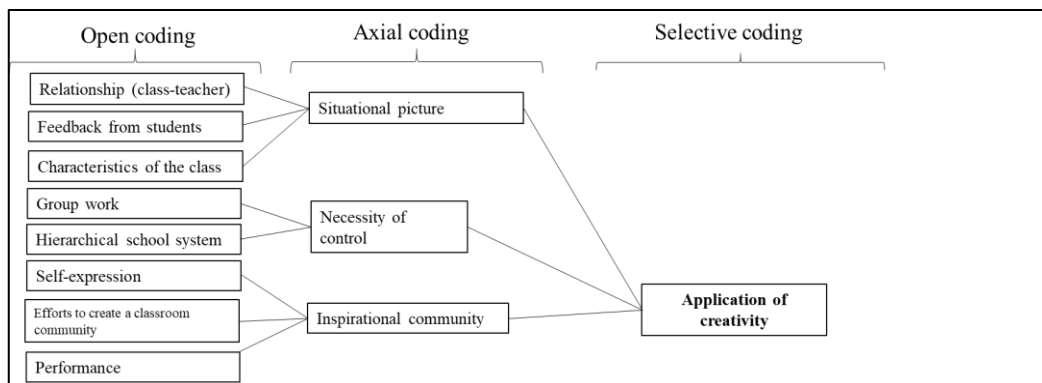


Source: Own edition based on the analysis of student reflections

8.4.8 Borsod-Abaúj-Zemplén County, Sajószentpéter

In-depth interview

Figure 23: Code list of the pedagogue in-depth interview – Sajószentpéter



Source: Own edition based on the analysis of the in-depth interview transcript

The most interesting result during the analysis and coding of the pedagogue in-depth interview from the point of view of my research focus is the definition of the concept of creativity provided by the pedagogue (“Creativity is when somebody understands something, adopts it and can incorporate it somehow and keep using it somehow.”). It had already been mentioned in Hódmezővásárhely that creativity can be found in every child, however, its application and its conscious incorporation into the process are less efficient. The pedagogue thinks that her task in connection with this is to consciously support the targeted use of

creativity in parallel with its instinctive appearance by involving suitable methods (*“we should strive to embed it, or recall and use it for something useful.”*). A characteristic of the designcommunication workshop is that it does not limit creativity, its cross-range creativity approach serves as a suitable method for the elimination of the problem.

The hierarchical school system is not likely to facilitate the above, because it continuously provides students with instructions, who have got accustomed to this situation and they cannot be expected to become independent or to freely share thoughts on command. Therefore, it is understandable that they need directions from their pedagogue (*“It was unusual for them not to be directed. This group, they like being directed very much”*).

Participatory observation

The workshop started after the rearrangement of the classroom. This school is a talent centre, thus children study main subjects in different groups, which means that the class is not always together, they form groups with another sixth grade class based on their abilities. The class has got a new homeroom teacher, who has been with them for a year. Consequently, a real classroom community has not been fully formed. The homeroom teacher and the Hungarian teacher were present almost from the beginning to the end, they interrupted children and talked loudly several times which was unequivocally disturbing and did not have a good effect on children, who thus had difficulties in disregarding the traditional, strict, hierarchical framework.

They were active during the presentation (1), they had many comments and questions (2), we are definitely talking about very smart children. They were listening to the presentation all the time (1). They typically did not ask questions in the second half of the presentation (2), but when I asked questions I received many comments. They worked together well in small groups, they were talking quietly all the time, nobody fooled around (4). The self-expression of children was truly in line with what the pedagogue had said, they expressed themselves nicely, they were well-spoken.

Work in the big group started well: “come on, somebody tell us an idea”, it seemed that the roles within the group would be established relatively quickly, but then chaos, bustle and cliques were more typical (5). They paid less attention to each other, they could not even hear one another (6). Roles within the group were not established. Sometimes, one of them talked louder and thus received attention for a few seconds, but then, there were bustle and fuss again, and separate groups were formed (6). They felt they had trouble with this, which slowed down the work even more. Despite of all this, in the end they felt that the decision was made and the

product was produced together, that they decided this jointly and everybody agreed on the end result (8,9).

The reason why they could not work together is presumably that the class spends little time together, and children missed the rules and guidelines mentioned by the pedagogue too. So much group work in vain. They just apply methods, whereby roles within the group and tasks are fixed, thus they do not face real, open-ended problem-solving. They are smart students with high emotional intelligence, their wording was exceptional, still they did not succeed in leading the group and making a decision acceptable for everybody by actually operating as a group (8) (even if they considered it to be a joint decision). They lacked joint thinking, compromise, acceptance and motivating each other, which all require the development of soft skills instead of hierarchical rigor and discipline.

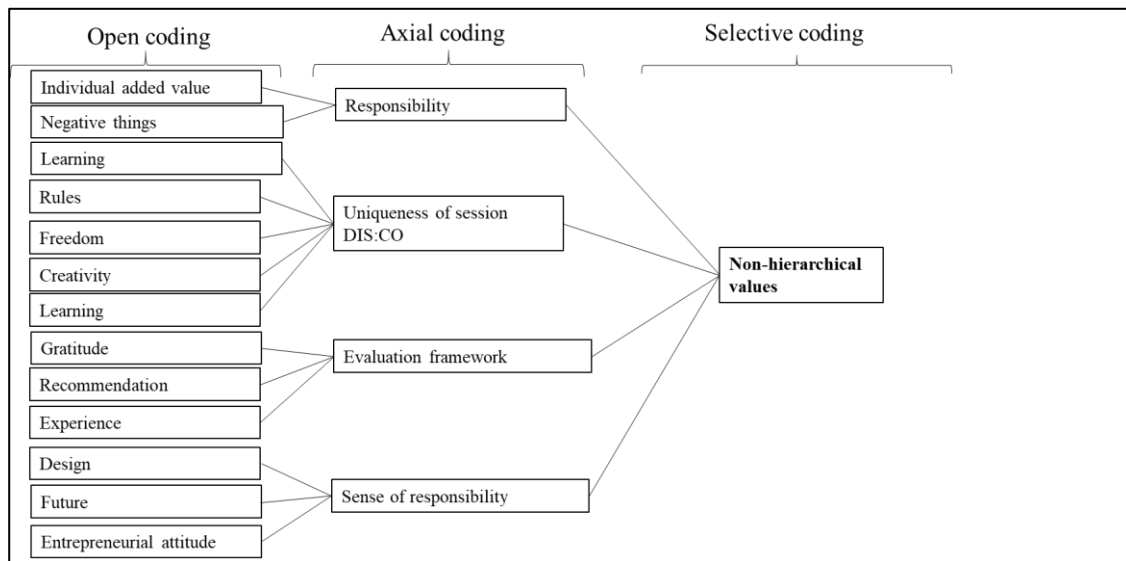
Reflection analysis

The result of reflections is absolutely in line with the above. Students did not feel that the task was a failure, however, they did not even mention their attitude towards the product. However, in parallel with this they all mentioned the phenomena which caused the failure of the co-operation with almost no exceptions (*“Not everybody could make comments, because they were shouting all the time”, “We did not listen to each other”, “Not everybody took it seriously, they were talking crazy”*). They thought that the uniqueness of the session was attributable to the concepts of learning (*“I liked that I got to know new pieces of information and everybody could tell their opinion”, “We played a lot and I learned new things”*), alternative rules (*“The program was fine, and it was nice that we were not bound by strict rules”*), freedom (*“I liked that we could laugh and talk a lot”, “I liked that it was an easy-going lesson, but we also learned something”*) and creativity (*“I liked that we had to be creative in everything very much”, “A great deal of creativity was necessary for this to be created”*).

They evaluated the designcommunication session from the point of view of experience (*“We got very excited”*). *“I did not like that this whole thing was over, because I had a very good time”*), gratitude (*“I hope you will come again to class 6 a”*) and recommendation (*“I think that many people should participate in such a lesson, because it made this topic more understandable to me”*).

The topic that they can do something for the future made a great impression on them (*“I liked that we tried to protect our environment, and we discussed these things”*), while entrepreneurial attitude also appeared (*“I think that now we were not students, but little people who designed future as if we had been at a meeting.”*).

Figure 24: Code list of student reflections – Sajószentpéter



Source: Own edition based on the analysis of student reflections

8.4.9 Tolna County, Tamási

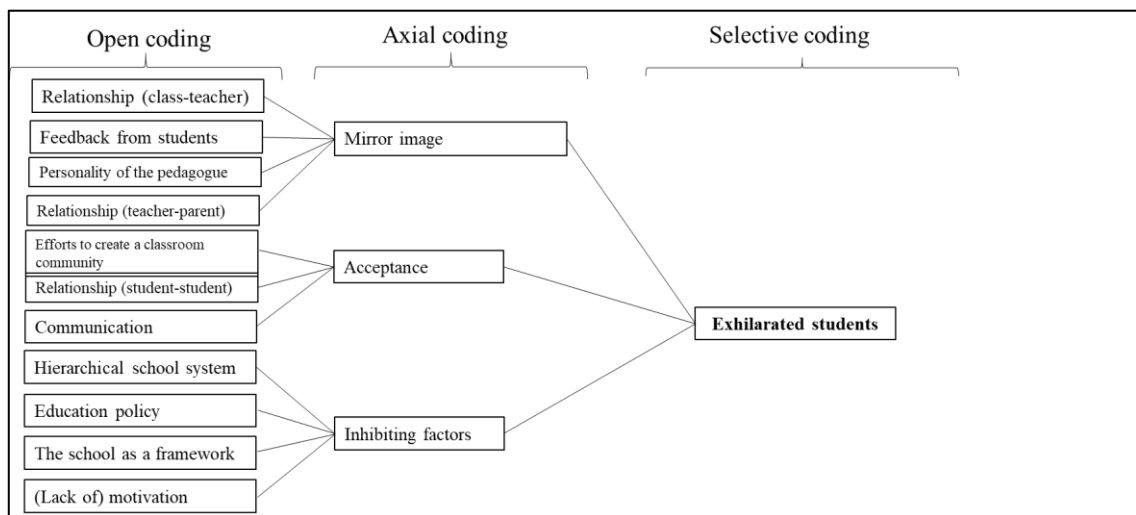
In-depth interview

The interview conducted in Tamási revealed a pedagogue personality where the creative establishment of contacts is carried out via the personality of the pedagogue, not by novel methods, and she also thinks that this is the greatest strength of pedagogues (*“the personality of the teacher is much more important than the things she teaches. I feel that this is about me.”*). She loves her students as a surrogate mother, and she believes that example determines the behaviour of students (*“I think that they hold up a mirror to us. They give back exactly what we give them.”*). She gives them freedom and space, listens to them which appears both at the lesson (*“my credo is that they must not be afraid, they should not come to the lesson nervously”*) and during communication (*“These children need somebody to listen to them, their little lives, problems, spiritual crises.”*). She also ensures out-of-class interactivity which was already mentioned in former interviews. She believes that the most important element of community building is acceptance (*“Acceptance, definitely. The only thing that makes me angry is if somebody hurts the other person either in personal life or in the classroom community”*).

However, this attitude is contrary to what the pedagogue society (*“But I feel that I stand out here, and I often feel that the pedagogue society rejects me, because I cannot identify with pedagogue conventions, e.g. with authoritarianism”*), the education policy (*“we cripple children, because unfortunately this is typical in Hungarian public schools”*) and the

established hierarchical school system (“*Many of my colleagues are not tolerant, children are robots who have to be prepared for every class, they cannot make mistakes, they cannot leave anything at home, they cannot be sick.*”) can offer. This framework results in false motivation (“*He just studies for this, for good grades, not because he has got a thirst for knowledge*”), or unmotivation (“*My child who also plays sports hates going to school, because he hates the useless things he has to learn. He learns them, then he forgets them. Although he is a straight-A student, but he knows that he will not make much use of these things in his life*”) from the point of view of the students, it does not allow students to be exhilarated, the freedom which could foster creativity is missing.

Figure 25: Code list of the pedagogue in-depth interview – Tamási



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The observation of the homeroom teacher on the class was correct, we could work with an extremely capable, intelligent and smart class. There was a small child the deputy headmaster immediately brought to our attention (in front of the class), and told us to pay particular attention to him (4). Obviously, both the small child and the class played up this and the – in my opinion totally manageable – little boy was put onto a very peculiar shelf, into the unmanageable/hyperactive drawer. Children were listening during the introduction, then they identified their home with the following concepts during the ball introduction: “*home, family, love, togetherness, happiness, fun, cat, joy, calmness, humour, safety*”. Of course, here it was also typical that the first speaker influenced the opinion of the others, but this can be observed as a tendency in every school.

The presentation took place after this, according to the usual schedule (1), which was pretty interactive. Many comments were made by the children. They actively paid attention to the presentation (2), but towards the end their attention waned a little, which was totally understandable. They identified the establishment of contacts with friendship, openness and dialogue, with particular emphasis on facial expression and body language.

Work in small groups went really well (3), they were very active, they were talking all the time, they wanted to work together. Before this they also identified the individual problem soon, the question arose if their home can be identified as their wider environment (environment/school).

They discussed the following topics in small groups (3):

1. Trash pick-up- there was a group which reviewed all designcommunication guidelines in connection with this, namely that according to the constant/variable it is important who picks up trash and which day and whether the event takes place on fixed days or always on a different day. They interpreted risk in a way that it could be risky if they pick up trash without gloves, if they collect trash but leave it at a given place or if they do not pick it up! They tried to find an immediate solution for this.

2. Another team was focusing on the improvement of their learning outcome (project ILO). They will get better grades, motivate each other, turn their phones off and spend more time on studying.

3. Food vending machine: which can be refilled with food which homeless people can take out. The risk here can be the deterioration of food (refrigerator) and possibly if an unauthorised person takes the food away.

4. Environmental protection team, which already designed the billboard too (waterfall in the background, name and reason for formation at the top). They would go around pick up trash every weekend combining it with a little “revel” because everybody sings cheerfully.

The work of the big team begins. There is a little girl (the homeroom teacher’s daughter), who starts and takes control. When it became clear that two teams had voted for trash pick-up, other ideas were pushed a little into the background. Class-level co-operation was carried out pretty skilfully. It is definitely remarkable that they keep in mind and review methodological guidelines in connection with the project. They feel that not everybody participated in equal proportions, because when I asked if decision had been made at the class level, their opinion was – addressed to one of the little boys – that “not at the class level, because you did not pay attention to it”, “this is the idea of those who paid attention”. They defined “Operation trash pick-up” as the result. They liked the visualisation of the product very much (9), they crouched

on the floor together and drew in that position. The initial great enthusiasm waned a little towards the end (4), they scattered, but the hard core remained there and made a very informative billboard (8). Apparently, they had a very good time and their appreciation was expressed towards the researchers.

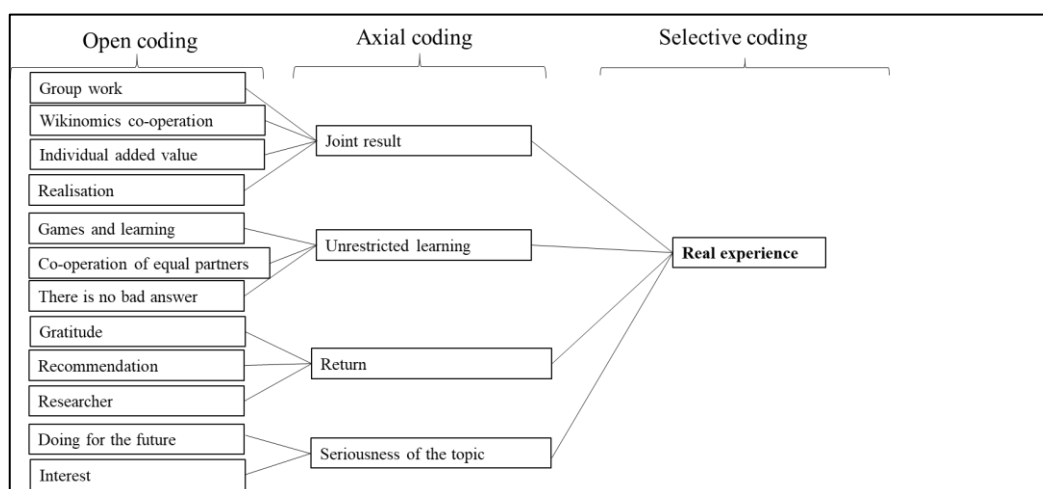
Reflection analysis

The reflections of children was definitely experience-oriented (*“Thank you for the experience, I am glad you have come to visit us”*). They had a really good time, and they could determine well-defined elements of the workshop. It was very important for them that the attitude of the researcher was positive (*“This lesson was very fantastic, because no matter what we said you always had a positive attitude about it.”*), there was no bad answer (*“It was interesting and I liked in this session that there was no bad answer and I could say a lot of good things”*), and they could work in a non-hierarchical framework (*“I liked that everybody’s voice was heard and everybody’s opinion mattered”, “I liked that everybody was equal, and you spent equal time on each of us”*), which is in line with the presence of strict limits of education as sources of problems the pedagogue had talked about. It was also an added value that they could learn a lot (*“I learned a lot of things in these few hours”*) during the session, and they could do it in a playful way (*“Today we could spend 3 very awesome playful hours with you”, “I liked that it was not a serious, stern but rather a playful lesson”*).

Gratitude and the possibility of return also had a significant presence, a relevant proportion of children wanted the workshop to be realised again (*“I hope I see you again and you will give us a lesson like this”, “Thank you very much for everything you did for us, you made our day more beautiful and more interesting”*).

They liked working together, but because of their stable classroom community they exceptionally were not focusing on this, they rather consolidated this with the seriousness of the topic, appreciating that they could work together on the solution of a meaningful problem (*“I liked the part when we had to find out how we could help the world”, “We could resolve the problem in an awesome and reasonable way together”*).

Figure 26: Code list of student reflections – Tamási



Source: Own edition based on the analysis of student reflections

8.4.10 Szabolcs-Szatmár-Bereg County, Baktalórántháza

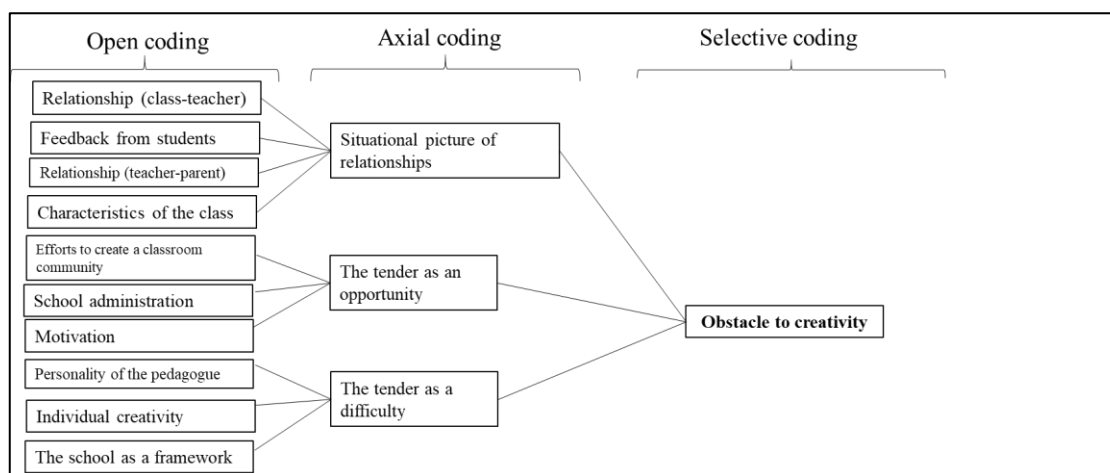
In-depth interview

It is important to describe the situation, because here the session was held in a poorer school environment, there are many disadvantaged children which defines the limits and possibilities of the pedagogue in itself. 12 out of the 15 students in the class are disadvantaged students and most of them are highly disadvantaged. There is a child who lives in a foster home, while another child's dad is in prison. There is a reason a big part of her work is about upbringing besides education (*“Well, the work of the pedagogue consists of two main parts, education and upbringing.”*). There is a possibility of building a community as a result of the efforts of the agile headmaster (*“we participate in all kinds of tendering opportunities, and our headmaster is very active, a partner and an initiator in this, As a result of this, we can travel to many places.”*), tenders and the rewards provided by them serve as a motivation for students too. The school applies for all tenders and it “devours” financial and tool benefits provided by these tenders, but the real content of the programs (if any, of course) is already less favourable, because it is a lot of work which means an extra burden for pedagogues.

It is also important to underline the attitude towards creativity. This appears in inhibiting organisational factors (*“Everybody has his own program, there are schemes here which show how to do it and I cannot see any creativity in it.”*) but the promotion of individual creativity is very fragile (*“There is a little girl in the 8th grade who is very creative and we cannot help her as much as we should.”*). In addition, tenders have an inflexible nature, which does not really create individual added value, or does not create it at all for pedagogues (*“Actually, the reason I cannot find any creative things because there are so many fixed things. Somebody has got a*

given program, and you have to do everything according to this, it is almost like an algorithm. Practically there is no creativity in it, but we participate in so many things. Our creativity disappears in it.”). However, in parallel with this the teacher is aware that her personality is also a necessary condition for the unfolding of creativity (“Because I am sure that a creative pedagogue can influence children. And then he can lure out the creativity of a creative child who is automatically creative – because I think he was born with it”). The dimensions of creativity from the interview are also contained in the code list.

Figure 27: Code list of the pedagogue in-depth interview – Baktalórántháza



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

I could start the workshop only at 12:30, which meant that children were already past all morning at school, and they started working wearily (1). The participants were kind and cute students, there were no behavioural problems during the session. They liked the ball task and took me into the circle soon. In the beginning they were very embarrassed but then they got the hang of the game (2). No wonder they mainly identified home with eating, watching TV and sleeping. One or two times they mentioned the word family but associations expressing emotions which were typical in former groups were missing. The presentation was very interactive (2). There were valuable comments, but they were mostly children with average or below-average abilities.

They worked in small groups very skilfully (3). There were three groups. One of them dealt with trash pick-up, and issues of selective waste collection (5). There was a group which set out the aim of helping starving children. The central topic of the third group was animal protection, without further specification.

They had a lot of momentum when they started the big joint work, they closed the circle soon. They started talking to each other, then the team broke up. They made fun of it, got tired could not interpret the task, the whole thing disintegrated and they felt this (*“We just shame ourselves this way”*). Disciplining each other was typical (4), and they also wanted to meet our expectations (*“Miss Saci described us as smart children. They came here and now they can see it”* “).

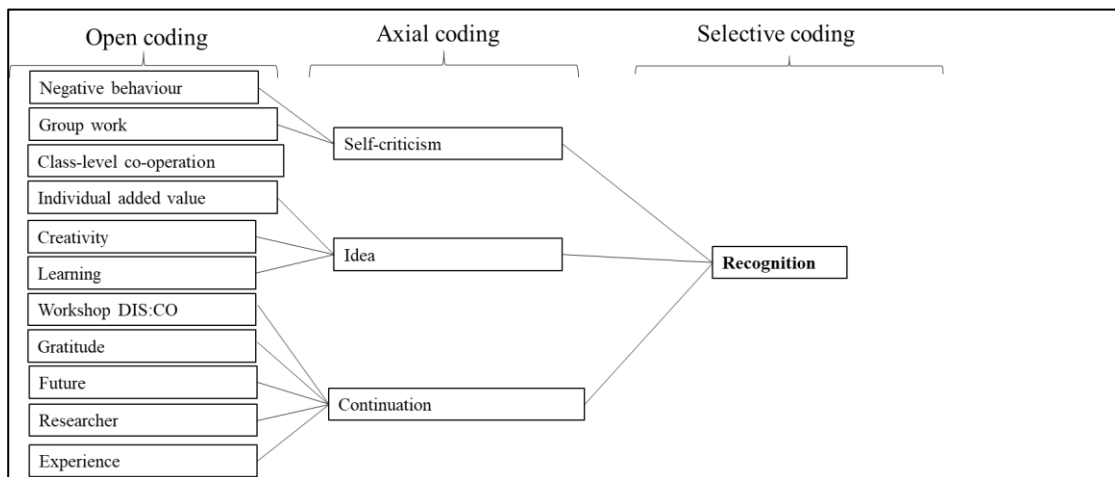
During the group drawing (9) it was an interesting solution that they gave the sheet of paper to a little girl (the homeroom teacher previously hinted that she was the “creative” little girl, and they probably think the same thing as well) and she drew. But the others did not leave her on her own, they were there, near her, and told her what to draw (8). They worked together in small groups well, but they definitely disintegrated in a larger group. No real product was produced, in spite of this children seemingly had a good time.

Reflection analysis

Reflections also showed that students had fun. They emphasized situations when they could work together more efficiently and what they could take seriously (*“I liked it the most when we worked in small groups, because we took it seriously”*). They were annoyed because they could not resolve some of the tasks, their self-criticism is strong, they recognised that this was the consequence of their laughter (*“We were fooling around, the class was giggling, we could not answer the questions”, “We were giggling during more than the half of the work in the large group and we did not resolve the task well”*.). They underlined tasks related to the session (*“I enjoyed every part of the presentation”, “Tasks were fine”, “This DISCO work was interesting”*) and the personality of the researcher (*“You were kind and understanding, furthermore patient and funny”*). They realised that they had also acquired knowledge during the session (*“It was nice to get to know new things”*) and a need arose to continue it too (*“There were good tasks and they were not boring. I wish lessons were like this”. “A study circle can also be formed of this”, „I was feeling so good that I hope we will meet again some time”*.)

They thought that in many cases their own individual added value meant good ideas which suggests that creativity is in them, but it cannot unfold because of the lack of space and opportunities, which is totally in line with what the teacher said during the interview.

Figure 28: Code list of student reflections – Baktalórántháza



Source: Own edition based on the analysis of student reflections

8.4.11 Jász-Nagykun-Szolnok County, Besenyeszög

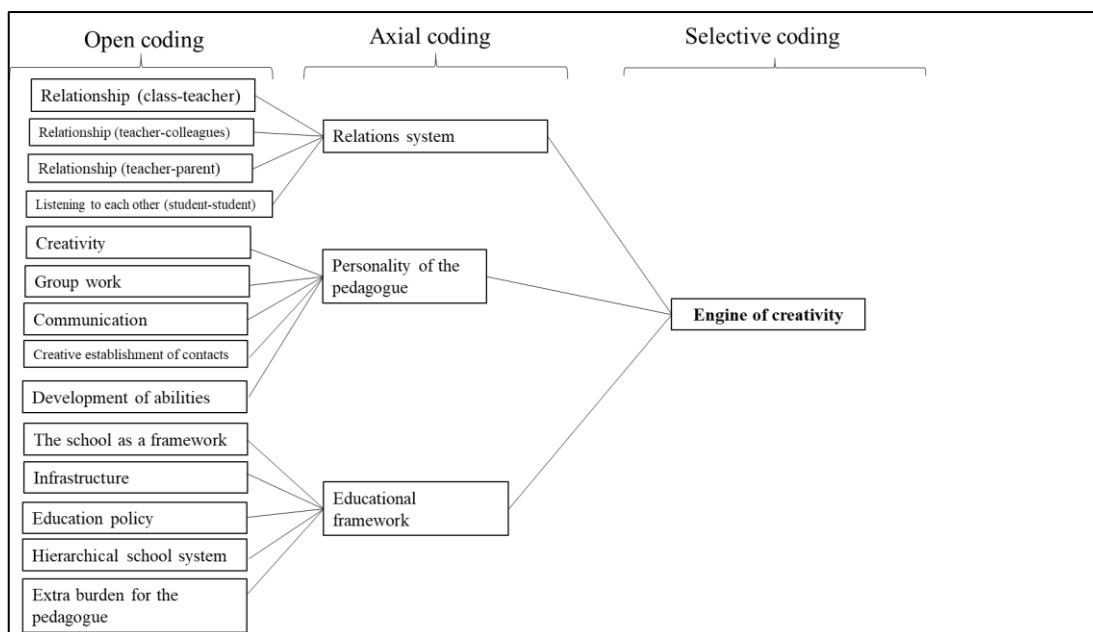
In-depth interview

I already described the close relationship between designcommunication and art-based researches in a previous chapter, however the parallels between them came up again here in practice. The pedagogue in the settlement of Besenyeszög the in-depth interview was conducted with is the founder of the art school of the institution which defines her attitude, creative establishment of contacts is a natural part of her everyday life (*“An average teacher does his job, and he does it well. He goes back to old times, takes some idea from there, but does not continue it, he is doing the same thing. I think that I am the creative design connection, because I can creatively work on my things.”*). In the eyes of her students she is the embodiment of creativity herself (*“From the point of children: they consider me to be very creative”, “Miss, you have got very good ideas”*). She considers the integration of creativity into school to be of the greatest importance because in her opinion there is no other way to prepare students, the continuously changing environment (*“Because the whole world has changed. Therefore, it is changing. Creativity and creative solutions are answers to the process, the change.”*) requires the improvement of skills (*“We do not even know what we will need in 5 years. That is why it is very important for them not to learn a given material, but to try to be flexible. And then, if somebody is creative enough, he can build on this, change, bring something new and learn.”*).

At the same time, the problem is that the Hungarian educational framework, the hierarchical relations (*“In Hungary there has always been the “great” teacher who spreads the word. But we must admit this has not been true for a long time.”*) do not leave enough space and the system does not follow the changes of the needs of life and the students fast enough

(“I think they do not prepare us for life. Our school system is very rigid for me.”). Pedagogues can be the engine of the increase of creativity to some extent, however, due to the problems above the system does not allow this, because their other obligations impose a huge burden on them. (“so we can do a lot of things, but we have to work on them. And not to complain, but if we are at school 24 hours a day, then I cannot devote so much extra time to my ideas either, because being with the children so much drains my energy.”)

Figure 29: Code list of the pedagogue in-depth interview – Besenyeszög



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The workshop was carried out in a separate “art shack” next to the school. We started the workshop with the children at 10 a.m., which was an ideal time. By then they wake up, they are active and they can barely endure until lunch. The workshop was totally different at a location, where there were not any regular forms, system, desks and chairs reminding of a classroom. We arrived at a place where everybody could open up, where we didn’t feel like being at a school, where everybody could be exhilarated, playful and creative, because they go to this place when they are tasked to do so. This was felt during their work.

The conduct of children was ok, they fully obeyed me (4). 16 children go to this class, of which a pair of twins has hearing disabilities, but this did not bother children at all, they took them in. The classroom community was therefore strong and close-knit. They did not laugh at

each other, nor did they mock one another. They worked together very well both in small groups and in the large group (3).

Home was much more associated with emotions and family here: expressions “*family, friends, I have a good time, pet, it is good to be at home, doing nerd things, it is the best place to be, I feel safe*” were mentioned. The presentation here was also very interactive (1), they are a very intelligent, smart company, they said unbelievably good things (2), it is visible that they have a family background and that they are dealt with. They resolved the individual task silently (3), then I divided them into four groups of four. Most of the groups worked very skilfully (5), they really talked about the topic and involved everybody. The following ideas were formed (9):

1. Relaxation room, where they can seclude themselves and relieve stress
2. A robot made from recycled materials, who does everything
3. OBJECTIVE SOLUTION –tidying-up (let us tidy up every day to avoid a big mess)
4. A call not to sit at the computer, but to go outside and play.

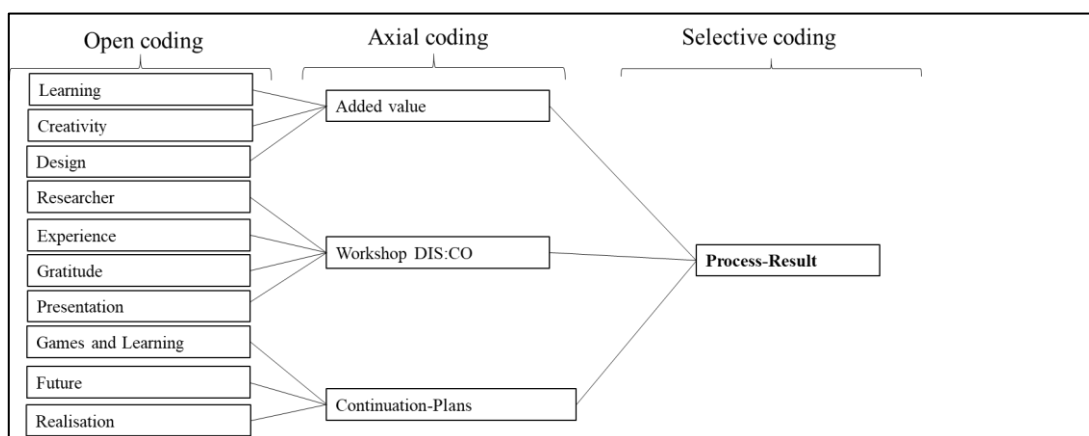
They had no trouble with the task in the big group either. Their work (for sixth-graders) was so well-structured as during the solution of a serious problem in an organisation (3). They communicated proposals made in small groups in a way which was receivable and understandable for everybody, after that they stated without thinking that the solution is to merge problems. It was interesting that roles within the group were not specifically established, there were 10 students who formed the hard core and they talked listening to each other. They figured out that they would set up a hotel (9), which has cleaning robots, this would be a stress relieving hotel, where there are no electronics, the robots are made from natural materials, and guests can meditate morning, noon and night. Its name would be BIOHOTEL and it would consist of healthy and eco-friendly components. The costs of the hotel would be financed from government tenders. They define it as a risk that it is unstable and they may not have enough money for it. They would use solar energy, which would be fine for everybody, they associate it with the concept of the objective good they already got to know (8). They work together as equal partners (6), and they expect each other to have upbuilding thoughts (“*you can take the floor if you can argue in favour of your own idea*”)

After the class-level co-operation they told me they were ready (3). They disintegrated a little during the group drawing (4), 5-10 people drew and got involved there instructing the others, and there were two smaller groups were left out. Afterwards it turned out that they had wanted to participate in it, but they had felt excluded somehow.

Reflection analysis

The students evaluated the elements of the designcommunication workshop positively (“I liked both the presentation and the group work”, “I usually consider presentations to be boring, but I was interested in this very much”). They also mentioned its community building nature (“My role was to get closer to my friends”), but a much greater emphasis was placed on the learning process itself (“I had a very good time, and I could learned many new things”, “We could learn much useful information about the future, and we could get to know new concepts too”), as an added value. The need and determination to produce the designed products, as the completion of the process were also given space (“I will surely take on this 30-day tidying-up challenge, because much time can be saved with it.”, “One day we will realise BioHotel”, “I liked it very much, but to be honest, but it was not a good thing that we did not make a blueprint”) The experience nature of the session (“I had a lot of fun”, “I did not think this was going to be that good”), learning through play (“I liked it, because it was an interactive, involving design combined with playful little tasks”) promoted the unfolding of creativity. Leaving the process open, students would be happy to perform the joint work again in the future (“Come again next time, we could try more things”, “I would be glad if there was a similar session some other time.”)

Figure 30: Code list of student reflections – Besenyeszög



Source: Own edition based on the analysis of student reflections

8.4.12 Békés County, Mezőberény

In-depth interview

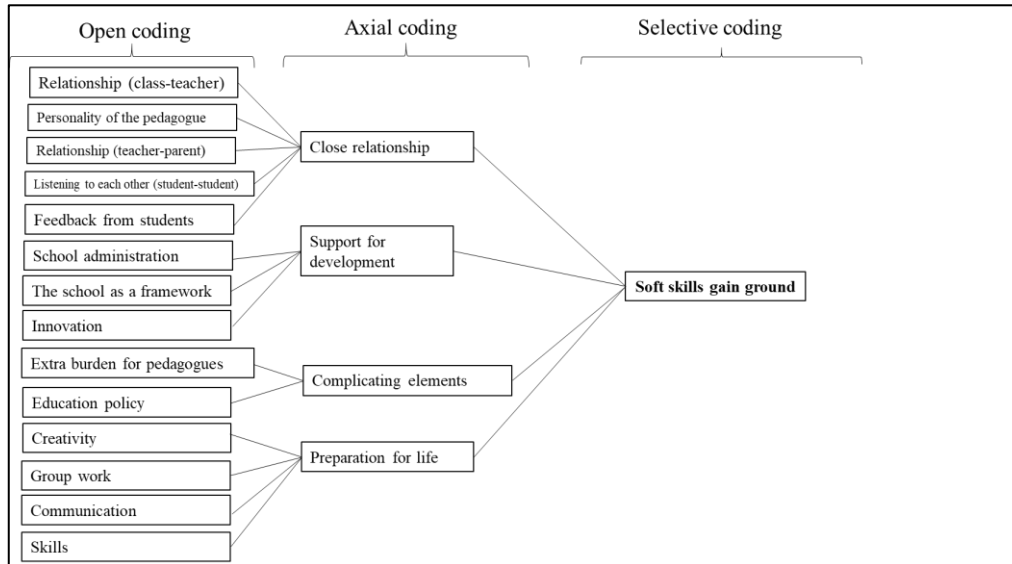
It was confirmed at most locations that my call was truly responded by pedagogues who were open-minded, who had an innovative approach and who accepted new methods at the time when I was looking for schools for my research. The pedagogue who has such an attitude also strongly influences the examined community. It was experienced several times that the characteristics of students were reflected in the personality of the homeroom teacher. This recognition is strongly in line with the progressive roles of pedagogues discussed during the literature analysis. (Beghetto, 2006). The whole school environment supports innovation in Mezőberény (*“Our school is innovative, so I, as a pedagogue also have to be innovative.”*), as school administration leaves room for personal development as well (*“I have participated in plenty of further trainings over the years, but I have always been encouraged by the headmaster to do this.”*). However, the support of the direct environment is in vain if pedagogues must follow education policy guidelines which are obstacles to their creativity and freedom (*“And good textbooks are not allowed to be introduced into education. I cannot order them. But why? Where is my freedom? Why may I not have a tool in my hand which 100 percent helps me with my work?”*) The increasing administrative burden also hinders them to spend time on the integration of creative methods into school (*“Those who are not so open to these things think that this is so much extra work for them. While they are already exhausted. And this means much administrative work.”*).

The improvement of skills-based education via creativity was of utmost importance during the interview. According to the pedagogue, her task is to shed light on open-minded thinking, that there is not just one good solution (*“Children should see that there are several ways to do something. They can go in several direction, because they have options.”*), and that they should make decisions in a critical way and not as a result of pressure or manipulation (*“If we improve their creativity, they can choose from a broader range of things. I often tell them not to allow themselves to be influenced.”*) She often considers personal development carried out via the improvement of soft skills to be more important than factual knowledge (*“Factual knowledge is also necessary, it gives a basis, but I say that it is a fifty-fifty split between personal development – creativity development – and teaching material”*).

Group work is regularly present in her educational activity. She has recognised why the acquisition of co-operation as a soft skill is significant and she makes this known to children too (*“I told them if they got to a workplace they would have to work in a group or a team. Of*

course, they will have their individual tasks, but they will have to do something for the company together, so they will have to co-operate”).

Figure 31: Code list of the pedagogue in-depth interview – Mezőberény



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

We surprised the class, even a math test was cancelled, thus they were especially happy for us. There were no disadvantaged students in the class of 23 children. 1 student was absent, a total of 24 persons go to the class. The teacher was present at the workshop from the beginning to the end, but this was not disturbing, she did not interrupt the workshop, she was present as a silent observer. I am sure that children love her, because they threw the ball out to her as well during the introductory ball task (last time this happened in Nagykörös). In the end, the homeroom teacher told me what a recognition it was about the children, how much she loved it and that she showed a different side of herself.

The workshop was carried out in a good atmosphere, there were no behavioural problems in the class at all (4). The strongest point of the workshop was the presentation (1), a very interactive conversation took place (2). They realised the problems individually soon, then they worked in 5 small groups (3). They worked together very well here (controlled group work is common in their class). They formed ideas in the following topics: trash pick-up, an enterprise where they draw attention to how harmful it is to pollute the environment. They will make a presentation which they will present at schools and in community centres, and also they will

make posters and organise a camp where they will educate people about this. The use of “new types” of energy was also mentioned (9).

They formed the big group. This was the weakest part of the work, it is clearly visible that this mass establishment of contacts rarely goes well for classes, therefore, it should be developed. Finally, a little boy and a girl took up the role of group leaders. They recognised the connection points between ideas and they decided to harmonise these ideas, so the joint product would have been produced this way, but at this point the group started disintegrating, cliques were formed and children got distracted and only the two group leaders and the students around them kept working. Turmoil broke out, in which everybody expected the others to recommend a solution.

Finally, decision-makers in small groups made decisions in a determined manner but they also made sure to integrate everybody’s ideas into the joint product. The project was called World-changing children (9), (The class was divided into groups of 4 and everybody had the task of pursuing and popularising an environmentally friendly behaviour, adapted to the objectives of their group) and in the end it was also analysed along the principles of designcommunication. They did a great job with the group drawing, when it was finished they presented it and created their own recycling symbol (8).

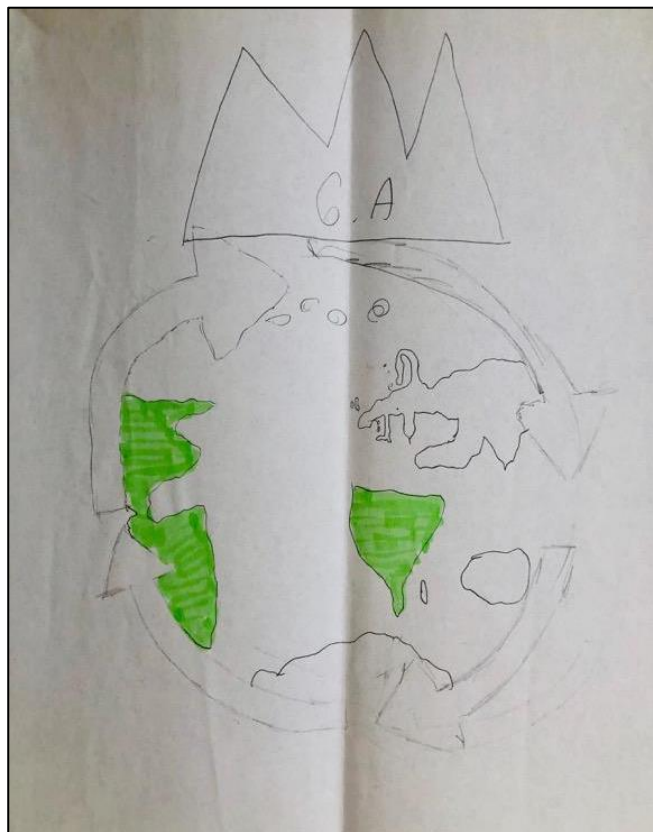


Illustration 1: Group drawing-Mezőberény

I would underline in connection with their idea that this was the first class where the whole class thought that they could change the world (8), no matter how little they are for this (5). Emphasis was put on will, which is a great value in the thinking of such little children.

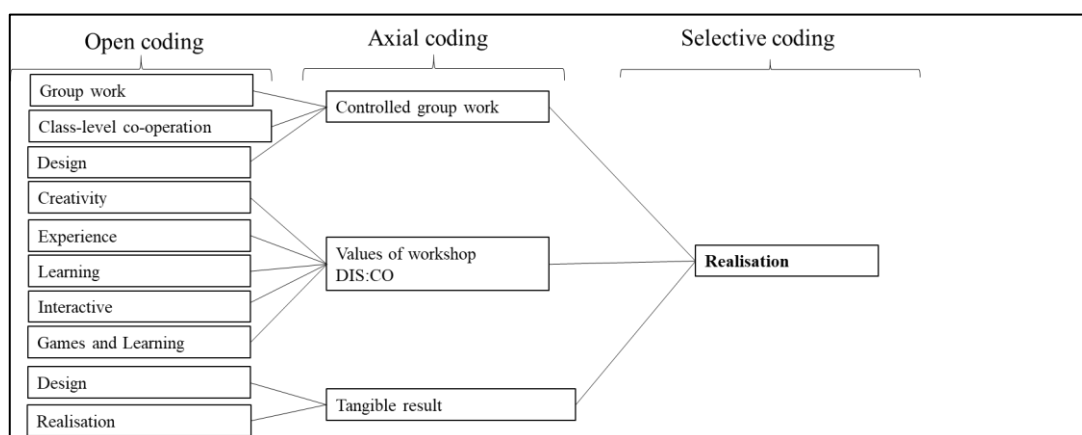
Reflection analysis

There were two meaningful points regarding student reflections, which have not yet been mentioned, but which complement the establishments above. In their case, group work is very common in everyday education, although with very well-defined tasks, objectives and guidelines. In most cases there are also roles within the group based on the pedagogue in-depth interview. However, during designcommunication this external control disappears, which is manageable for them in small groups, they can handle it well, however, they cannot take advantage of their freedom during the co-operation in large group, that is why the class turns into chaos. They express this indirectly in their reflections where they evaluate co-operation in small groups positively, (*"I liked conversations and work in small groups very much"*), however, disorder and the resulting "failure" bother them during the class-level co-operation (*"I did not like very much when the whole class had to work together, there was a big hubbub there"*)

The other important phenomenon I would emphasize here is the need for realisation. Turning a design into action appeared as a desire or an objective for the future (*"It would have been nice if we had realised what we were talking about"*, *"It was a very good program, we may be able to realise it too"*). But there was also a student who decided to change his behaviour as a result of the outcome of the session not at the community level, but individually. (*"I will protect the environment"*)

Students considered learning (*"I liked it because we learned a lot of things which is very useful"*), learning through play (*"I liked that the whole thing was playful"*), interactivity (*"I liked that the lesson was interactive"*) and creativity (*"I liked the tasks and that we could use our creativity"*) to be positive values and experiences (*"I had a great time"*, *"It was funny and there was a good atmosphere"*) of the designcommunication session.

Figure 32: Code list of student reflections – Mezőberény



Source: Own edition based on the analysis of student reflections

8.4.13 Fejér County, Baracs

In-depth interview

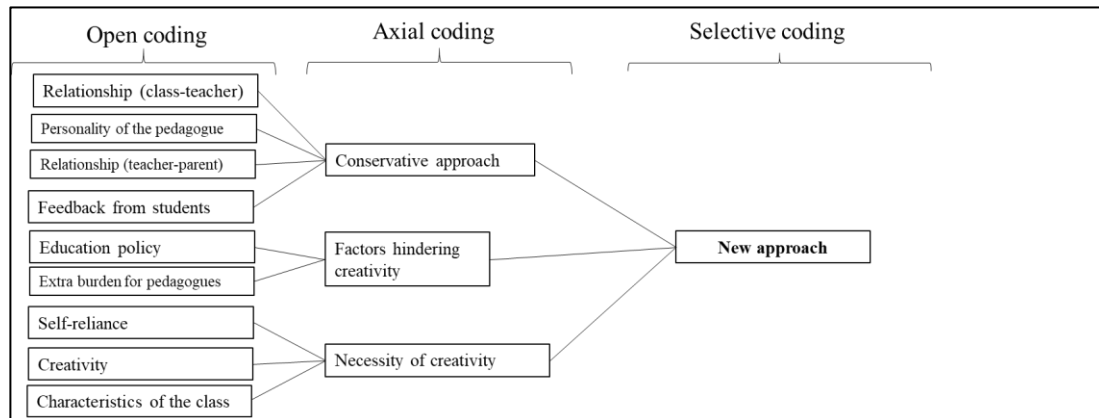
The pedagogue in Baracs unequivocally positions herself as a conservative pedagogue (“*I am conservative because of my age.*”), who has known her class since lower primary school, and who basically has a good relationship both with his students (“*Most of them love me, because I love them too. They know I have rules they have to follow.*”) and with the parents as well (“*I have good relations with the parents, with most of them.*”). She characterises her class as an average village school community. It is important to note that she misses the self-reliance of children (“*They are not self-reliant enough.*”).

She considers creativity to be important (“*You need a high degree of creativity for it. Methodology. You have to be creative in teaching methods too.*”), and she definitely thinks that today’s generation must be approached with different methods (“*Children these days are totally different, I have been working as a teacher for 35 years, I can see it. They do not accept if I tell them this is written in stone. They do not care about it anyway. You have to figure out many things, you have to do many things in a different way, if you want them to be interested in them.*”). In parallel with this, she acknowledges that this does not have enough space in everyday life (“*we could take much more advantage of the creativity and self-reliance of children.*”).

The inhibiting factors with which she explains this are the lack of time and the extra burden on the pedagogue (“*It can also be creative, but unfortunately I do not have time for this. Many additional programs should be organised for this. And there is never enough time.*”), furthermore barriers raised by the education policy framework, which in many cases make openness and flexibility impossible (“*We are limited very much now primarily because of the*

volume of the teaching material. Obviously, there should be regulations which stipulate what to learn or what to teach, but we can achieve our goal in a totally different way, however, we do not have the opportunity to do it”).

Figure 33: Code list of the pedagogue in-depth interview – Baracs



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The class was laughing already during the introductory task, it could be seen from the beginning that there would be behavioural problems in the group (4), there were many community destroying children causing dissension. Anyway, the pedagogue was present at the workshop all the time, but she did not scold children, as promised. As a characteristic of this age group, boys and girls were sitting completely separately, and they did not move closer to each other even to a minimal degree. The lack of self-reliance of children could be experienced all the time (5).

The most evaluable point of the workshop was during the presentation, however they also had to be disciplined here, because they interrupted each other (6) and they did not really listen to reason.

They worked in small groups in an acceptable way (3), but there were also children there who took themselves out of the group (4), they were not focused, and they were not talking about the topic except for 1-2 groups, the lack of classroom community was very visible. They were very noisy and they got distracted. It was evident that group work was minimal in their school community. Ideas in small groups centred around the following topics: Let us protect the forests, plant new trees, provide animals with homes, take care of injured animals and each other, recycle (9).

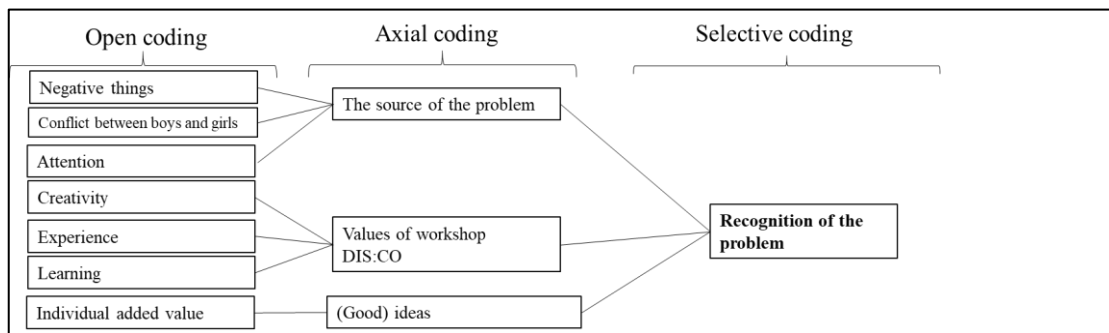
Children of average ability constituted the class, but on occasion there were good comments, that is, the potential of creating something good was in the air. Considering that they did not listen to each other there were no design experience, thus they gave up soon, and were not motivated. They were noisy and could not focus (4). The class-level co-operation was very weak. Finally, girls formed a separate group at which boys got offended, because they were left out from it. The produced product was the idea of a Christmas fair which they combined with a trash pick-up operation (9). Group drawing at the end of the workshop brought class members together (3), contrary to previous processes a development could be observed here with regard to the joint work (8).

Reflection analysis

Students wrote very brief reflections, it is clearly visible that they cannot really express their opinion, but based on the in-depth interview they do not get support for this. (*“Anyway, they express their opinion quite freely, probably because they have got used to it since their early years. Sometimes we have to tell them that we are not sure this is right.”*)

They had a good time during the session, they liked it, at the same time it was obvious that the conflict between boys and girls (*“I did not like that the girls left us out”, “the problem was that the boys were fooling around”*) and behavioural problems were bothering them (*“I did not like that some of us were laughing and chatting all the time”, “It was not ok that half of the class did not work”, “Our classmates were noisy, that is why we could not concentrate”*). They also felt a sense of lack, presumably because of the lack of the product, the accompanying success and the design flow experience. They objectively realised and worded the two dimensions which were the sources of the problem. The first step during such a session is always to reveal the problem which is already a result by itself, since this is the information the next workshops can be based on. And if the problem is identified by the student, then we are one step closer to the solution.

Figure 34: Code list of student reflections – Baracs



Source: Own edition based on the analysis of student reflections

8.4.14 Komárom-Esztergom County, Dorog

In-depth interview

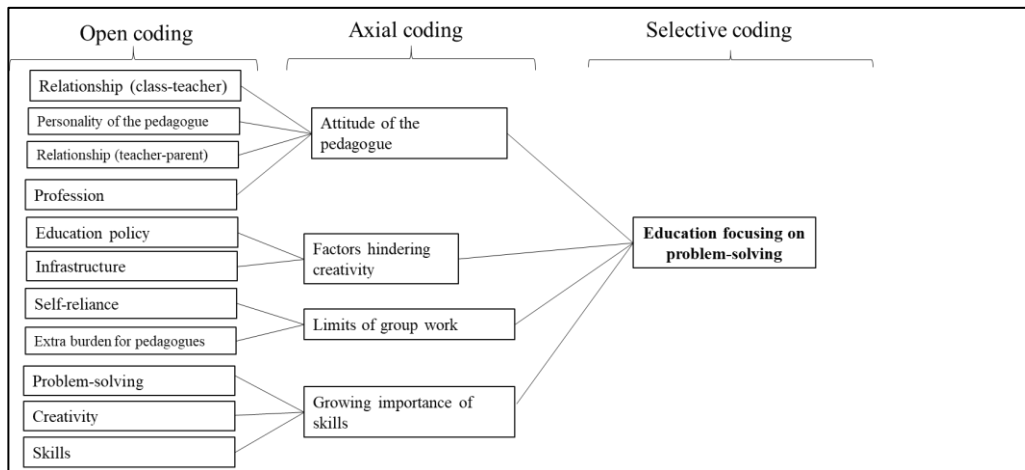
The research was carried out with a young and dynamic homeroom teacher in Dorog, who considers pedagogical career to be her profession (“*I absolutely feel that teacher’s blood runs through my veins, my mother was a teacher too.*”). She thinks that the biggest problem in connection with students is deficiencies at home (“*The biggest problem is the lack of education at home.*”), but despite of this she has a very good relationship with parents (“*I have a pretty good relationship with parents. They are helpful.*”).

In her opinion, both infrastructural shortcomings (“*What I miss very much from school is technical equipment*”) and education policy guidelines (“*today’s Hungarian education trains children for the production line. Learn this and that is it!*”) hinder her tasks and the unfolding of creativity. On the other hand, she thinks that the development of skills related to problem-solving is really necessary (“*Children have to invent new things and resolve certain problems according to their own ideas.*”). In her opinion, creativity can gain ground via the transfer of usable knowledge (“*Education should focus on transferring really usable knowledge, from which children will be able to resolve tasks creatively or non-creatively.*”)

In practice however, we are far from it yet. Group work is not really carried out at this school which is partly due to the attitude and incompetence of the pedagogue (“*We usually do it, because we should, but to be honest, I have never felt that this works so well that they would learn a teaching material in group work. I am not a professional either.*”), but the lack of self-reliance of students is also an obstacle (“*I cannot leave them on their own, because they are not so self-reliant – of course, I control them from the background. But they require much help.*”). She thinks the solution is to start using innovative methods in education from the

youngest possible age (“*But if they do not get used to it at lower primary school, it is terribly hard at upper primary school. They could not work together.*”).

Figure 35: Code list of the pedagogue in-depth interview – Dorog



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

Children of good abilities constituted the class, the separation of boys and girls was less noticeable here. They started working in small groups, they really talked about the topic, and took the task seriously, there were groups which took notes as well (7). The following results were produced during the task in small groups.

1. Let us make our home more colourful, let us not hurt each other, let us inspire people around us, we can also contribute to this.
2. Removing black smoke (factories), more electric cars, more trees, fine for littering.
3. Picking up trash in towns in groups, there is always a responsible group.
4. They urged the election of a class president who would make decisions on behalf of the class.

After this, we switched to wikinomics co-operation. They worked together very skilfully, they had an extremely good dialogue and conversation (3). They called upon each other, only one person was allowed to speak at a time (4). Debate and co-operation arose, like in adult communities. They were the first group to really create something which serves the development of their own community (“*raise your hands if you have good ideas*”, “*I believe we should think of things which we can realise*”, “*let us design trash pick-up programs*”).

There was a little girl who absolutely took up the role of the directing, silencing boss, she always gave the floor to the others (“*please everybody be quiet, you may talk if we give the*”).

floor to you”), which they basically accepted. They recognised phenomena the majority of people do not, or they do but with difficulty and at a later age (“*if we do this, we already contribute to it*”). Children constantly disciplined each other (4). They were brainstorming a lot, they always had new thoughts and they were arguing and giving examples. When they got stuck, they kept working together in a democratic way, concentrating on the joint opinion of the group (“*quickly, everybody speak up one after another and say yes if he/she likes it, like in The X Factor.*”, “*we can vote like children did in The Paul Street Boys in the playground*”). They tried to resolve crisis situations (6) with arguments (“*nothing can be resolved with violence*”, “*folks, we have got two minutes and still nothing has happened*”) and they also realised their responsibility for other members of the community (“*if we do it well, we can influence other people*”).

The joint product was completed with the concept of the election of the class president and the creation of the voting system, which they visualised and orally presented (9). They were the first group to realise *making their home better* by shaping their own community. Previously, the association prevailed that the environment was outside the classroom. However, this class did not open the door and did not leave the classroom. They undertook to develop and improve their own community (8). The election of the class president would facilitate this, everybody would behave better and they would motivate each other. The class president would design the common future of the class whose tasks and responsibilities are as follows: “*he/she may strengthen the classroom community*”, “*he/she would make sensible decisions*”, “*we would take the pressure off of Miss Anita*”, “*he/she would be the responsible person, he/she would make smaller decisions*”. They insisted on the environmental protection activity, thus “*we could go pick up trash under the direction of the class president*”.

This workshop was longer as compared to the previous sessions, because students were so into the creative design process that they could not be interrupted (3). Therefore, it can be seen what results a classroom community can produce during a task centred around a real problem and focusing on the development of skills.

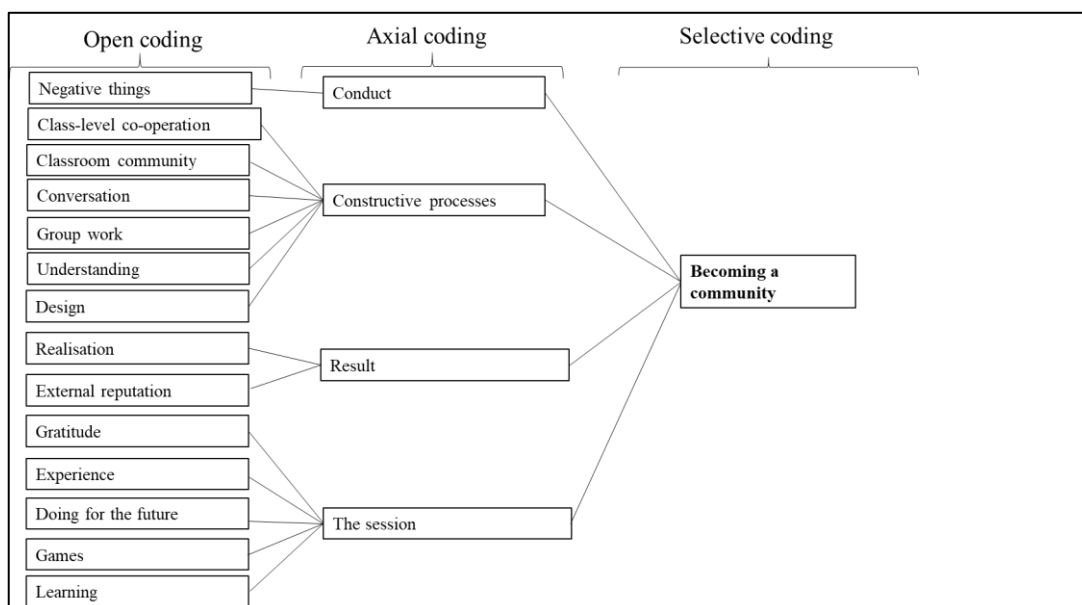
Reflection analysis

Student reflections were based on the received values. They focused on the unity of the class and the forward-looking development of the community from different aspects. The only negative things were the occasional hubbub and the behavioural problems they presumed. This already appeared several times during the sessions, because according to the hierarchy-supporting school system good and exemplary conduct is about silence and discipline, thus

students think that any behaviour different from this is bad, since they socialise in this within the school system. However, the designcommunication workshop gives them freedom, thus conversation, debate and passionate communication – as long as they facilitate the solution - can be part of the creative process.

They mentioned the success of the class-level co-operation (“*I liked that the class worked in such a harmony*”, “*I liked that we could work and think as a normal class*”, “*The joint work was super, especially when the whole class worked together*”) and in connection with this, the strengthening of the classroom community as the biggest value (“*It was very good, at last we had a classroom community*”, “*This program was very fine and I think the classroom community also became a little better*”). Progressive conversations were highlighted, together with the motif of community (“*It was fine that at last the class could have a normal conversation*”, “*I think this has been the most normal conversation this year*”). They managed to get closer to each other at the level of co-operation (“*It was good to see that the class worked together*”, “*We co-operated and we could discuss awesome things*”) and understanding (“*I got an up-close look at how my classmates were thinking*”). They hope that the result will include the development of their own community and also the change of the image the outside world has of them (“*I have realised that if class 6.b. is mentioned, people should not only think that this is the worst class at school*”). In addition to the underlined correlations, reflection analysis can be illustrated with the following code list.

Figure 36: Code list of student reflections – Dorog



Source: Own edition based on the analysis of student reflections

8.4.15 Hajdú-Bihar County, Debrecen

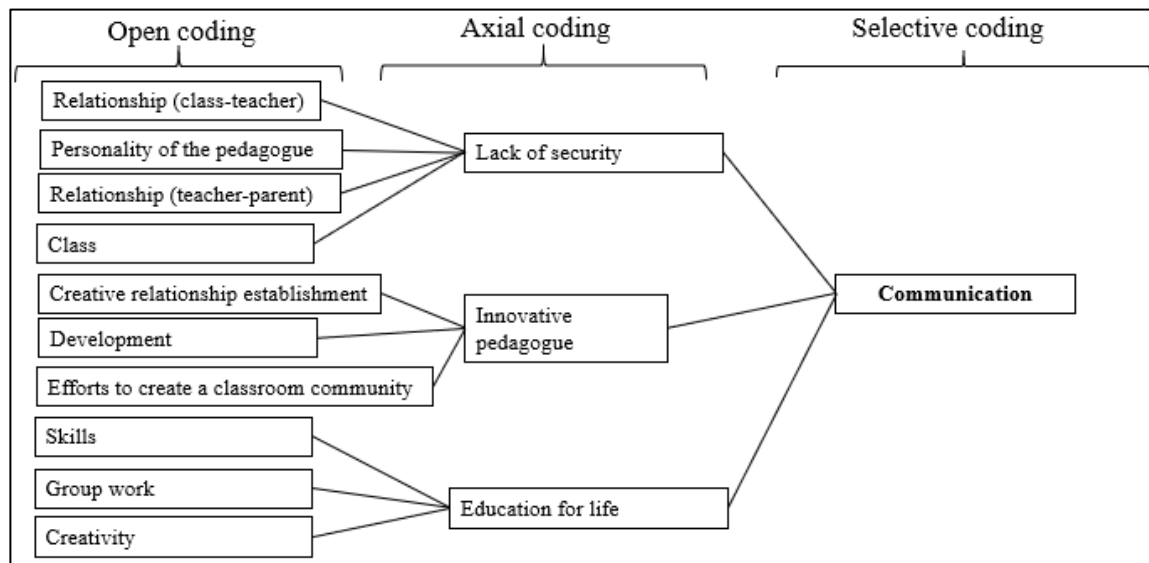
In-depth interview

The interview was strongly influenced by the fact that the classroom in question is currently experiencing problems that are challenging both the teacher and the class community. The family background of the class is not coherent (*“It's a very difficult class in terms of social background. There are 30 students altogether. 21 children's parents are divorced, or are divorcing, or children are living in a mosaic family, and there is no peace in a mosaic family”*), home does not provide the kind of balanced security they need to perform well (*“They do not bring security. They don't bring the kind of certainty that if I go home, I'm safe there, I'm fully accepted.”*). Precisely for this reason, the already very open and innovative teacher feels a responsibility to try to address the problems described above through guided discussions, taking time out of the curriculum if necessary (*“The ethics lesson has its main topic, but we always sit around, talk about the certain concept, watch a sensitising film, play a drama game. There are recurring themes: family, communication, what makes a good community, what makes a good leader”*).

It is interesting that the class does not help each other (*“It doesn't work to help someone who is falling behind in their learning, so it should be clear that they are told what the lesson is straight away.”*), at the same time, they are capable of high levels of performance when focused on a single goal (*“if they have to work together, they can produce an outstanding activity and an outcome that can be shown anywhere, anytime.”*).

It is the teacher's and the school's mission to educate students for life and work, so it focuses on skills-based education (*“In school, an accepted common principle of our education is to prepare children to be able to work together in a way that prepares them to work, to have the knowledge, and most importantly the skills, that they will be able to work with.”*). Group work is the ideal way to do this (*“I don't think that working in a group will go out of fashion. It's now a need for them to be able to work together, to open up and to develop their creativity.”*). He sees his individual success as a teacher and educator in the development of the classroom community (*“I consider homeroom teacher duty to be successful if at the end we evaluate ourselves and the community, then the feedback is that we have gone from here, from somewhere to somewhere else.”*).

Figure 37: Code list of the pedagogue in-depth interview – Debrecen



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The children were welcoming, very likeable and extremely well behaved (4). It was noticeable, as the homeroom teacher said, that they were able to focus on an assigned goal in a very concentrated way. During the introductory exercise, home was identified such as (*Family, love within the family, relaxation, time spent there, nerdy moments, brotherly love, always having someone to count on, finally being free, intimate sphere, time spent with family, protection, acceptance, security, puppy, family love, lots of togetherness, always being understood, trust, complicated, nature, happiness, brothers and sisters, I can count on everyone to stick together*), which would suggest that the family background is stable, but knowing the circumstances, they are more indicative of the values desired.

The presentation is characterised by active attention (1), they raise their hands all the time, they do not interrupt (2). The first thing they did during the short break was to tell their homeroom teacher what they had learned. They also worked well in small groups (3), but the real breakthrough came during the process of class collaboration. One little girl felt the need to take the lead, so she took the work in a very good direction from the start, taking the role of the group leader (*“do we raise our hands to indicate who thinks what?” or “Should we take turns?”*). In the end, it was decided that everyone would present his/her opinion (5), his/her idea, always the group member first, the group idea, then they added to each other, new ideas were introduced. They very cleverly connected with each other's ideas, and it even occurred to integrate everyone's ideas into the project (3). The product was titled “Banana Joe”, which is

an application that aims to educate children to environmentally conscious behaviour, but it is also an application that “*educates parents through children*”. It came out that in favour of improvement, “*the ideas of others should be implemented to have Banana Joe even better.*” (9)

So a product was created (9), for which, even if unconsciously, the basics of a marketing communication campaign were invented: **Logo:** “*We could make a figure of him*” “*We could make a Banana Joe sticker pack on Viber, which you can buy to support the initiative*”, “*We could make an educational film for children, in which Banana Joe tells you how to collect waste selectively*” **Research:** “*sorry to interrupt: we should have a survey on how people accept it*”, **Merchandising:** “*we could make a plush Banana Joe toy for 3-6 year olds from recycled materials*”, **Event:** “*Let's have a Banana Joe day with a flower collection and litter picking event*” They also recognise that capital is needed to make it happen, so this is also coming to the fore. (“*we need to think about making it happen*”)

For visualisation, a table is brought in from outside the classroom so that they can stand around it (5) and create the final stage of the process together (3). After the drawing was completed, they applauded each other and themselves, a real flow experience was experienced. Their attitude towards the product can be described as pride (8), it is included in the group photo, and they also indicate to the homeroom teacher that they would turn the design into action. (“*Aunt Jutka, everyone has already got into this*”)

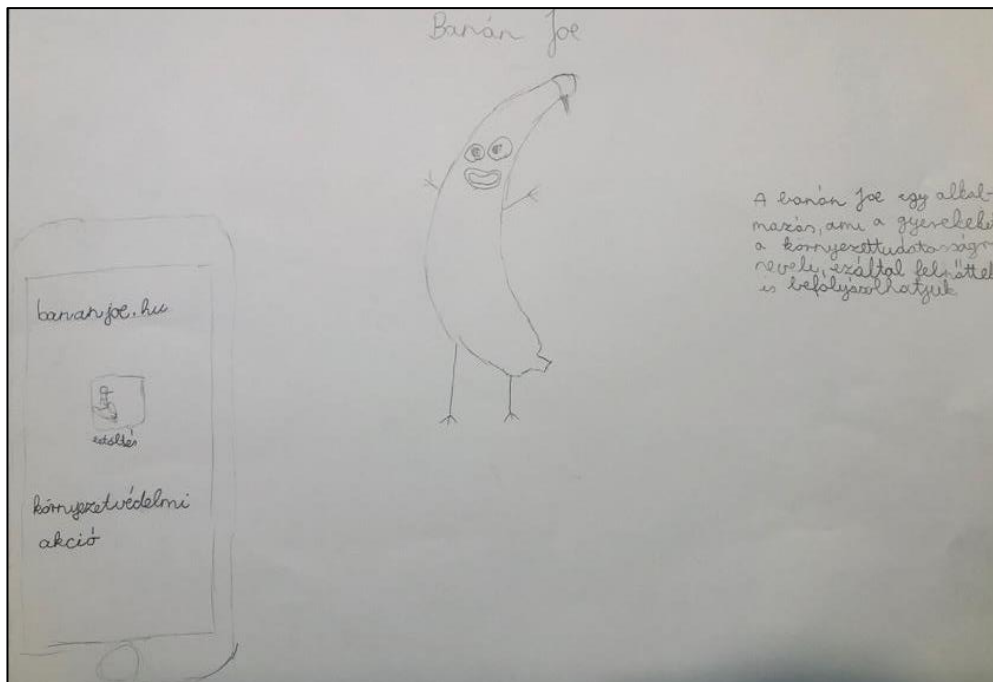


Illustration 2: Group drawing-Debrecen

Reflection analysis

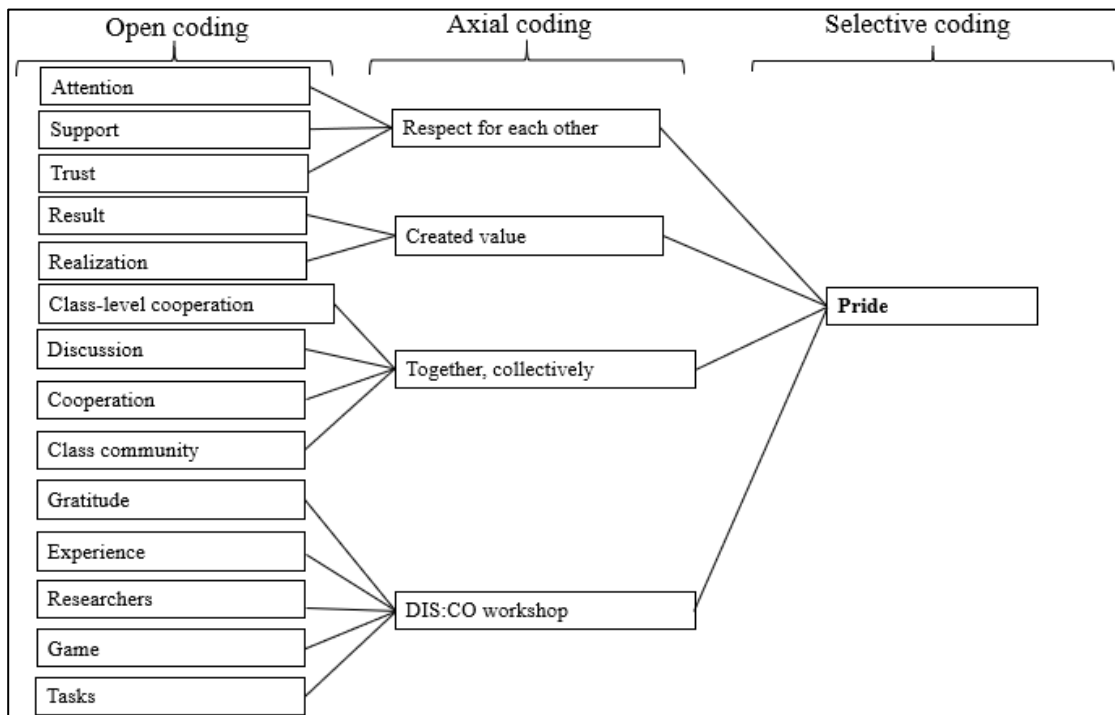
As can be seen in the code list, there are basically four main categories of codes around which students' feedback through reflections can be structured. The task, the environment, the empathy-based approach brought out their respect for each other. They supported each other's ideas (*"We worked together and supported each other's ideas"*), listened to each other (*"I also cared about what others had to say, so we listened to everyone, and I think everyone enjoyed that"*) and felt trust in each other (*"For me, the best thing was when my classmates trusted me"*).

They have created value, they are aware of their individual and community achievements (*"I was happy to participate in this programme and I give myself a good rating, but the programme gets 5 stars, but it certainly deserves 10 stars"*), they are proud of it and appreciate it, related to that, they would be happy to participate in its implementation (*"But if it were to become a reality, I would be happy to help because something like this could become a global project"*).

What they liked most was that they achieved this success together, as a team (*"For the first time I felt like we were a team"*), as a class community (*"It's so nice to see the whole class working together"*), with the shared experiential discussion being an integral part of this, in addition to the group work (*"I think the discussion about the implementation of the programme was the best"*).

In their reflections, they thanked for this opportunity for the session they had been part of and expressed their gratitude on behalf of the class (*"Thank you Aunt Daniella for giving me such a great session today"*, *"Thank you so much on behalf of the class"*, *"Thank you for travelling so far"*).

Figure 38: Code list of student reflections – Debrecen



Source: Own edition based on the analysis of student reflections

8.4.16 Győr-Moson-Sopron County, Tápszentmiklós

In-depth interview

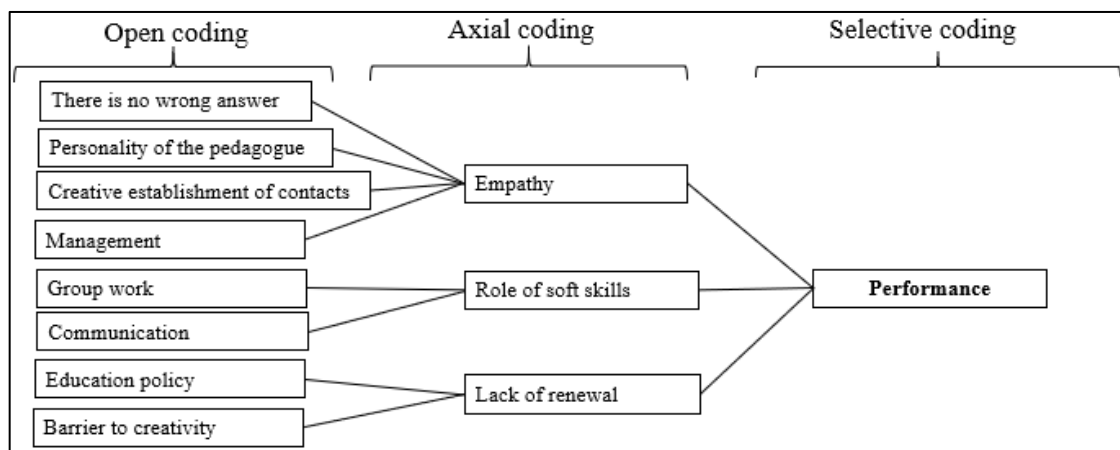
As can be seen from the code list, the guiding principle of the in-depth interview is performance and its evaluation. The question was raised as to how, if the teacher is innovative, open-minded, innovative, and attentive to the development of skills, how performance measurement and accountability can be achieved within a rigid educational system. In this context, I would also like to refer to a related literature analysis. Sahlberg (2009) points out that test-based, easily measurable accountability is a barrier to creativity. In other words, to create and develop creativity, it is worth rethinking performance measurement in an innovative approach (Sahlberg, 2009).

The teacher interviewed has an innovative approach, with a high level of empathy towards children. His immediate supervisor and his educational environment are supporting this (*“We have a permissive boss and a good atmosphere. He lets everyone decide how much they work. If someone is enthusiastic, he is happy, but he doesn't impose it on those who are not.”*), despite the fact that his colleagues do not have this attitude. He takes time to make creative relationships, saying that they only work if *“the teacher takes care and puts energy into it”*. He accepts mistakes (*“The other thing is that you can make mistakes, you don't make fun of them,*

you don't laugh at them.”), and he allows room for students' opinions, unlike his fellow teachers (“In today's education system, 9 out of 10 teachers do not accept the child's opinion.”). It is difficult to be an ideal teacher in everyday life, as every child requires different educational goals. He sees the essence of creativity in adapting to change and in a high degree of flexibility (“*every child is different, every year is different, the world changes incredibly fast, and if you are not creative, I don't know if you should be teaching*”). In many cases, this is hindered by the existing educational policy framework (“*In an ideal school there would be no curriculum, especially not the one we have now. It's outdated, obsolete... I suffer a lot from that*”).

She strives to give knowledge that is useful for today's students (“*It's important to be able to express yourself, to be able to communicate, to want to speak, to dare to stand up, to be able to control your body language.*”), so she also pays attention to developing skills (“*I also write a lot of reading comprehension. This is a competence that is useful in real life. Because Attila József's autobiography is less usable...*”). She has integrated the use of group work into her everyday teaching method to foster cooperation, where the product produced is as important as the process (“*I, when I do group work, it's cooperative work. When we produce something*”).

Figure 39: Code list of the pedagogue in-depth interview – Tápszentmiklós



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The students' behaviour was exceptionally good (4), they were disciplined. They did not need to be chastised once, listened to each other, did not interrupt each other, waited for their partner to express their opinion (4). They knew how group works function, small group negotiation was excellent (3), they seemed to have some experience in this, but in a larger group it was more difficult to cooperate. The small group ideas focused on the environment and

helping the poorer sections of society (9). In class level collaboration we were really excluded (5) the circle was closed, and they started talking quite quietly. It was hard to hear them, and then one of the biggest problems was that they could not hear each other. At the suggestion of a member of the community, they went through the group ideas (3). They listened to each other, they talked. They did not develop well-defined group roles, they functioned as equal members of the community. They did not find a solution, which led to a temporary nadir and a lack of prospects. They wanted to make one of the three small group ideas at all costs, they could not get away from that. They tried for a while, then gave up, the group broke a bit (*“it's no good if you're the only ones talking, you tell us”, “let's listen to each other, because now we're in separate groups”*).

The resulting product was called the Electric Van to Help the People in Need, which was not developed in detail or turned into a common idea (9). The van would have a solar panel on the roof to power a fridge with food inside. They would go from village to village like a bus stop, stopping where needed, collecting, and passing it on to those in need. They define the value of this solution as not polluting the environment and helping the homeless and people in need (8). One of the risks was whether they would reach the people who really need them. They sought to achieve the objective good, but also expressed that it was not only up to them (*“there will always be someone who is not good. The main thing is that the person you are aiming at should be good”*). The final chord of the session was the visual impression of the product in the form of a collective drawing (9).

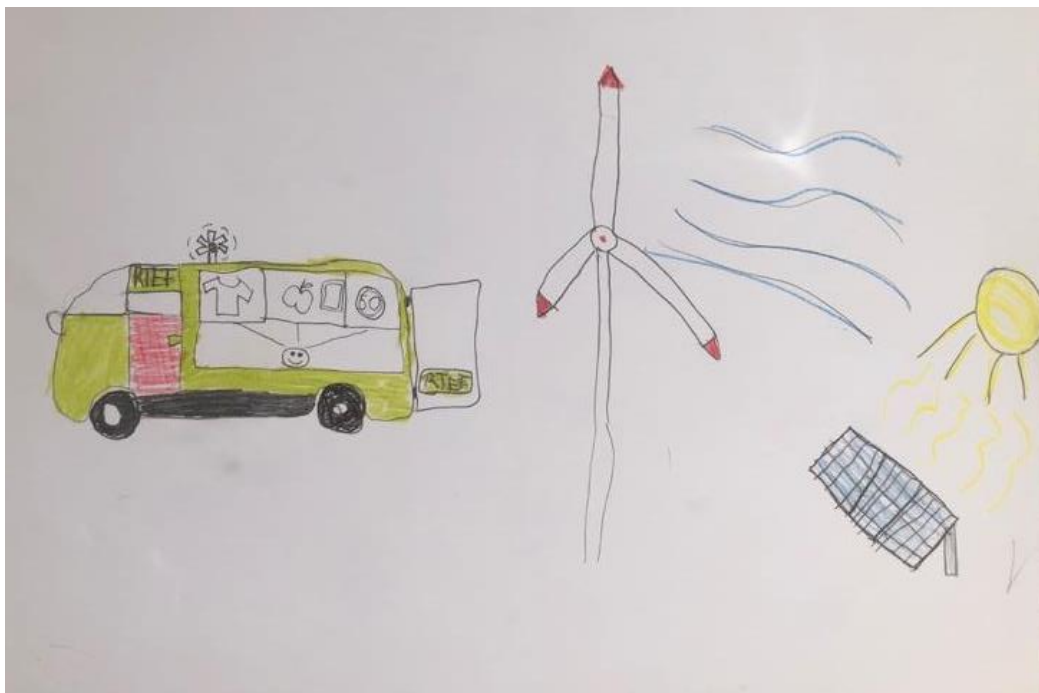


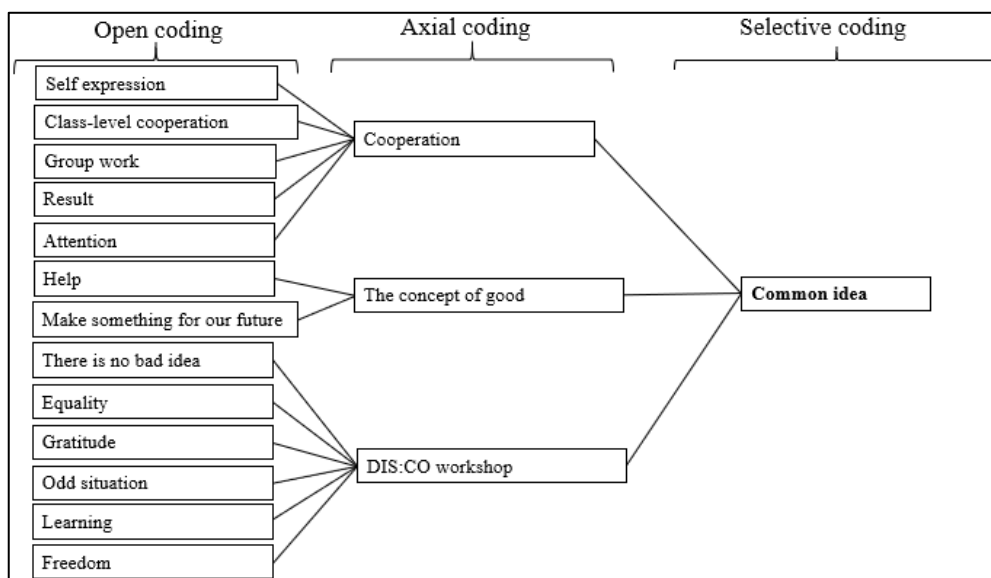
Illustration 3: Group drawing-Tápszentmiklós

Reflection analysis

It was noticeable in the students' reflections that they were given a lot of essay assignments (as the teacher mentioned in the in-depth interview), because they wrote very coherently, producing long and meaningful reflections. From the many good ideas, a collective result was created, recording both their own (*“This idea came from many, many good ideas, including mine”*) and the community's collective contribution (*“We worked together, we put together everyone's ideas”*). The path to a solution was understood as a process (*“For me, my favourite part was the collective brainstorming”*), in which community members could listen to each other and express their opinions (*“I really liked being able to express my opinion and listen to others”*). The attitude of the researchers (*“They were kind and treated us with love and patience”*), the possibility of making mistakes (*“I liked the fact that if someone said the wrong thing, Aunt Daniella didn't scold anyone”*), the freedom (*“I felt good, because it was an unusual class and it was such a relaxed class”*) and the sense of equality (*“It was nice that everyone was equal, so I felt good”*) were encouraging for the students, as expressed in their reflections. The unusual layout of the space supported community cooperation, which was also recognised and evaluated as a positive point by the students (*“I also liked that we sat in a circle in the middle and not on the bench like in maths class”*).

There was a strong sense of connection to the product created, a desire to help, but also an associated sense of objective good, i.e., the good feeling we get from doing good for others (*“If we support poor people, it is a good feeling for me, a good act”*).

Figure 40: Code list of student reflections – Tápszentmiklós



Source: Own edition based on the analysis of student reflections

8.4.17 Somogy County, Kaposvár

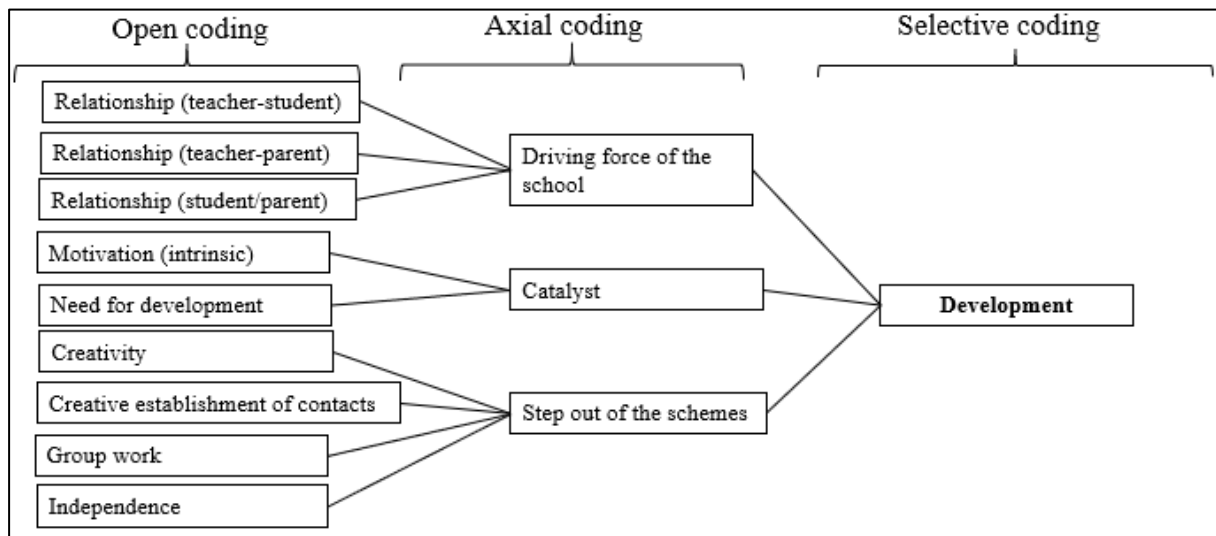
In-depth interview

In the Kaposvár study, my interviewee was a male teacher of English and Physical Education who considers himself less open-minded. He has a good relationship with his class, but it is mostly limited to the walls of the school. Despite this, he found that there was a strong sense of class community. He sees the school as the main infrastructure deficit, but the quality of education is more determined by the teacher-parent-student relationship (*“a school is strong because of the people in it. The infrastructure can be good, but if the relationship between children, parents and teachers is not right, it will not work well”*). The catalyst, the basic principle of innovative efforts, is to encourage children to develop, to create intrinsic motivation (*“We have to develop in ourselves and in the children, as teachers, an inner need to develop themselves”*) and at the same time the need for continuous development in the teacher to be better and better (*“If he or she does not feel the need to train himself or herself, to invent new things that work, he or she will burn out in no time”*).

He links the concepts of creativity and spontaneity (*“Spontaneity is a very important part of the work of a teacher and is linked to creativity”*), and he describes creativity as the appropriate use of knowledge. He considers that creative interaction is only realistic if you know the student and know how to address him. Games gives the teacher an excellent insight into the child's personality (*“No one can pretend when playing, he is the sincerest when he is playing freely. That's where the qualities of how much of a team player you are, how much you give to others, how selfish you are come to the surface”*).

He uses group work and related innovative methods (*“my colleagues and I try to decompose whenever possible, rather than forcing frontal class work.”*), but the children are not always independent enough and often need to be guided (*“Sometimes they need to be nudged. Teacher intervention is sometimes necessary.”*), so she prefers controlled, coordinated tasks linked to objectives, group roles and time.

Figure 41: Code list of the pedagogue in-depth interview – Kaposvár



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The behaviour of the class of 24 was good (4). There was a relatively high level of noise, but they waved to each other when they had to (5). They were attentive, interested and reported a lot (1). During the presentation there were many valuable contributions and active involvement of the class (2). Small groups were a bit buzzing but still focused (3). They were divided into 5 groups, where they saw the improvement of the home in the form of litter picking, rainwater harvesting and renovation of public toilets.

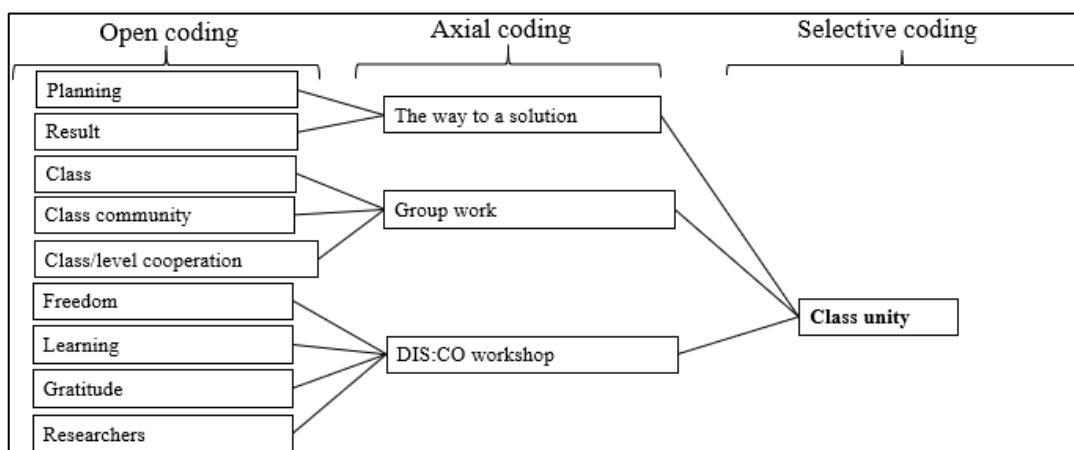
Working in a large group, they felt a sense of responsibility, quickly developed group roles and listened to each other (5). The initial small group ideas were put to a vote (“*wait, wait: each group tell us their ideas*”, “*at the end we vote, if there is a tie, we combine the ideas*”). The groups told their ideas (9) and then talked a bit about each one, asking each other questions, but not stopping at one idea, but going further. They reported, asked questions and left time for discussion on each idea. (“*Next group, or are there any more questions?*”) A lot of their time was taken up with listening to everyone (7) and discussing, so there was less time for joint planning, but it was really a creative process that they went through. They ended up voting, but they didn't really want any of them to win, but rather tried to figure out how everyone's idea could be a winner (8). The “*For a Better Earth*” enterprise was formed, with a logo designed and a precise process to record the activities, with the proceeds from the sale of the innovative medicine as a product to be used for charitable purposes such as litter picking, rainwater harvesting and the renovation of public toilets.

Reflection analysis

The reflections were defined by the class unity as the highest value of the occupation. This was mentioned in the dimension of class collaboration (“*I liked the most the joint work, when the whole class was involved*”), but also the class working together was reflected positively by many students. They reflected on the valuable, quality time and the associated experience and happiness that the community gave them (“*I really liked that we all participated*”, “*I have never been so happy to be with my classmates*”, “*We were finally able to work together as a proper class*”, “*It was good to spend time together with the class*”). They also saw the strengthening of the community as part of the process (“*The programme was class-building*”, “*The class was cohesive*”).

It is also important to point out that the design and the result were intertwined in their reflections (“*We felt the difficulties of creating something new, what to pay attention to, how to think it through*”, “*It was good when we circled together with the class the essence of the collected projects*”), which brings into focus the basic pillar of designcommunication, that the solution and the way to the solution often evolve and take shape simultaneously. The freedom (in space and time) given during the session was enjoyed and used (“*It was good to have time to discuss our ideas*”).

Figure 42: Code list of student reflections – Kaposvár



Source: Own edition based on the analysis of student reflections

8.4.18 Zala County, Alsópáhok

In-depth interview

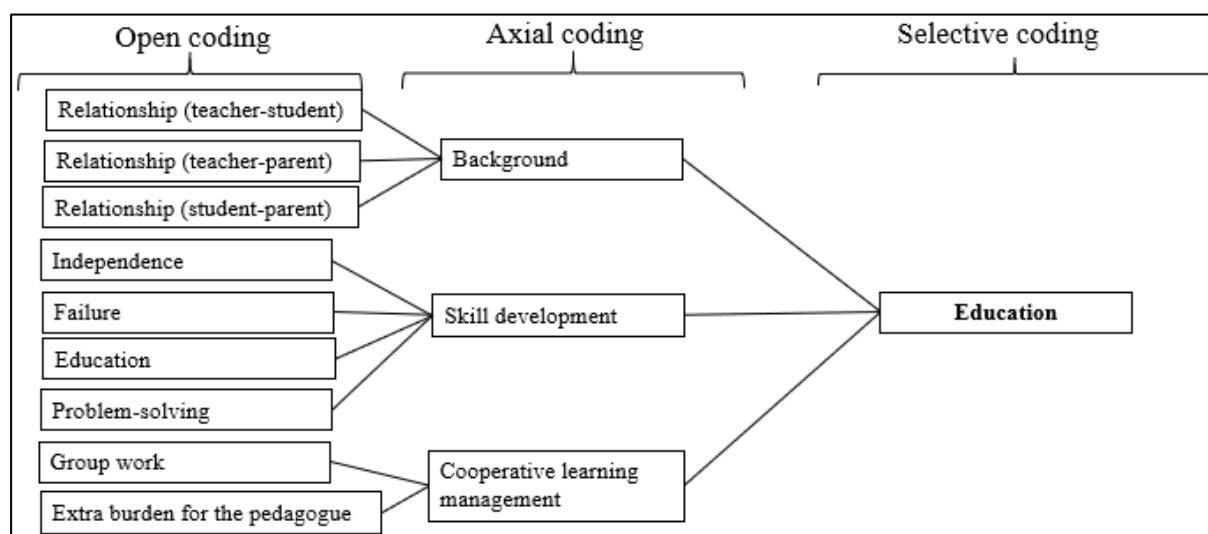
In Alsópáhok, I had the opportunity to conduct the research in a family-like school, where the interviewee was a teacher who had been in her career for 40 years (*“We are a family-like school, we have already taught most of the parents.”*). The study performance of the class is said to be excellent, but the sociometric survey shows that the class community needs to be improved (*“not the right one. There are cliques. But if you need them to, they can stick together for certain things. Around 70%. There is still room for improvement.”*).

Teachers' main task is assumed to be education rather than teaching (*“the least of our tasks nowadays is education, but teaching.”*), experience shows that students are getting less and less of this from home (*“parents at home largely do not play that role.”*).

The development of soft skills is also a central issue here, and the school's task should be, among other things, to prepare the student for problem-solving (*“Certainly there are things to be taught that are unnecessary, and the great lexical knowledge of today's world is outdated. I want a school where children can solve problems, where they can get the keys to how to solve a problem. To be open-minded.”*). In addition to the need for problem-solving, greater autonomy (*“Children should achieve much greater autonomy”*), the ability to transfer knowledge (*“His knowledge, not only his intellectual knowledge, but what he has created, could pass on to others.”*) and to deal with failure (*„their tolerance to fail is practically zero. This will most certainly not lead to good in the long run”*) are also challenges to be addressed.

It questions the effectiveness of traditional group work but assumes the potential of cooperative learning organisation (Johnson & Johnson, 1987). This is often hampered by time and the extra tasks that teachers have to do (*“This cooperative, which is the trend nowadays...I somehow see that as a much better yield. It's just that it's very complex and requires a lot of preparation. When you're running here and there for 26 hours a day, it's not easy to do it.”*).

Figure 43: Code list of the pedagogue in-depth interview – Alsópáhok



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

A very intelligent, active, lively group (4), they raised their hands during the presentation (2), they were very nice, direct, honest and courageous in their opinions (1). There were no disadvantaged pupils in the class, they were well-off, well-adjusted children. Who might not have spoken up, but sometimes when I asked a question they knew the answer straight away, they could speak up (2). During the presentation, they had a break for snack when they had to go out to get food, and that broke the flow a bit, then it took time to regroup (4). The children told us that group work is not at all a feature of their daily lives, as they do not progress with the curriculum until then, so teachers do not use it, and pair work is rare.

In a small group, although the topic was discussed, I did not feel that there were any really strong ideas (3). This group was one of the exceptions who were not concerned with the protection of the environment (9).

When they started to work in large groups, it was interesting that from one moment to the next they sat down on the floor in the middle of the circle, huddled together and started talking (5). I will not say they didn't interrupt each other (6), but they did have a constructive discussion. There was one little boy who clearly took the lead and said that the product should be a “class house”, so the groups' separate ideas were not discussed, but they added their ideas during the implementation (“Let’s have two floors, one for boys and one for girls”, “a common cinema”). (8) For a while, they were detached from reality (8), and then they started to shape their ideas towards realisation, so that they could create it themselves (“do something that we can actually do”, “design a realistic house”). Interesting tendency to go from “everyone has a separate

floor” to everyone being in the same room, as it's all about building their community (“we study together, we have fun together”).

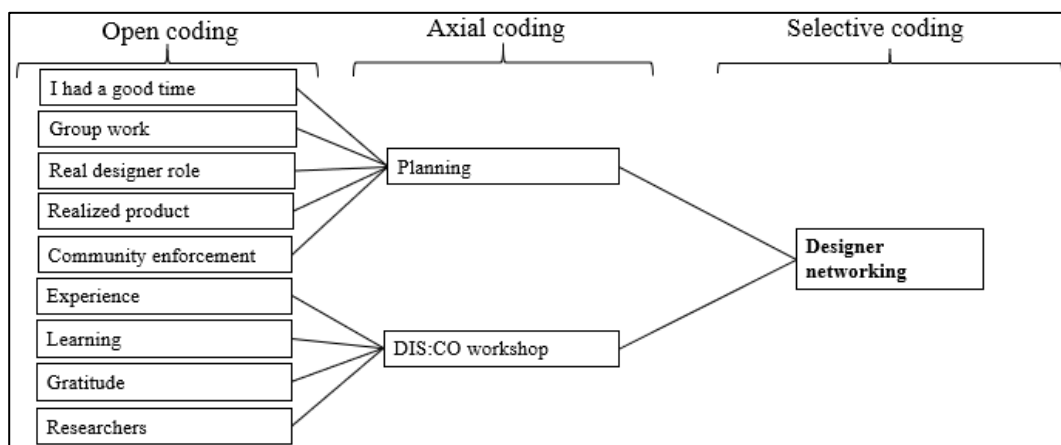
When they finished, everyone was back in their seats in a moment. Then they went back to the drawing, where there were fewer people involved, but overall, it was a collaborative effort that they clearly enjoyed. The project was summarised by a little girl (8) and it was stated that the aim was to “build a team and become a better community”.

Reflection analysis

The student reflections were clearly built around the key category of design. They approached it from different angles, but the design of the common house was the most influential for them. Beyond the fact that they felt comfortable with the design (“It was all very good, I liked the creation of the common house the most”), they experienced the moments as a team effort (“It was a lot of fun designing a shared home, working as a team”). They put themselves in the role of real designers (“It was good to be designers”, “I thought as a designer and created with my peers”) and were satisfied with the product they created according to their own ideas (“I think it was a good house we created together, according to our own imagination.”). The process of planning allowed them to get to know each other better (“I learned a lot about my friends”, “I had a lot of fun because we got a bit closer as a class”) and last but not least, it contributed to strengthening the community (“Now I felt that the class really stuck together”, “Planning a house together is good for making such a class community better”).

They used strong words to describe the experience (“It will be a very **memorable** day”, “I loved it all”, “I felt extremely well”, “I had a great time”) and stated the passage of time as a negative side (“Time went by very fast unfortunately”).

Figure 44: Code list of student reflections – Alsópáhok



Source: Own edition based on the analysis of student reflections

8.4.19 Veszprém County, Tapolca (second-year students)

The research in Tapolca can also be seen as a kind of outlook, since instead of the usual sixth grade students, the focus of the study was on second grade students. It is important to see whether designcommunication as a self-developed workshop based on elements of educational methodology can work regardless of age. The aim is to explore whether there are and, if so, which elements might need to be changed in order to allow space for the development of soft skills through the session in a younger, more creative (Kaszás, 2011) age group.

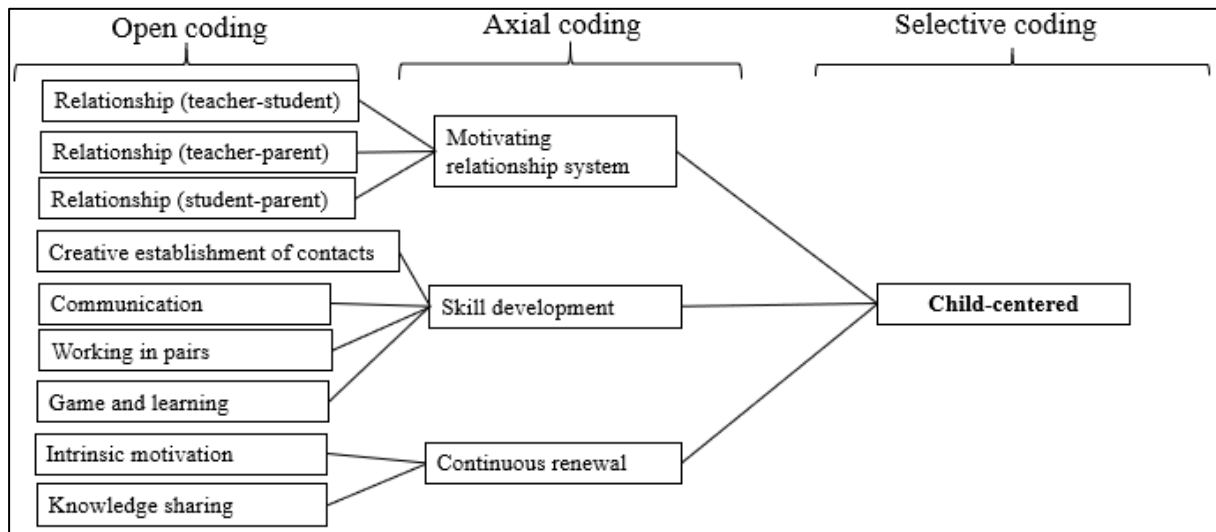
In-depth interview

The homeroom teacher of the second-grade students is a real teacher, who has a love for children and considers her profession as her vocation (*“I love children, my hobby is also my job”*). Group work is not typical, they prefer to work in pairs, which is something the pupils explicitly demand, often asking for it before they can do the task (*“They demand it, they want it. We work in pairs, and they ask if they can do the task in pairs.”*). However, she integrates her innovative approach into everyday life through other methods, paying great attention to conversation (*“On Monday mornings we don't start learning straight away, we sit around and have a conversation. That's how the week starts. They form a little circle on their own and wait to sit inside. They need it”*), taking advantage of its impact on communication and community building, but also of the importance for him of the playful form of learning (*“you play with them, you teach without them noticing”*).

He believes that it is teachers and the school framework who and what have a responsibility for children's development, since essentially every student enters the school gate as an “ideal” student, so it is their responsibility to become who they become (*“They all come in as ideal students, and then we can either keep them as ideal students or we spoil them”*).

He considers development and renewal to be one of the most important characteristics of a good teacher, which he builds on two pillars. The first is intrinsic motivation, the inner need to improve (*“I invent a lot of things, it's a career, you have to constantly innovate and invent something to make it more interesting”*), the second is the inspiring colleagues around him, learning from each other, sharing knowledge (*“You see it from each other, from younger colleagues, you see it in presentations, you hear it, you apply it, you improve it in your own class”*).

Figure 45: Code list of the pedagogue in-depth interview – Tapolca (second year students)



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

It was a lucky situation that the students already knew me because of the previous workshops in Tapolca, so the relaxation process was shorter, and the contacts were smoother. The first change was in the presentation, simplifying it and concentrating on introducing the most important concepts (1). We did not go into detail about definitions, we did not use foreign words for them, we explained everything in plain language, illustrated with examples to facilitate understanding. They expressed themselves surprisingly well (1) and overall, the four years between second and sixth grade were not noticeable. In some situations, the group functioned better as a community of sixth grade students (or even adults). Their questions, their answers, their solutions to a situation that arose during the presentation were extremely meaningful, creative, and sometimes surprisingly mature (2). The class was actively engaged for two hours (4). An age group for whom even forty-five-minute lessons are a challenge.

A short break was taken before the group work. The three, randomly formed groups of four to five people were quite skilful in their discussions, focusing mainly on environmental pollution (3).

In the group work as a class, they were very nice, pulling closer together as I stepped out of the circle. Non-verbal communication also indicated that they were a team who would work together (5). A little boy and a little girl led the conversation. There were no clear group roles, but they listened to each other (4), each gave their opinion, and then a vote was taken by another little girl. They organised the discussion among themselves in a quite incredible way (7) (“let

them say it”, “*well, let's get on with it*”, “*let me finish*”, “*who votes*”). The product they created is the “Sea Savers” organisation, who protect marine animals by cleaning up the sea from litter (9).

The details and the drawing of the result were not so smooth, the boys (since it was not their idea that was chosen) withdrew from the work, but the girls continued to work together (8). They even drew a logo of an octopus stuck in a wheel (9). They were proud of their result (8), but only partly thought it was a joint product, which could be linked to the separation of boys and girls.

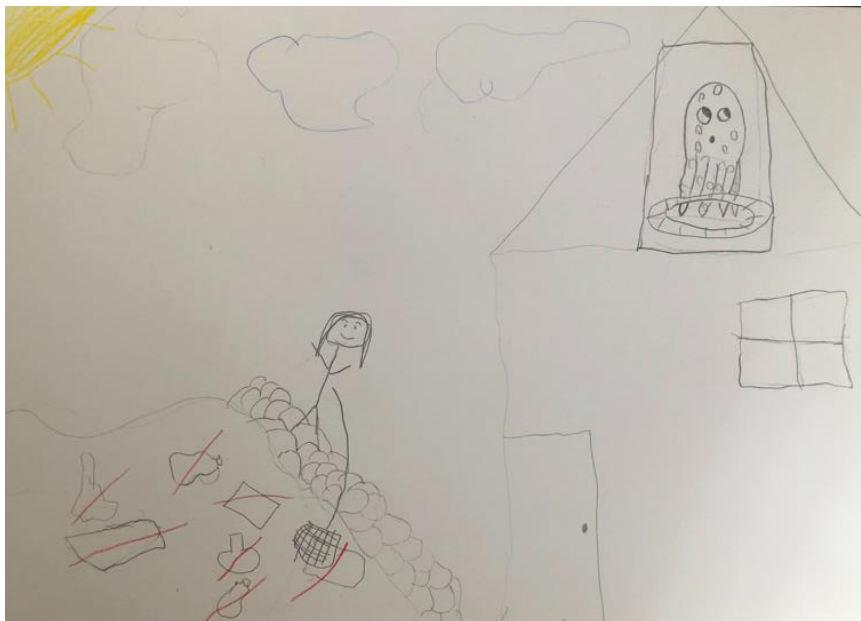


Illustration 4: Group drawing-Tapolca

Reflection analysis

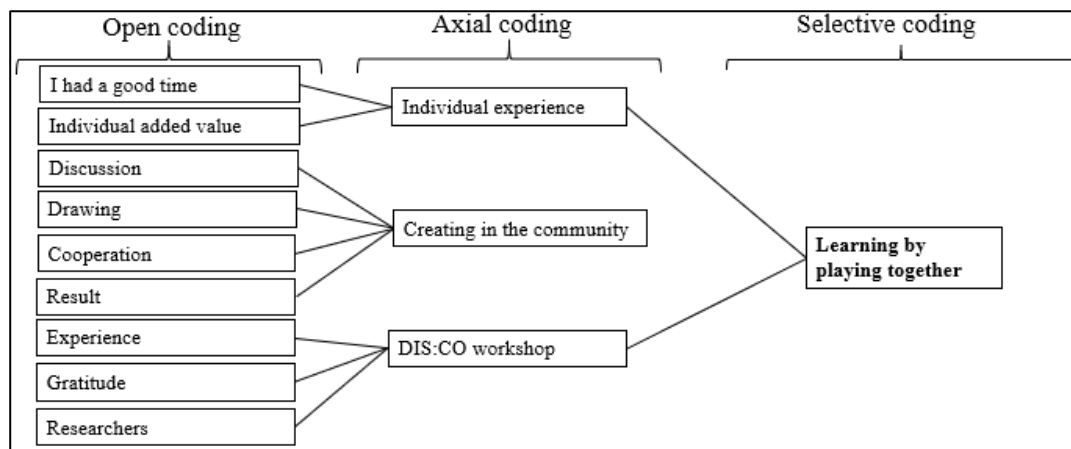
The students' composition, vocabulary, expression, and spelling produced reflections of a higher standard than many sixth formers. Of course, they interpreted the session in a different context, but overall, there were many similar insights, only structured along a simpler logical line in their writing.

Without exception, they felt comfortable, recognised their own added value to the product and could articulate it accurately (“*I had good ideas*”, “*I said things and I said clever things in the game*”). The most favourite part of the workshop for them was drawing (“*It was good to draw*”, “*I really liked the way we drew*”), the role of learning through play is still significant in their lives, it is (as the teacher said in the interview) something that should be applied by the teacher at such a young age.

Community, collaboration, were also factors in the planning process (“*I liked that we thought together when we worked together*”, “*I liked when we sat in a small circle*”). They also reflected on the outcome, proud of their achievement, which was supported by their reflections (“*And I think the idea we created was really good*”).

It is interesting that gratitude (“*Thank you for the programme*”, “*It was a great day, I was happy to be here*”) was also prominent, suggesting that the session was recorded as a value and experience (“*It was exciting*”).

Figure 46: Code list of student reflections – Tapolca (second year students)



Source: Own edition based on the analysis of student reflections

8.4.20 Baranya County, Pécs

In-depth interview

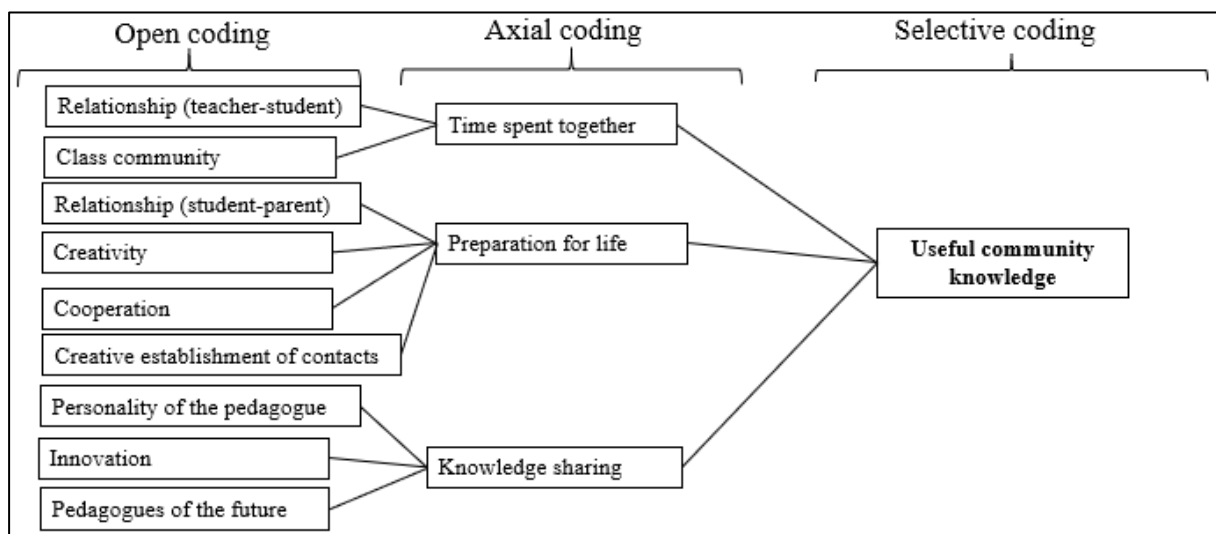
In Pécs, an in-depth interview was conducted with an open-minded teacher who is looking for opportunities. Her relationship with her class is not the most fortunate, due to the little time spent together (“*I miss this, this constant presence in their lives, and they feel it too, that I'm not always there.*”). Nevertheless, she tries to compensate for this with extracurricular activities (“*We try to do things when they can really work together, and they need to work together*”). Acceptance and understanding of each other in class are less effective, but when there is a well-defined goal, they are able to work together (“*if there is a goal, we can get together*”).

There is little or no sharing of knowledge between teachers (“*it is not typical for me to have insight or to ask questions about other people's work. There might be a need for it, but older colleagues are reluctant to talk about their teaching methods and how they teach*”), although this would mean a lot to a development-oriented person like her (“*I'm very open to any ideas I get and to seeing what others have done*”). She is confident that younger colleagues

will be more in line with this (“as this teaching profession gets younger, I think there will be a need for it”)

An appreciation of skills emerges during the interview. Both creativity (“jobs are not going in the direction of just sitting and watching. You need imagination and creativity to adapt and find your place in the world later on”) and collaboration (“you’ll have to work with people you don’t want to work with when you get into a job, you’ll have to learn how to do that now. This is what I am trying to teach them here.”) as a skill that is essential for being an employee, and therefore it is the teacher’s responsibility to prepare the student for this.

Figure 47: Code list of the pedagogue in-depth interview – Pécs



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

It was a nice friendly class of 20 people. Children from average backgrounds, none of them particularly disadvantaged, a primary school in the suburbs of Pécs. They were communicative, they raised their hands (2), and what we asked at the beginning to listen to each other when someone was talking worked, there was no problem with their behaviour. We started to feel a little bit towards the end of the presentation that they were struggling (1), but overall, there was no problem with that. They had to take more breaks.

It was in the group work where the children were able to develop (3). They talked about the topic all the time in small groups, really good conversations happened. They also approached the improvement of the home from the pollution/environmental side (8).

The real point and amazement were realised in the large group work (5). Initially, the plan was to vote for the best of the four ideas, but then they started to discuss them, and a constructive

conversation emerged (7). The groups applauded each other, acknowledging each other's work (8). They did not build the project around one problem but raised awareness of many important issues about protecting the environment and helping the disadvantaged (9). They started from group ideas, but then they took it further and an independent idea started to come to life (3). Typically, the process itself was more important than the outcome. The project was given the name of the Conservationist Unit and a logo was created, depicting the Earth with an exclamation mark in the middle. (8) In terms of the process, everyone was listened to, given space (“*Raise hands, who else has an idea?*”), and encouraged to work together to find a solution (“*One of the most important things is to find something that everyone likes.*”, “*No, it's not one person drawing, let's draw together.*”) In the end, they had such a good conversation that they had to be under minimal pressure to do it in time.

Proud of their achievement (8), they verbally expressed to their class teacher how well they had been able to work together, something that had never been done before, and the class said goodbye with the wish to incorporate it into their everyday life.

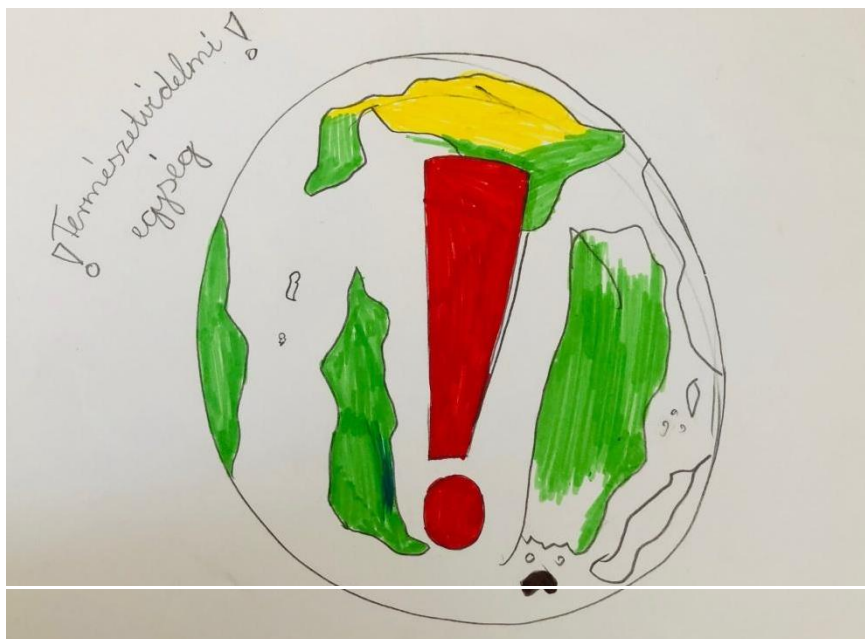
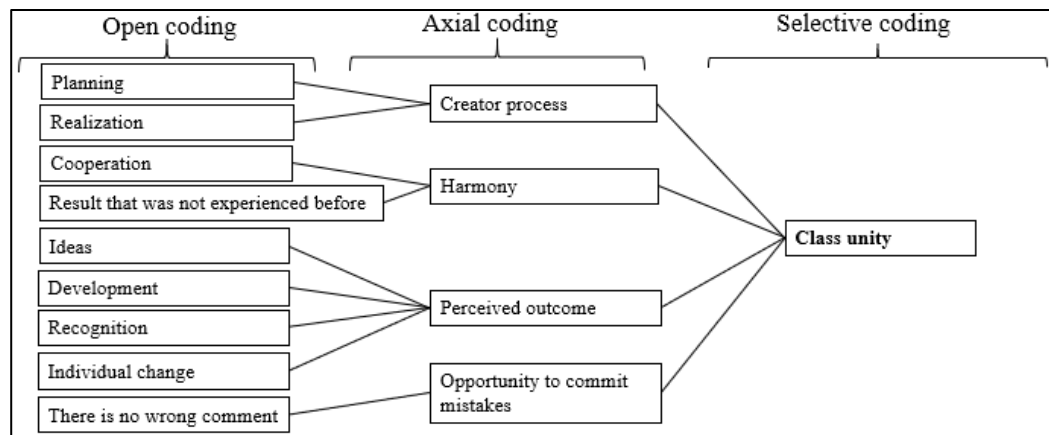


Illustration 5: Group drawing-Pécs

Reflection analysis

Figure 48: Code list of student reflections –Pécs



Source: Own edition based on the analysis of student reflections

The students highlighted the planning (“*I really liked the brainstorming, as most of the class said very good things*”) and the implementation (“*The implementation itself is very good*”) in their writing, but what came out most was the joint, effective collaboration of the class. Related to this, there was a sense of harmony and agreement (“*I felt good because there was finally harmony between the class*”, “*It was good to see the class agree*”). What also enhanced this was the experience that they had not had before at class level, this session was a breakthrough for them at community level (“*I think it was the best group work the class has ever done*”, “*I felt really good, our class has never been able to develop so well*”).

They recorded the generation of good ideas as an outcome (“*Very good ideas were generated*”), but also that through the workshop they got closer to their peers and got to know each other better (“*I learned a lot about my peers that I didn't know before*”). The workshop also brought them change, development and realisation, which could be seen in the perception of the class (“*The attitude of the class has improved a lot in my eyes*”, “*Teamwork was not the best before, but it's different now*”) and in their own behaviour (“*I don't usually talk much in such programmes, but I had some ideas, and we wrote them down*”).

In conclusion, I would like to draw attention to the hierarchical relationship system of the school, the no-allowance of mistakes, the temporary breakdown of which has also remained as a value-forming element in the children (“*I liked that you said that there are no bad comments or ideas, because that's not how it is in class*”).

8.4.21 Vas County, Szombathely

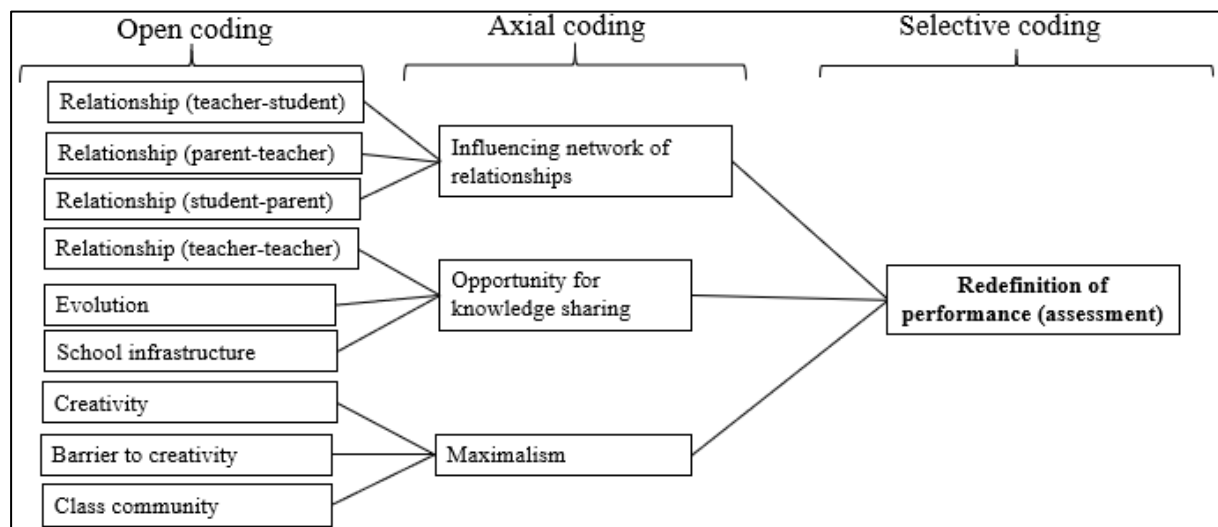
In-depth interview

The teacher from Szombathely is a direct, young, innovative and positive language teacher, who also sees her job as a vocation (*“Even in difficult circumstances, I stay loyal, that's all I can imagine. It's what I've wanted to be since I was a child.”*). She has a good, direct relationship with her class and with parents (*“I know the parents well. I start the parents' meeting in such a way that my phone number is not taboo, and you can call me.”*). There are no disadvantaged children in her class, a normal family background, selected students with a 4.7 grade point average. She cites the children's perfectionism as a problem (*“If I were to say where they need to improve is the crazy perfectionism they bring from home”*), which leads to perpetual competition. This competition is often generated by the parents, even though it does not have a positive effect on the classroom community (*“They don't always tolerate well those who are underachievers”*).

Everything is given in the school, teachers help each other to develop (*“We stick together, more people more brains, more modern knowledge.”*) and the right infrastructure (*“I am very satisfied with the facilities in our school. The blackboards, we have beautiful, nice furniture, we can paint our classrooms. We also have 30 tablets that we can use”*) also give teachers and students room to grow, to use new methods.

She also attaches importance to creativity in life education, in making a difference (*“It's also important for getting into life, fitting in, making a difference. I think that a creative person can find joy and fulfilment in everything, in his work, in his studies.”*), but in his classroom it is precisely perfectionism and thinking in terms of marks and grades that often hinders this (*“B classes are not always creative. Because they think very much in terms of marks, so that I don't put something imaginative in, because then I might slip out of that A grade”*), which certainly requires improvement from the teacher.

Figure 49: Code list of the pedagogue in-depth interview –Szombathely



Source: Own edition based on the analysis of student reflections

Participatory observation

A very well-situated class was the subject of the research in Szombathely. There are no disadvantaged children, as we learned from the teacher, they are placed in a class from the third grade onwards, as the best children, the selected ones, the language class. Nevertheless, at the beginning of the workshop they are very reserved, not so interactive (2), but then they slowly settle in. At the beginning of the session, the teacher acted, sorted them out, calmed them down, but then I asked her not to discipline them and she was much more restrained.

Their behaviour was basically fine (4). We had a break after the lecture when they ate. Then they thought through the task on their own. In groups and larger groups, they worked noisily. Five small groups were formed in the first round. They talked, but I did not hear any really big ideas or thoughts (3). However, I was more surprised that the wikinomic collaboration that followed the group work produced quite a coherent output (9), but the journey there was not inspiring. There was talk of dog walking, litter picking, composting and a shop that immediately recycles rubbish. Here too, the focus was basically on the environment, but the approach was more from the business side (8).

As I left the circle, they got closer together, my favourite part is when they physically “work together” without guidance (7). Well-defined group roles did not emerge, more, there was a lot of leadership, quite strong personalities in each student, as we had already learned from the class teacher's interview, confirmed here, as well as the fact that they were driven more by performance than by creative thought and imagination.

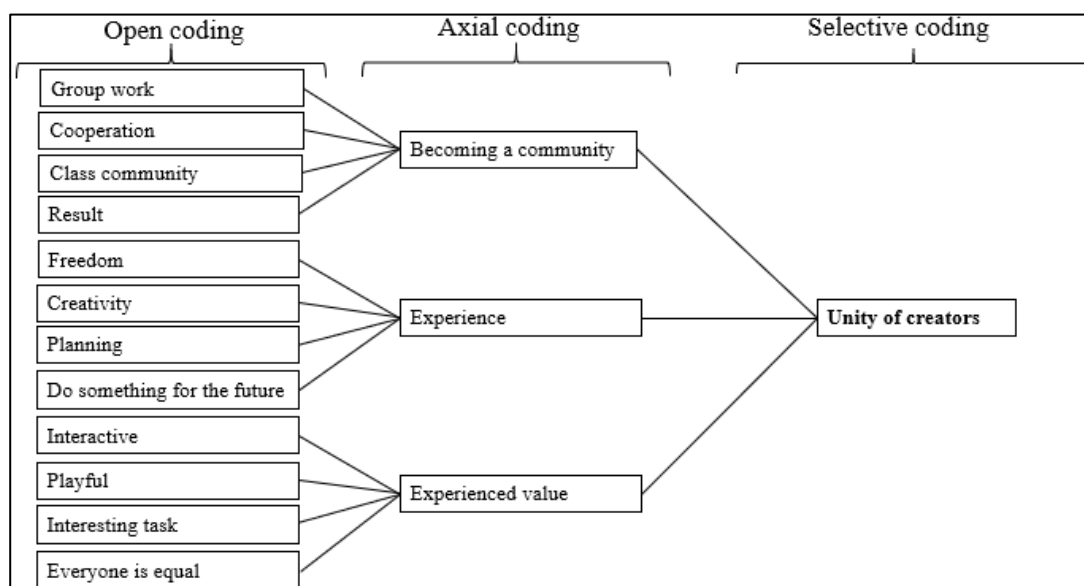
Towards the end, they lost focus, the essence of the task was not felt, no real discussion, debate or constructive brainstorming took place (5). It is interesting because they basically work together, each team giving their opinion on what they have created (7). Drawing is a minimal breakthrough for them, they become more interested in it (8), they draw even closer together, some drop out, but a hard core is formed. What they have created is finally described by a little girl, very succinctly. They have set up a company called Save the World, which motivates people to bring in their rubbish and use it. The products they make go to different shops. The class is basically satisfied with the product, which is seen as a collective achievement (8).

Reflection analysis

Students typically formed their opinions around the themes of group work, cooperation, class community and achievement. The positive returns they associated with the session were particularly surprising. They clearly like group work, they have a need for it (*"I liked the group tasks the most"*, *"The group task was very good, I liked it the most"*). In terms of collaboration, they emphasised working together (*"I think everyone contributed something to make this result happen"*, *"I liked almost everything, but especially the creation of the project together"*), the end result of which is a valuable outcome that they are proud of and that they are all part of together (*"With the environmental plan that we came up together with the group and the plans of the other groups, I think we created a very good project"*, *"The final result was a joint agreement"*). They also said that the session had strengthened their community and made their relationships stronger (*"It brought the class closer together"*, *"I liked that it was a bit playful but also interesting and that the class got closer together"*, *"It was good that my classmates, who I don't usually talk to, were good at group work"*).

The session gave them freedom, they did not feel the pressure of school (*"It was a focused presentation, it showed a lot of preparation, but I didn't feel the pressure I usually feel in a teacher's class"*), they found the presentations interesting, it allowed them to be creative (*"I could be creative, I could set my imagination free"*). They were motivated to do something for the future in a playful way (*"I had a lot of fun, I liked the 'games'"*, *"I really liked the fact that we had to make our environment better and more environmentally friendly"*), and the workshop was an experience and a learning experience for them, which they repeatedly described with strong adjectives (*"At the beginning I thought it would be just another boring programme, but fortunately I soon forgot that"*, *"Personally I felt very good and liberated"*).

Figure 50: Code list of student reflections – Szombathely



Source: Own edition based on the analysis of student reflections

8.4.22 Nógrád County, Dejtár

In-depth interview

The extremely kind and direct teacher from Dejtár does not have an easy time with her class. All but two of the children are disadvantaged and there are five students with learning and behavioural difficulties. For most of the students, the family is not present in their lives, but if it is, there is not much to be thankful for (*“the structure of Roma families: mother of the child. Daddy is not present, only rarely, at the most when he hits them. Or they have to be scolded. He’s basically not at home either”*).

The community is not cohesive, they don’t help each other (*“Five times someone asks me what the homework is, and no one answers, even though 12 people have seen it on Messenger.”*), even though the teacher invests a lot of energy in forming them into a community through extracurricular activities. But it is hard to compete with falling behind at home.

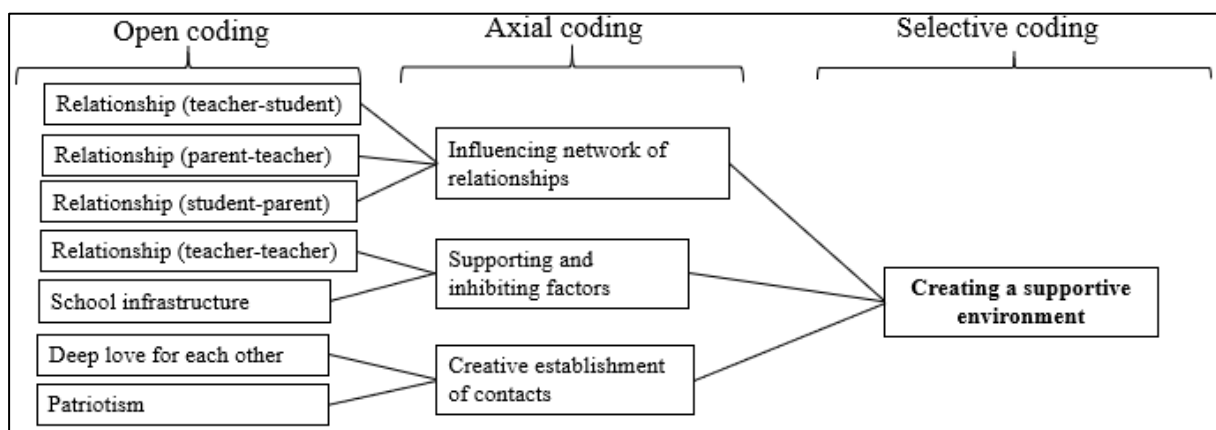
The school’s infrastructure does not help to the use of new methods (*“Internet access is slowly becoming a godsend, even if we can use it, we don’t always have it.”*), but the supportive and cohesive teaching community compensates somewhat (*“I have very good colleagues. They can help me with a lot of things.”*).

Group work is increasingly present in the life of the class. She tries to break down the hierarchical walls imposed by the school, at least outside school (*“We go to the cinema a lot. I become a kid there and order pizza, we have a good laugh. It’s not degrading or humiliating if I become a child for a few minutes or hours. And then they start calling me my first name by*

accident”) and to use these situations to communicate (“That’s why it’s good when we go to the cinema, because we talk through the laughter and the jokes”).

Creative interaction is used in everyday life through two pillars to strengthen community and belonging. One is love of country (“I try to teach children to respect traditions. Which is not just strictness and not just blind discipline, but things that are linked to our family, to our parents. And the community.”), and the other is the emotional depth of the relationship between the connecting parties and how to ensure it (“there has to be a love affair between an actor who mediates the arts and a director. You need the student to look up to the teacher, and the teacher to love that he or she is so good”).

Figure 51: Code list of the pedagogue in-depth interview – Dejtár



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

The workshop went very quickly compared to the other sessions. Unfortunately, the children felt that they were not being cared for at home, they had no children's room. They have no vocabulary and find it very difficult to express themselves (2). I had to ask them everything a lot, interaction was difficult (2) and I had to pay much more attention to how I phrased things, what words I used.

At the beginning they were very reserved, they were inhibited (4). There was no problem with their behaviour as far as they could pay attention (1). The problem manifested itself in the fact that they had nothing to say, mostly no opinion. They hardly gave any feedback; it was difficult to determine whether it was because they did not know or because the situation was so new to them.

They hardly worked in small groups. They talked, they tried to get some solutions out of it, but there was no communication (3). In small group, they implemented so many ideas to pick up rubbish (9). It could be seen that it was not a question of not wanting, but rather of not knowing. Even working in a large group, they could not communicate and talk to each other. At the same time, they felt that something should be created here. They were good at drawing, they really worked together (9).

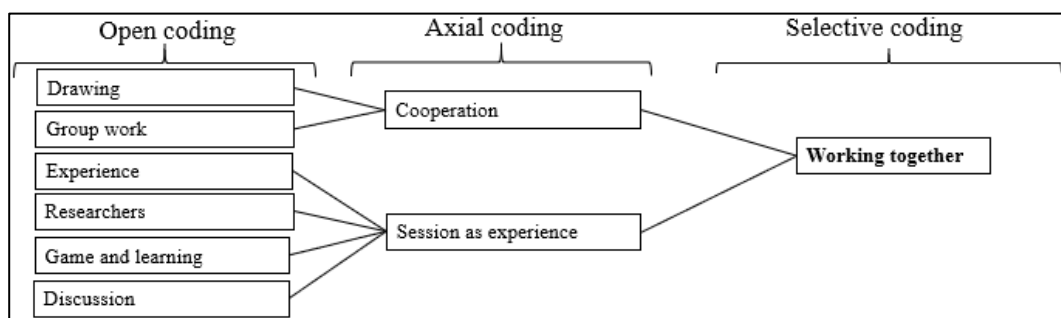
In a situation like this, the need to develop skills, communication, community, which would really help them to thrive in their daily lives, arises even more. In their situation, it is increasingly true that if school does not give them this, they will not get it in at all from home.

Reflection analysis

Participatory observation experience was also reflected in the reflections. They were succinct and made many spelling mistakes in their attempts to express their otherwise positive opinions. They had a good time and were happy that they had learned new things (*“I really liked that you brought such great ideas and I learned new things from you”*). They liked that they could do it in a playful way (*“It was not boring, it was a good playful way”*) and they added to the experience (*“I had a good time because the atmosphere was good”*) the personalities of the researchers (*“The people who gave the presentation were very nice”*).

If not in as many ways as in some of the previous sites, the notion of community was seen as a value, and the elements of the process were highlighted as working together. This was the group work (*“I had fun because there was a lot of teamwork, the team programme was good”*) and the drawing (*“I liked drawing together, I liked drawing the most, I liked it when everyone drew, and everyone had something good to say”*).

Figure 52: Code list of student reflections – Dejtár



Source: Own edition based on the analysis of student reflections

8.4.23 Slovakia, Pelsőc

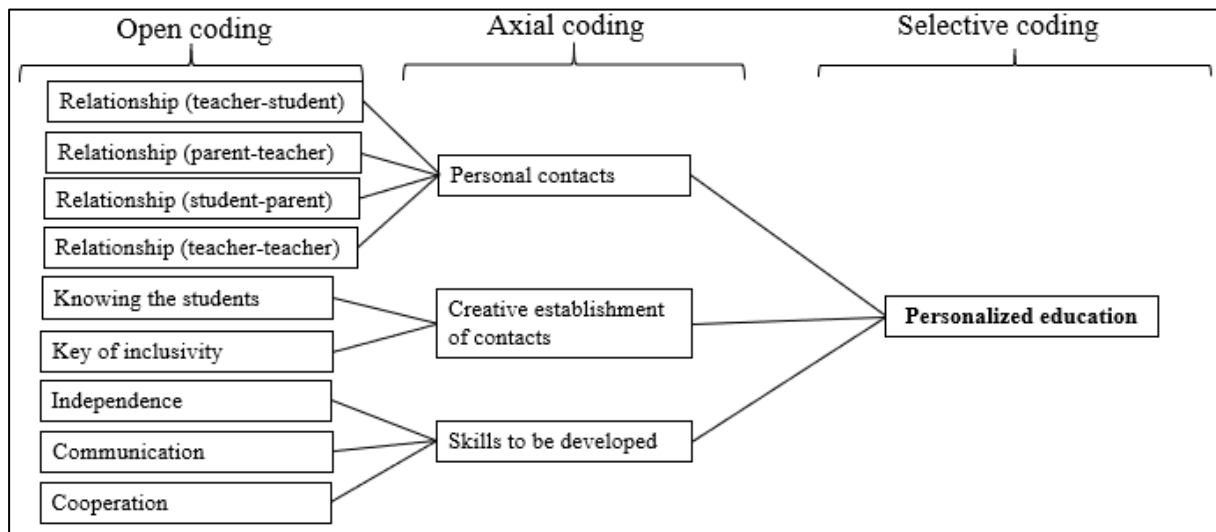
In-depth interview

In addition to the Hungarian counties, the research sample also included a study of a Hungarian settlement beyond the border. In Pelsőc, the teacher is a very kind, loving teacher whose goal is development, with children at the centre of her thoughts (*“I really want to be open to the world, to keep myself up to date with what is happening in the world, and how and with what we are dealing with the children”*). This ambition is supported by the teaching community around her, who also have a need to improve (*“But all the teachers strive to be constantly improving, to look for it, and we look for it together”*). The school provides a small, family-like community where personal relationships are crucial (*“It's not an assembly line school. Everyone really has personal relationships with their students.”*).

Beyond education, he also emphasizes pedagogy, seeing the school's real role as preparing students for work and life beyond lexical knowledge (*“The role of the school and the role of the teacher is to help them see beyond their nose or beyond the next big city. To open them up, to show them new worlds, new possibilities.”*). This includes the often poor or non-existent joint communication and the resulting breakdowns in collaboration (*“they can't communicate together, and my next thought is how to improve that. How can I improve them on this.”*) and discovering their own role in the community (*“But it's much more exciting when your child finds their own role in the community.”*). The lack of autonomy was also mentioned here, as they always receive support and guidance from outside, so it would be worth putting them in situations where this support is lacking (*“The colleague and I were talking about how they always get the impulse from outside, and it's very good that they won't get it in this session.”*).

The tasks to develop creativity are more demanding for the teacher, but she considers them very important. She believes that the key to this is personalised interaction with the students (*“it doesn't matter which class you present the same curriculum to. You have to know the class and find a way to make it accessible to them”*).

Figure 53: Code list of the pedagogue in-depth interview – Pelsőc



Source: Own edition based on the analysis of the in-depth interview transcript

Participatory observation

During the session, the two teachers were present, which was partly good as they were interested and wanted to develop, as evidenced by what was written in the in-depth interview, however one teacher was constantly directing and managing the children, which needed to be managed. The children called the pedagogues “teacher”, I had never experienced this before, the students always called the teachers by their names, this implied a little distance.

They were inhibited at the beginning, but this is common, based on previous sessions it has become a trend. I felt that this time the presentation went well, the children supported this feeling with their valuable comments and questions (2).

The presentation was followed by a short break and then the exercises started. Here they seemed to become another group. At first, they thought alone, then in small groups things went moderately well, but no big ideas emerged (9). They mainly focused on planting trees, so that if you cut a tree down you can plant a new one, but they also talked about pollution and replacing the car as a means of transport with a bicycle (9). There were ideas, but they did not lead to implementation and concrete measures (3). As I left the circle, they moved closer together but were not spectacular. No one took up the group role, there were more children with a stronger voice, but they did not stand up for themselves, there were only weak attempts. It got to the point where small teams individually shared their ideas, but there was no collective result (8). It was clear that group work was not present in their everyday lives (5) and that communication improvements, as highlighted by the teacher, were really needed. Some even said that they would rather take a step back and leave the circle. It was clear that they were

bothered by this passivity, but they did not manage to change this. There is no major problem with their behaviour, they discipline each other (4), but the group communication is below critical level in terms of their ability to relate, which they felt (*“hundreds of people talking at once and we don't understand each other”*). There was a complete lack of autonomy.

At the end of the session, I asked them in an unusual way if they were satisfied with this, why it had not been done better. They themselves were not satisfied (9), they felt they could not cooperate, they pointed at each other. Nevertheless, they verbally indicated that they “loved” the day and that a repeat would be necessary so that “next time the cooperation could be better”.

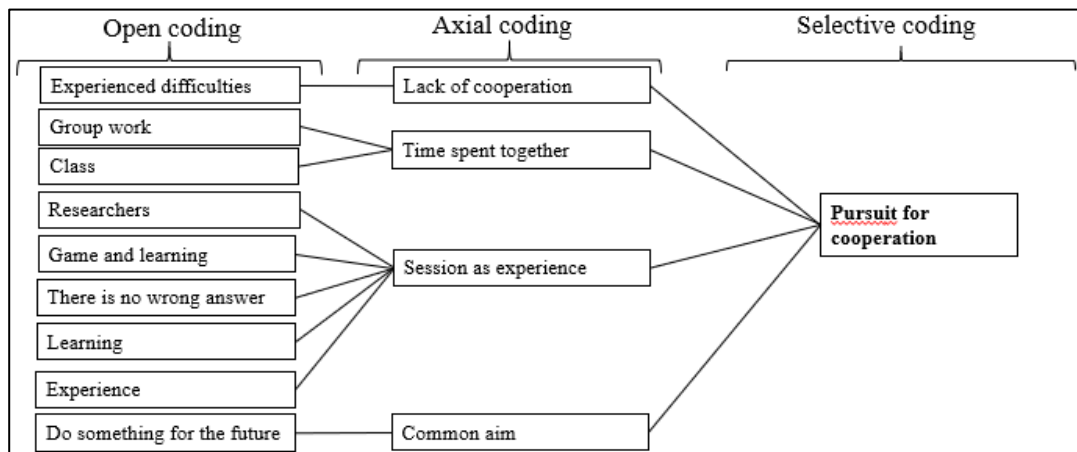
Reflection analysis

The students' communication difficulties were also evident in their writing, they were succinct, and their writing was very difficult to read, but bilingualism can also be attributed to this. Nonetheless, their writing confirmed what was observed during participatory observation and the problems identified during the in-depth interview.

They appreciated the group work, liked it, considered it the best part of the session (*“I liked the fact that it was all teamwork”, “I liked it when we worked in groups of five, it was very, very good, because I like working in groups”*). They missed the lack of success, the lack of a common result, which they mentioned as a negative point. The reasons for this were often attributed to the quarrelling, the lack of agreement, the recognition that they could not work together (*“I didn't like that we quarrelled”, “I didn't like that we couldn't work together”, “I didn't like that we couldn't agree because everything was wrong for everyone”*). At the same time, they appreciated having the opportunity to spend time together, which also shows how much they miss it, how much they do not have the space for it in their everyday life (*“It was nice to spend two hours together”, “I had fun, I spent a lot of time with my classmates”*).

The theme captured their attention, the action for a good cause added to their enjoyment of the session (*“We were thinking about nature, and we want to protect the environment”, “We talked about good things and I want to protect the environment”*). The impact of the researcher on the children was also observed in the previous sessions, but here it was even more intense (*“I liked that they were very nice to us and if we had any problems they helped us”*), highlighting also the sense of freedom to ask questions and to give the wrong answer (*“These ladies were very nice to let us ask questions and there was no wrong answer”*).

Figure 54: Code list of student reflections – Pelsőc



Source: Own edition based on the analysis of student reflections

8.5 Summary of results

It is clear from the analyses by location that the exploratory qualitative research has resulted in the identification of important processes in relation to the research questions. Summarising the central codes explored by location, filtering out repetitions and highlighting intersections, the following key categories came into focus: (1) The framework and the network of relationships that drive it, (2) Class as community, (3) Education for life: developing skills, (4) Dimensions of development, (5) My profession: teacher, (6) The product. The summary is made along the key categories created during the process.

8.5.1 Framework- Relationship network (1)

As a result of the research, a physical framework and a personal network of relationships clearly emerge, providing a starting point to which the actors in the process must either adapt or seek to shift in a positive direction. This is where certain **educational policies** emerge, towards which teachers are critical, but where they are unable to exert their own individual influence. This is supported by the literature analysis, which also points to the minimal room for manoeuvre, and the fact that the already limited options are not confined to a framework that is conducive to teachers' ambitions (Z. Fodor, 2018). Most existing policies are seen as a barrier to innovative and forward-looking processes, and change is seen as a matter of community collaboration (“*We are very limited. Obviously, you can't have no prescription of what to learn or what to teach, but there are whole other ways to get to the same place that we don't have*”). It is also important to point out that these fixed frameworks can have a long-term

impact on children's development and can lead to irreversible processes (*“the aim is to standardise: the child goes to class and is happy to start drawing but realises that they have to draw in a uniform way, and so does the clay work. Then he is transferred to an alternative school where the children's individual abilities are sought, but by then they have been deprived of this individuality.”*) The physical factor of the framework, most often recorded as a very significant barrier, is **the school's infrastructure**, whether it is the institution's building or even digital equipment (*“Internet access is slowly becoming a godsend, even if we can use it, we don't always have it.”*), the lack of community spaces. There are huge differences between the various locations, but in general they do not help teachers' work and their forward-looking educational efforts, but rather hinder them, placing an extra burden on teachers.

The personal network of contacts has been given more importance than expected. The class teacher, as the central, dominant unit in the system, is present as the facilitator of relationships. The human relationships she manages affect the whole community, but most of all the students who are the focus of my research. **The relationship between the homeroom teacher and the class** was the most intense. This has important relevance to the research question and is supported by the literature analyses discussed earlier, which show that, in addition to factors that support creativity, a good teacher-student relationship is necessary for innovation to flourish (Ferrari et al., 2009). There is also a surprisingly strong focus on parents, both in terms of the teacher-teacher relationship and the **student-parent relationship**. The values (not) brought from home, the educational guidelines received from parents (*“Parents are just as busy, working, doing everything, and raising children, I see it as being a bit pushed into the background”*) have a significant influence, often limiting the teacher's options, but most importantly determining the level from which development processes can start (*“We can add a lot here, but we can't really change the basic attitude. Education is needs to be done at home, too.”*) **The teacher's relationship with his colleagues** and his position in the teaching community were particularly strong elements. It highlighted how this is a strong driver of development and knowledge sharing, which will be discussed in more detail later (*“Obviously the teaching staff are also cohesive and pull the wagon towards one”*), as well as a positive working environment, which can also have a significant contribution to the system.

An integral part of the network of relationships is the **management team**, which manages processes and takes decisions at school level. It is he or she who is the direct driving force (*“We are involved in all kinds of tenders, and our director is very active in this, and is a partner and an initiator”*) or who can be an obstacle to the application of an innovative methodology such as the one I have created (*“The other one, we need a democratic leader. We don't have a democratic leader. It's quite autocratic. Although, what I like is that if I go to him, with one like the one we have today, then sure, it's good for us and the kids, so let's do it.”*).

8.5.2 Class as community (2)

A very important part of the personal network of relationships is the network of relationships between students. Because of its importance, it is analysed as a separate code category. The notion of class as a community, in its different dimensions, has permeated the whole research process and has been a part of every data collection method, in every single location, and it is no coincidence that it has been the focus of the research question.

It appeared, on the one hand, from the perspective of the teachers, who recorded the **strengths** (*“The classroom community is good, they are proud that the teachers tell the parents how good it is to have classes there”*) and weaknesses (*“They know little about each other, they talk little, they spend little time together in their free time. They come from 5 or 6 villages”*), as well as highlighting the shortcomings **in class community** (*“There is room for improvement in the community in terms of the way they relate to each other”*). **Striving for class community** was also mentioned by teachers as a task (*“To have a cohesive class is the task of the homeroom teacher”*), but this is clearly only realised in extracurricular activities, the frequency of which depends on the teacher's attitude (*“I always look for opportunities. I always take advantage of it, if there's something new, we can try, like this workshop, we do it. It's really good because they get involved in things together that other people don't. And then that makes them a community, which brings them together.”*). Here I would like to refer a little to the related result of the literature processing. In the case of the Generation Z studied, the distorted online/offline interaction ratio and the stronger presence in the digital space may hinder the development of their social and personal interaction skills (Turner, 2015), which may also affect their success as employees in the long run. The classroom community provides a familiar, safe environment, so a good relationship within the group, a strong class community, gives the student space to recognise the value of personal relationships.

There is also a **hypothesised link between class community and academic achievement** (*“personal development and community development are also very important. I think that both are very important for their academic performance”*), which was a new approach for teachers, as it had not been in their minds before.

The students' relational understanding of the key factor of community, illuminated in myriad aspects during the designcommunication session, was one of the most significant outcomes of the research. The **experiential factor** (*“I had a great time, our class has never been able to unfold so well”*) emerged, indicating the need for quality time with peers. They expressed how important class and/or small group **collaboration** (*“It is so good to see the whole class working together”*), of which **the creative-design process** is an integral part to them. This includes shared thinking (*“I liked that we thought together when we worked together”*) and agreement (*“It was good to see the class agree”*). They recognised when this was successful and identified problems when it was not smooth, i.e., they were able to self-critique because of the workshop. The biggest takeaway from the session was the **development of community**, the strengthening of the class community (*“It was a class builder”, “The class came together”, “I felt really good because we got a bit closer as a class”*) through the creative process they experienced. The community was also present at the level of the product created, and **the result was valued as a shared success** (*“It was good when we together with the class made the whole essence of the projects we had collected”*). The valorisation of community is not only evident in the present research, the literature reviewed also supports its existence. Success in school and, in the longer term, in the workplace, and a place in a complex social system, requires students to be able to work in a team, as a team (Igel & Urquhart, 2012).

8.5.3 Education for life: developing skills (3)

The emergence of soft skills and their growing importance has been much stronger than expected, as confirmed by the literature (Hurrell, 2016; Succi & Canovi, 2020; Zoltayné Paprika & Nagy, 2013). In addition to their role in education, they have also received a lot of attention in terms of preparation for life and work (*“collaboration is very important, and I always stress to them that this is the future. Then, when you get into a job, you'll have to work with people you don't want to work with, you learn how to do that now. This is what I aim to give them.”*) The research showed that teachers recognised that the development of soft skills and their conscious application is essential to staying alive, creating value and being a successful employee (*“To become value-creating adults, it is essential to be creative and to be able to use your creativity.”*). In the long term, however, teachers argue that this will require a

redefinition of the framework for performance assessment, as a scale of one to five will not be optimal for assessing soft skills (*"And you don't get a grade for it, you get an assessment. Or every six months, at the end of the year, there would be a test, but then I don't measure it in marks, I give a text assessment."*) The need to redefine the framework of performance assessment is also supported by the literature, since test-based, easily measurable accountability is not only not suitable for measuring soft skills, but also appears among the factors inhibiting creativity (Sahlberg, 2009).

In addition to the **cooperation** already addressed in the classroom code category, **creativity, communication, and problem solving** were emphasized as a result of the research analysis. There is an interesting correlation and overlap, – as supported by the results – in the professional opinion of Péter-Szarka. The skills of learning and innovation include creativity, critical thinking, communication and collaboration, which determine who can succeed in the increasingly complex world of life and work in the future (Péter-Szarka et al., 2015).

Teachers have recognised that they must therefore also provide scope for the development of soft skills beyond lexical knowledge (*"in today's world, big lexical knowledge is obsolete. Once you can look up everything with a click. I want a school where children can solve problems, where they can get the keys to how to solve a problem. To achieve this challenge them, they are looking for methodologies that support this."*) The need to develop communication is not an issue (*"they can't communicate together, and my next thought is how to develop that. How can I improve them on this."*). In general, they are stronger verbally, but their arguments, debate culture and listening to each other are not well developed, to say the least. Their writing skills, their lack of coherence in expressing their opinions, their weak vocabulary does not paint a promising picture (*"They don't play enough, they don't understand the basics. Their vocabulary is getting weaker"*, *"Be creative, know what to say. From your own vocabulary, be very creative, it's getting harder for the children."*) Their shortcomings and the need for improvement were also seen by the students, but they also felt the positive impact of the session (*"communication was sometimes a bit hard, but it was quite good"*, *"still a bit difficult, but we are getting better"*)

The development of problem-solving skills is seen in sessions based on open problem-solving (Dorst, 2011) situations (*"It is necessary for children to invent new things and solve problems according to their own ideas"*, *"The child sees that he/she does not have only one way. But that he can go in more than one direction because he has options."*), on which designcommunication also builds. If they can rely on only one good solution, it does not help them to let their ideas flow freely (*"It's a great exercise, but there's only one good solution, or one way to get there, so how much does that improve?"*).

The importance of creativity in the educational environment is unquestionable, both for teachers and children. In an ideal world, education develops creativity, which the child can use in life (*"The more creative a child is, the more things he or she can do. So, he will be equipped with more things in life."*). However, for creativity to be developed in a student by a teacher, his own creative attitude is also necessary (*"It is very important, almost one of the most important things in teaching. To meet new demands. Maybe it's important because year after year students come with different needs, and you have to be creative to be able to introduce and apply new methods."*) (Morais & Azevedo, 2001). The importance of this is further enhanced by the fact that good teacher-student relationships also have a feedback effect on the relationship and cooperation between students, thus creating a triple system of reciprocal relationships between the creative teacher, the positive teacher-student relationship and the good relationship between students (Torgyik, 2004).

Throughout the session, the students realized that I am undertaking a designcommunication workshop to improve my home, a designcommunication workshop can provide a solution to the above. One of its basic characteristics was that it builds on creativity (*"I felt good because I had never heard of this method before, but I liked it because it builds on creativity"*). It ensures that the student can only solve the problem by developing his/her creativity (*"I really liked the fact that you had to be creative in everything", "It took a lot of creativity to make it happen"*). Students also needed to use problem-solving skills, and they were looking for a solution to a central theme where the possibilities were endless (*"I liked the problem-solving the most"*, *"I liked it when we had to form a team and discuss that particular problem"*.)

8.5.4 *Strive for improvement, dimensions of development (4)*

Development is analysed as a separate code, but its elements are overlapping, and it also affects the other code categories. This includes the development realised in the classroom, and the fact that the workshop provided an opportunity for students to develop their creativity, but also the need for teachers to prioritise the development of soft skills. However, other important dimensions of development are also reported among the main findings of the 24-station study.

In addition to the positive results in terms of student development, the designcommunication workshop also aims to develop teachers, which is increasingly needed (*“The majority of colleagues, two thirds, are between 40 and 50 years old. A big part of it is that it's good the way it's learned, and it carries on.”*) Above all, what is needed is an openness to new methods and the need for continuous improvement to develop students effectively. This means that there are two levels of development in designcommunication workshops, from the student's side and from the teacher's side. This can be facilitated by two of the most important factors in this respect in the network of relationships outlined earlier: the management and the colleagues (*“But everyone among the teachers strives to be in constant development, to seek it, and we seek it together.”*). Here, the issue of knowledge sharing as a basic thesis of wikinomic collaboration is also brought up (Fuchs, 2008). A change in perception is needed, teachers need to learn to collaborate in a community like students, in a good community (*“We work together, more people more brains, more modern knowledge.”*), where the goal is not only individual development but also collective development for the benefit of the students.

Development also appeared in two aspects through the educators of the future. On the one hand, teachers see the need to reform teacher training, to integrate new, innovative methods into the curriculum (*“not equipped with sufficiently effective methods. This is the job of teacher trainers. They don't get the active methods they need now.”*) At the same time, they hope that the momentum of fresh, early career teachers and their modern approach to teaching and learning will motivate other colleagues and encourage them to improve (*“You see it from each other, from younger colleagues, you see it in presentations, you hear it, you apply it, you develop it in your own class.”*). However, the real unity and development would come from a new perspective of young people and the sharing of experience of older colleagues, and then putting common knowledge on a new footing (*“But I think we also need from us young people an openness towards them, because they have a lot of experience”*).

8.5.5 My profession and responsibility: I am a pedagogue (5)

The most important competence of a teacher should be to choose pedagogy as a profession, so that he or she will also have a particular sense of responsibility towards the local community (Hernádi et al., 2008). As the literature revised in the literature review highlights, there is a need for educators who experience the profession as a vocation. During this research we met mostly such classroom teachers, the reason for which can be traced back to the sampling characteristics explained earlier (*“I absolutely feel that I have teacher blood in my veins, my mother is a teacher”, “I love children, my hobby is also my job”, “I stay loyal even in difficult circumstances, that's all I can imagine. It's what I wanted to be since I was a kid”, “I do what I'm passionate about. It's a vocation.”*).

Among the findings of this research, it was found that the personality of the teacher that emerged during the in-depth interviews allowed inferences to be made about the class unit, the relationship between students and the expected quality of the collaborative work, which were confirmed as a result of participatory observations. Thus, the teacher held up a mirror to the class. This also meant that the research was typically carried out with committed teachers who were open to new ideas, innovative and committed, but even so there were many cases of lack of motivation, which was a barrier to innovation (*“if we are in for 24 hours, I can't put as much extra effort into my ideas because it takes all my energy to be with the children. “, “People who are not so open to things filter it down to how much work, how much extra it brings them. And he's already exhausted”, “Unfortunately, I don't have time for that. I would have to do a lot of extra work. Of which, time is always short.”*). In several cases, it was found that the willingness to innovate can only be measured in communication, not in action, as was confirmed by the work of the class. It is not enough, therefore, for a teacher to be committed; his or her individual values (V. Wilson et al., 2006) also influence his or her personality and, through this, the pattern he or she sets for the students. For students, the prominence of the ideal function and the unfamiliarity of taking responsibility outside of themselves further reinforces the exemplary role of the teacher's behaviour (Cseke, 2007). If the teacher is present with his/her whole personality in his/her teaching-learning activity, it contributes to becoming a real role model for his/her students (Lévai, 2013), which is a responsibility, but also a right to influence students in a positive direction, as well as to motivate them to accept new things.

As part of the research, I also used a projective technique whereby teachers were asked to name the animal that they thought would fulfil the quality of teacher role that they would like to see as an example to follow. By looking at the overlaps and highlighting the most common elements, they came up with the “ideal” teacher. The teacher who commands

authority, protects and defends, like the lion, where togetherness is present in the pride. He can take wing and fly away from the ground like a bird. It is wise like the owl in the fairy tale and has the flexibility and creativity of the monkey, who, not least, solves all problems. A good teacher also has the qualities of a dog, who is teachable and loyal, looking to his owner as an example. To sum up, *“any animal that protects its young would be a good teacher. 99% of animals are like that”*. He protects, i.e., he or she is responsible for it.

Being an educator is therefore more than a profession. It is a responsibility. This responsibility is present in the consciousness of teachers, as projective techniques have brought to the surface. The research -confirming the literature analysis- has highlighted the impact that the teacher's personality can have on students. The teacher is not only a role model for the class, but his/her behaviour can also reflect what is happening in the community.

8.5.6 *The product (6)*

The resulting products were analysed as a summary of participatory observation by location. The specificities of the products resulting from the session have informative elements both in relation to our research question and beyond. The research has revealed that the group dynamics and the concept of home in the joint task solution did not primarily mobilise the concept of the expected family home in the children but was interpreted at a level of abstraction beyond this. The common theme of home, making the home better, evoked almost exclusively ideas of environmental sustainability from the students, an outcome in which I attribute a large role to group work, wikinomic collaboration and the conceptual framework of “good” as defined by designcommunication. Throughout the exercise, they searched for and found a common reference point in the wider home, the environment. In addition, the students were motivated by the intention to improve, to do something good together for their future, for their environment, to create value together (*“I liked that we had to make the world a better place, so to speak”*, *“I liked that the theme was how to take care of the earth”*). This highlights the effectiveness of the methodology, since this is one of the objectives of designcommunication.

Table 4: Specific characteristics of the products created during the designcommunication workshop // Part 1

Place and time of action research	(1) realized product	(2) sustainable development is recognisable in the product	(3) sustainability environmental/technological/social	(4) relates to global or local thinking	(5) presence of incentive for activity and taking action	(6) entrepreneurial attitude
06/09/2019 Kalocsa1	rainwater tank in the school	yes	environmental	local: "Leaders of the project are members of the class community, everyone in the environment of his/her place of living".	present: they would water the recently planted trees from this rainwater	not present
06/09/2019 Kalocsa2	"Cabinet Commando:" introduction of individual cabinets in the school was set as a goal	no	not present	local	present: "first the support of the homeroom teacher, parents, and peers are needed"- they collect signatures	not present
17/09/2019 Tapoca1	Subsistence farm (with renewable energy) and dog shelter	yes	environmental, social	local, global aspect is also present because of renewable energy	minimally present	present
20/09/2019 Nagykőrös	Make the world a better place: Food to Africa, irrigation system, reducing energy consumption	yes	environmental, social, technological	global	minimally present	not present
23/09/2019 Budapest	Common environment protection	yes	environmental	local: common local litter picking and flower planting	present: Litter picking on every Saturday, flower planting on every Wednesday	not present
24/09/2019 Eger	"Let's save the Earth from plastics!"	yes	environmental	global	present: "let's have some ideas, with which we can help"	not present
01/10/2019 Bodrogkeresztúr	School buffet that appreciates litter picking, and gives discounts for environmentally conscious behaviour	yes	environmental	local	present	present
08/10/2019 Hódmezővásárhely	Litter picking days	yes	environmental	local	minimally present	not present
15/10/2019 Sajószentpéter	"Everything should work with solar power"	yes	environmental, technological	local	not present	not present
22/10/2019 Tamási	"Operation trash pick-up"	yes	environmental, social: "many people don't think about the future, we shouldn't think only about ourselves, but our grandchildren"	global	present: "our environment develops, and we are outside and do sport by bowling" - 3 times per week	not present
05/11/2019 Baktalórántháza	Helping starving children	yes	social	global	not present	not present
08/11/2019 Besenyeszög	BioHotel (cleaning robots, no electricity, everything is natural)	yes	technological	local	not present	present

Source: own elaboration based on D. D. Horváth & Horváth, 2020

Table 5: Specific characteristics of the products created during the designcommunication workshop // Part 2

Place and time of action research	(1) realized product	(2) sustainable development is recognisable in the product	(3) sustainability environmental/technological/social	(4) relates to global or local thinking	(5) presence of incentive for activity and taking action	(6) entrepreneurial attitude
12/11/2019 Mezőberény	Saviors of the world (litter picking, recycling, electronic cars)	yes	environmental	global	present: "We would divide the class, everyone could do different things in groups"	not present
19/11/2019 Baracs	Christmas fair and litter pick-up (trash free Christmas fair, helping homeless people from the income)	yes	social, environmental	local	not present	not present
22/11/2019 Dorog	Concept of class president "the class president could plan the common future of the class!"	yes	social	local	present: "I think we should consider such thing that we can make real"	not present
26/11/2019 Debrecen	Banana Joe is an application with which children and adults can be convinced to live in an environmentally conscious way.	yes	environmental	global	present: "Aunt Jutka, everyone has already been involved into this"	present
03/12/2019 Tápszentmiklós	Electric Van to Help the People in Need (functions with solar cell, smart refrigerator)	yes	social, environmental, technological	local: "They go from village to village, stop just like at bus stops, and they stop when it is needed and they collect and give it over at once"	not present	not present
06/12/2019 Kaposvár	For a better Earth	yes	technological, environmental	local and global	present: "It was mentioned that a class should cover this topic, to"	present: "economic cycle"
13/12/2019 Alsópáhok	Class house: "the aim was team-building and to build a better community"	yes	social	local	not present	not present
17/01/2020 Tapolca2	Sea Savers, who protect marine animals by cleaning up the sea from litter	yes	environmental	global	not present	not present
21/01/2020 Pécs	"Conservationist Unit" Environment protection, less litter, helping poor people, more e-cars.	yes	environmental, social	global	not present	present
23/01/2020 Szombathely	STV company- Save the World People are motivated to bring their garbage, which is then used by the company. The product that is created is delivered to different shops.	yes	environmental, social	global	not present	present
04/02/2020 Dejtár	Litter picking	yes	environmental	local	not present	not present

Source: own elaboration based on D. D. Horváth & Horváth, 2020

For illustrative purposes, a summary table was also prepared, in which the products according to a set of criteria were characterised and categorised (D. D. Horváth & Horváth, 2020). The criteria were based on (1) the product itself, (2) whether the concept of sustainable development¹⁰ is recognisable in the product, (3) the environmental/technological/social nature of sustainability, (4) elements of global or local thinking, (5) the encouragement of activity and action, (6) the presence of an entrepreneurial attitude. The latter will contribute to answering the specific research question of this dissertation.

Almost without exception, in all the groups, the plan created is linked to the concept of sustainable development (2), which suggests that the students are actively engaged in this topic. Most of the solutions were based on collaboration and shared values, which reinforced the importance of class-level cooperation. Among the 3 aspects of sustainable development (Parapatits, 2019), the environmental aspect, the preservation of natural capital, was the most prominent one that emerged during the collaborative planning process (3). Technology and the social aspect were touched upon, which may also highlight the need to focus on these two pillars in the pedagogy of sustainable development. Many classes focused on litter picking and tree planting (1), as these are activities that were also promoted at school level, and there were activities related to them. The global/local nature of the products created by the students (4) shows a mixed picture. Roughly half of them directed the focus of their project work to their local, own community (class, city) and elevate the jointly planned project to a "global" responsibility. The focus is much more on helping, on "doing good", with entrepreneurship (6) hardly ever being a focus, if it is, it is mainly to finance their own project, to have something to give and to help each other. The presence of entrepreneurial attitudes, despite its paramount importance, is negligible, and our empirical research suggests that it may be worthwhile to incorporate it more strongly into the curriculum (D. D. Horváth & Horváth, 2020).

The relation of the future generation to some approaches to sustainability determines the well-being of a 'future generation' (Abdullahi, 2010). This is a responsibility that the student must recognise but will not be able to do so independently. It is important for teachers to be aware of this and to strive to ensure that children acquire it in time. This should be about teaching, as an integral part of education, that together, as part of a global community, we must be able to take responsibility for the future of the Earth (Attila Varga, 2018). However, teaching is not enough, it needs to be at a skill level so that their thinking is shaped by this (Hernádi et

¹⁰ Sustainability is about meeting the needs of humanity today while preserving the environment and natural resources for future generations. (CWSA, 2000) And sustainable development means achieving this (Gór, 2013).

al., 2008). It is action, active behaviour, that needs to be encouraged for students to be able to pass on this knowledge themselves, even by action. It is clear from the table that its uptake is still minimal, and its development is essential. It is important that the activity should not be a one-off programme brought into the life of the school by external researchers, but should be integrated into everyday pedagogical practice, where brainstorming can be followed by a phase of planning and implementation. The complementary workshop presented in the next chapter is a perfect confirmation of this. To summarise the above, designcommunication as a creative-designer pedagogical/educational tool supports the mainstreaming of active, hands-on sustainable development education in curricular education, provided that a prepared teacher is available. It is important to add, however, that other problems affecting our society, our planet and even our immediate environment can be addressed through the activity, while maintaining the dynamic, action-oriented nature of the methodology, which will also be demonstrated in the next chapter.

8.6 Complementary workshop series and presentation of results

To answer the research question in a precise and complete way, a complementary series of workshops, which developed organically and was not even included in the original research plan, will be held. Its creation was motivated by the experience of the above-mentioned workshops and the results of the analysis. In order to integrate the product, designcommunication workshop, into the educational framework, it was important to examine what happens when a teacher active in the profession observes the positive effects associated with the session through his or her own relevant class, which also brings us closer to answering the research question. Furthermore, the importance of conducting exploratory research with the same community on several occasions, in addition to the exploratory research in all counties, underlines the results that can be obtained. The sampling breadth of the research is thus given by the 24 designcommunication workshops implemented and their results, and this additional study allows for a deepening of the research, looking for possible relationships revealed by the research question in another dimension. A specific feature of the qualitative methodology is the continuous evolution and shaping of the research framework, the possibility of adding to it to gain a deeper understanding.

The product specification stipulates that only teachers with previous experience as both observers and participants are allowed to run designcommunication workshops independently, and therefore the selection process had to consider the above criteria. Thus, a teacher was chosen from a rural school who supported this work from the very beginning of the research.

The chosen teacher participated in the first pilot workshop, which involved both teachers and students, and was also present as an active observer at two other sessions in Tapolca and Alsópáhok. The additional series of workshops was therefore held at the Kazinczy Ferenc Elementary School in Tapolca. The study was carried out through the focus on a class who had already participated in the pilot studies established in spring 2019. The then sixth-grade students now represented an eighth-grade class about to move on to further education, who already had minimal background knowledge and experience of the product. In practice, this situation also patterns the research continuum and contributes to the effectiveness of the deepening of results. The complementary workshop series took place 4 times during February-March 2021, consecutively every week/ second week. The last session could just be held on the last teaching day before the switch to online teaching due to the pandemic. Due to the virus situation, the teacher had full autonomy, as I was not allowed to enter the school as an outsider due to the regulations in this situation.

The additional series of workshops also used the methodology of multi-method qualitative research, with data collection based on 3 pillars as before. One was an in-depth interview with the teacher conducting the session following the workshops and the other was the result of participatory observation. Here, a second teacher was also involved, who followed all four sessions as an active observer and prepared a research reflection based on the already well-known observation criteria, which formed the basis of the analysis. The third pillar is the reflection prepared by the students at the end of each workshop. The reflection, in addition to expressing a subjective opinion, also included an association task where they had to describe the first thought that comes to mind in relation to communication, collaboration and creative expression. The results are presented based on the analysis of the above sampling, summarising the outputs and lessons learned from all four sessions.

8.6.1 Topic of the workshop

The theme is organised around the future because the subjects of the research are 8th grade students who are about to go on to further education, so their thoughts are determined by the question of the future. As I stated in the product description, it is important to organise the session around a theme that either does not require any background knowledge or assumes that the students involved have a similar level of knowledge. It is also important to present students with an open problem-solving (Dorst, 2011) situation. Taking the above into account, the theme of the first workshop is “The perfect school” and the task is to design a school for the children of the future. The second workshop was called “Classroom job”. In a wikinomic collaboration,

they have to design an activity in which their class can be the best, what they are best suited for and what they can do together. The third session is based around the theme “Dream Job”, where students have to design a workplace that they think is perfect for them.

The theme of the fourth workshop is getting closer to the future of their own community. In the final session, the children looked for answers and hypothetical solutions on how to make their own classroom community a better place.

The use of the concepts of ideals and perfection in the choice of theme needs to be explained. There is no such thing as ideal or perfect, only manipulated perception makes it so. For children, however, idealisation becomes important, they still believe in perfection, in miracles. Thus, children are still able to believe in the relationship between the human optimum and the inexplicable perfect (A. Cosovan, 2009). Building on this, and therefore using the concepts of the perfect and the ideal, they can be given a tangible sense of the purpose and meaning of the formulation of their ideas.

8.6.2 In-depth interview analysis and coding

The unstructured in-depth interview with the class teacher of the class under study was conducted after the four sessions, so that it was possible to analyse the sessions together and to explore the relationships between them, and to interpret the processes taking place. Following the open coding process of the in-depth interview transcript, 8 categories were recorded in the axial coding section, which also provides a framework for the presentation of the results.

The class

The teacher made it a priority to get to know the community under study, who are a heterogeneous group in terms of their behaviour, academic achievement, and family background (“*What you need to know about the class is that it is a class where there is not very close contact between students, many are on the periphery.*”) Students are almost unable to cooperate, to think as a class, to think as a unit, and they need the teacher's guidance: “*When it comes to forming an opinion in class, it is difficult to reach a consensus. I have to make the rules on the basis of which the decision is made.*” Because of their bad behaviour and associated mediocre academic results, they are positioned as a notorious class within the school walls, and most teachers cannot manage them. This is reciprocal, as they do not accept anyone but their homeroom teacher and look for fault in everyone. They are lucky to have a homeroom teacher, whose calm nature and use of humour as an educational tool helps them to be mutually accepting.

From teacher to trainer

An educator is practically like an actor, constantly in character, in front of the most critical audience, the only difference is that here it is not just an imaginary reality, but the stage itself can be captured as the real everyday. With this in mind, I thought that such a role as a trainer would not pose any particular problem or challenge to an educator, but I was wrong. During the interview, the class teacher pointed out that moving from the usual hierarchical system of relationships into a trainer role had brought excitement and a new challenge for her (*“It gave me a lot of experience and I felt that I was starting to grow up to the role”*). The initial uncertainty was replaced by anxiety about whether she was doing everything right, and almost immediately she felt what and how she needed to improve (*“I’m not making a lot of mistakes in the next one that I feel were mistakes now.”*). His excellent suggestion was to produce a precise guide with advice and practices to help prepare, which would facilitate the ability to support students' creative development in a fundamentally different set of relationships with the same community in a very different situational context. Progress was clearly identifiable as they progressed through the sessions (*“I felt much more confident. It was much better than the first one, I also felt more prepared, much better able to coordinate, to ask questions to help the process”*). However, it is interesting that the teacher put the students' progress before her own personal development, i.e., on the third occasion when the workshop had an apparently negative outcome, she could not be happy about how well she had done, as this was overridden by the students' perceived failure.

Development

The approach to development was therefore three-dimensional. The individual development of the teacher and students, and the development of the class as a community. The homeroom teacher highlighted individual students who were more successful week by week, taking on group roles in a way never seen before (*“In 4 years I have never seen this little boy like this. To make him argue, to engage, to participate in a way that he is one of the driving forces and motors.”*), students who had been withdrawn in their daily lives were brought to the forefront of the class during the workshop (*“It was clearly visible how the new situation contributed to the unfolding of new or previously hidden sides of the individual and sustained activity week after week.”*). The first two workshops also showed tangible improvement at the community level: *“what had been adopted as rules during the previous workshop was consistently applied. They listened to each other. They disciplined each other. They did not want to ruin the work together.”*

Community failure as an outcome

Progress stalled during the third workshop, and the session ended in a minor failure and debate. The teacher saw this as a result of taking a step back from the success of the first two workshops and adapting to the designcommunication methodology, allowing more freedom for the designer and the class, but the community was not yet ready for this. Despite the product created, there was a sense of total lethargy and anxiety in the class. Here was a very important step by the teacher, not to allow the process to end, but to sit the students down and allow the community failure to unfold. The outcome of the workshop was not realised during the session, but afterwards: *“It was a significant realisation in the life of the class, because they had never before spoken their minds so openly, listening to each other and arguing.”* They confronted each other and discussed the problem at community level. The criteria that only a teacher with appropriate knowledge of designcommunication methodology could hold the workshop was particularly important here, as it turned an apparently negative outcome into a development.

Maturity for freedom

I have presented the idea as a separate code that supposedly led to the phenomenon of “community failure”. This is none other than the soft skill, maturity, and critical thinking, as articulated by the homeroom teacher, which is necessary for the student to appreciate and appropriately manage the freedom he or she has been given. Methodology gives freedom, space for creativity, but at the same time this freedom must be taught to students so that it becomes a driving force for the individual and the community, not a barrier in the collaborative process.

Catharsis

The real flow experience came in the fourth workshop. Based on the results of the workshop series, originally planned with three sessions, I thought that a fourth session was necessary to unlock this situation and provide an opportunity to convert accumulated experience into action. The session delivered as much as I had hoped, and the class teacher said that there was a sense of community in the class that had never been experienced before. The success of the result touched not only the students but also the teacher, who was so moved by the flow experience during the process that even during the interview she was in tears when she shared her experiences on topics related to this category of code (*“At the end of the workshop, seeing the result, I had to turn away from the students because I cried, I was so proud of them”*).

Creativity

The designcommunication workshop is based on creativity, and the elements related to this were also intensively brought up in the in-depth interview. The teacher highlights two key concepts in relation to creativity. One is that creativity was mainly understood at an individual level during the sessions. At the individual level, it was shaped by two important factors. One was communication skills, stating that *“somehow the children whose communication skills stood out from the group also seemed to me to be more creative in their work. They came up with a lot more ideas. They had ideas that added much more value to the product.”* Another such factor that emerged was individual interest: *“Creativity emerged in a striking form when a topic came up that was of particular interest to the student.”* Above all, however, it is important to stress that the greatest driving force for the emergence of individual creativity is the supportive environment (*“it is useless to have a creative person if you are in an environment that does not support these things, then these ideas cannot emerge, and creativity cannot come out of you”*).

Communication, Collaboration

I interpreted the conceptual framework of communication and collaboration as a code based on the interview, because the teacher treated the two terms as a whole unit in the context of the session (*“They were unable to collaborate due to lack of proper communication.”*). She clearly identified improvement in social communication, but the need for improvement at the individual level was noticed by her, and the session revealed the gaps (*“at the individual level, a lot of people could improve this, but again at the group level I can only say that there was improvement”*). At the same time, the session also highlighted her own responsibility, as it was a mirror for her to see how much she could do to improve it (*“I felt my own responsibility, how much I could do to improve it, even with my own communication.”*)

8.6.3 Participatory observation

During the participatory observation, in addition to the homeroom teacher conducting the session, another teacher was involved as a passive participant during all four workshops, observing and recording the processes along the pre-agreed observation criteria. She had previously participated in designcommunication workshops, both as a participant and as an observer, so she was familiar with the situation, had a basis for comparison and understood the essence of the methodology. It is not negligible that she can be described as the most open-minded and innovative teacher in the school, who is constantly in training and who makes

experimenting with innovative pedagogical methods an integral part of her everyday teaching. The results of participatory observation are therefore presented along the lines of a synthesis of two teachers' perspectives.

The observation aspects were basically based on the elements already described, with the addition of some units linked to the fact that the repetitive nature of the session allowed for the observation of processes. These include development (10), strengthening of the community (11), effectiveness of cooperation (12), communication processes (13) and creativity (14), and entrepreneurial attitude (15).

Workshop (1) – 05.02.2021 - “Perfect School”

The sessions basically start with an interactive presentation of the methodology of designcommunication, but here the students have already attended a presentation, so a shorter, comprehensive, repeated presentation was only given at the beginning of the workshop. The students recalled (1) (“*we communicate with design*”, “*it was about creativity*”, “*design results is implementation*”), which in itself can be interpreted as a positive aspect of the workshop. The session was linked to the mentor of the previous workshop, i.e., me, with several requests for me to appear (“*Where is Daniella?*”, “*When is Daniella coming?*”), suggesting how the role and personality of the trainer can be crucial for the students in such a process.

The individual consideration of the process kept their attention for only a minimal amount of time (5), so they soon began to work in randomly formed small groups. This was the most effective element of the workshop (3), they still work within this framework (“*I hear good ideas, they debate, they argue*”). “*It was noticeable and within the group how the more dominant young children were able to assert their will, immediately taking on the role of group leader*”.

After the small group work, there was a short break and then the class-wide collaboration started. Everyone started to talk and in a relatively short time they realised that this was not going to work, they encouraged each other to apply (7). They made the rules that are natural for such communication but were new to them (13). They talked to each other. They disciplined each other (4). They went through the group ideas, but it is important to note here that this was done under teacher guidance rather than by themselves. It did, however, produce the expected result, as “*it is not typical for them to have such a discussion*”. The larger group was also characterised by the immediate emergence of group roles (13), the same children who took the lead in the small groups, and the same children who had strong soft skills compared to the others in the communication skills discussed in the in-depth interview.

Regarding the product created, I would like to highlight two important aspects from the results of the observations (9). One is the fact that the perfect school is sustainable for students: *“School roof should be solar”, “School should produce its own energy”*. The other is how students describe the teachers who teach in the perfect school: *“only cool teachers who know what's good for us”*.

In the process, the greatest difficulties were identified as being the need to make teachers and students aware of the different aspects of motivation. Innovative methodology also implies an open-minded approach, which students need to be prepared for, and includes the ability to motivate themselves with measures beyond grades and exhortations, such as the joy of collaboration or the experience of the creative process (12).

Workshop (2) – 12.02.2021 “Classroom job”

During the second workshop, progress was most visible in the process (10). They moved more routinely in the situation and it was visible that the more passive students became more active participants in the process (3) (*“There was a little boy in one of the groups who was very passive in the first workshop, almost completely withdrawn from everything, and now he was very decisive in one of the groups and he became the leader of one of the enterprises, even though he has no leadership skills, but he felt so much in charge that the others believed in him and voted him in”*). Following the individual work, 4 groups were formed. Again, small group work proved effective (5), they were loud (4), but no external teacher discipline was needed, this was coordinated between the students themselves (12). When the homeroom teacher went around the groups, the group members always looked at him, sometimes asking questions, and here again it was clear that they needed reinforcement. Although there was now a much more intense desire to cooperate (12), they could not ignore the patterns of hierarchical relationships from one week to the next. Here again, the group structure determined the work of the small group.

Wikinomic collaboration was characterised by a more active process: *“they had so many ideas that they could not even write them all down”*. They used the whiteboard, they made notes on sheets, there was an intense creative process (3), they took the task more seriously. This may have been a result of the fact that they were no longer students in the task, but adult people planning a collaborative work, which may have influenced their attitude to the task (15). Many more ideas were generated (14), and many more children were involved. What is very interesting about the product is that as part of the design process (9), a designer/interior design

company was created, which can be linked to the designer role they could take on in the designcommunication workshop (8).

Workshop (3) – 19.02.2021 “Dream Workplace”

The third workshop started, like the second, with an analysis and reflection on the previous session. The children also recognised the development of the community (10), which they expressed. They seem to be more and more familiar with the situation (3), which leads to the involvement of more students. Small group work was excellent (7), although they still needed reinforcement. However, the teacher leading the session took a step back this time, giving the students autonomy in classroom collaboration (5), but they were not yet ready for this. The collaborative process has started, but the free rider behaviour of some students broke the process, disrupted the community (4), and the process ended in chaos instead of catharsis (12). The result was difficult to achieve but was judged a clear failure (9).

This was followed by a class-wide discussion of the problem (12) at the great initiative of the teacher, which fine-tuned the outcome, and the real benefit of the session was realised during the discussion following the workshop (9), in effect, it can be considered the real product. It was because of this process that the two teachers decided to investigate for a fourth time how the students re-evaluated the collaboration following such a situation.

Workshop (4) – 05.03.2021 “Together for our class community”

The fourth workshop was a complete surprise for the students, they did not know there would be another one. *“The session started very well; they liked the exercise”*. As the head of the class had said earlier, a topic that is close to them is more likely to stimulate their imagination and creativity (14), and this was confirmed during the workshop, with many good ideas coming up, which the different groups acknowledged to each other (*“all the groups have good ideas, they just need to write them down”*). The impact of the evaluation class discussion following the third workshop (13) was also evident (*“the last discussion probably meant a lot because the quieter ones were more courageous in confronting the loudmouths”*). The random creation of small groups also resulted in homogeneous groups in terms of behaviour and learning outcomes, which had an impact on the output of the work (12).

At the community level, a will to overcome previous failure was also evident (12). Collaboration was strengthened by the very nature of the topic itself, as observed by the teacher, which focused on improving the classroom community, so that *“they collaboratively created ways to improve their community in the future and cooperation at the community level.”* The

work was collaborative, but not consensual, which was fine, because the argument-based discussions moved the process forward. Their communication also showed improvement (13).

As a product, they revised the rules of procedure with their own points, in which all groups and all individuals could say something (9). The weight of their decision was underlined by their signatures. Among the points of the house rules for a better class community, the desire to improve communication was strongly present: *“think about what we say”, “talk together”, “listen to each other”*. Equality (*“let's be equal”*) and respect for each other (*“respect each other”*) were also among the basic designcommunication tenets, and cooperation was also very much in the spotlight: *“stick together”, “help each other”, “compromise together”, “care for each other”*.

8.6.4 Analysis of student reflections

Workshop (1) - 05.02.2021 – “Perfect School”

Students' reflections in the light of the first workshop, after exploring the open code categories, can be interpreted along the following main elements. They characterised their class community, but did so more in the context of development and experienced positive changes as a result of the session, the notions of class community and cooperation being closely intertwined: *“it has become more cohesive than it used to be”, “I don't think we have worked together so much before”, “we were able to work on a good idea in community, which brought the community together”, “it also showed how cooperative we are, we became a team at the end”, “I have never seen the class work together so well, we were finally able to do something together with the class in a common and cultured way”*. As a negative factor, their own behaviour is recorded as a hindrance to their work: *“there was a lot of noise and disorder, we didn't understand each other”*. The opportunity to talk is highly valued and is seen as a class-wide achievement: *“we were able to talk normally with my classmates”*. Communication is closely linked to discussion, but is presented in a specific approach, of which discussion and arguments are an integral part (*“we could argue normally”, “everyone listened to each other, which felt a bit good”, “we argued a bit, but in a friendly way”*), and the link between intelligence and communication is also expressed by the students, and touched on several times by the class teacher (*“intelligence is needed”*).

Creativity was also echoed in the reflections, associated with creativity, imagination, ideas and fantasies, open codes labelled as such were summarised: *“the best was when we put ideas together, that's when I imagine what this creation could look like”*. Related to creativity, during

the workshop the students did not associate its appearance with learning, i.e., a play-learning approach emerged: *“we didn't learn, we could bring out our creativity”*. It is also important to mention self-expression, which many students mentioned (*“we could often express our own opinions, everyone could assert themselves”*), in a context where individual opinions could be expressed, and the resulting ideas could be combined to produce a product (*“everyone could express themselves as they imagined and then the many people could create a good product”*). They were proud of the result, appreciated it as a joint product and created a school that they would like to be a part of (*“we made the best school in the country”*, *“I think the end result was very good, everyone had a good idea”*, *“in many ways the end result was the best, I would go there”*).

Workshop (2) – 12.02.2021 “Classroom job”

The codes identified from the reflections on the second workshop were grouped around the key category of development. Progress was expressed in several dimensions, related to the categories of creativity (*“there were creative ideas in group planning”*), cooperation (*“most of the class worked together normally, the class could work together”*) and communication (*“most of the class listened to each other, at the end we didn't even have to follow the rule we were reporting”*). Improvements were noted in faster progress and better teamwork related to cooperation (*“we were better able to work as a team”*). A positive change in their communication was suggested by the perception that *“we agreed more easily on a lot of things”* and *“we could discuss”* the problem better. Their creativity also started to flourish, with their own perception that they *“said much better things than before”*.

There were several levels of connection to the product, from simple accomplishment (*“We created a piece of work that satisfied most of the class”*) to pride (*“The end result was very good, and I am proud of it”*), but there was also agreement that *“they created a piece of work that they planned and worked on together”*. Interestingly, an entrepreneurial attitude also appeared in the codes, with many people putting themselves in an entrepreneurial role in the work (*“The two of them kept talking and not about the business”*, *“With difficulty, but we created a business”*.) This was also confirmed by the in-depth interview with the teacher, who said that in the process of designing the classroom, students also prioritised profitability in the design (*“let it be a property on the lake because it can be sold at a higher profit”*).

Workshop (3) – 19.02.2021 “Dream Workplace”

Given the results of the in-depth interview and participatory observation, it is not surprising that the students' reflections also reflected the negative outcome of the workshop (*“this was the worst of the three”*). The code categories were like the previous two sessions. They referred to the lack of creativity (*“well, there wasn't much in this class”, “we didn't go so far beyond our possibilities today”*), the failure of collaboration (*“the class can't work together”, “I didn't feel very comfortable”, “we couldn't work together”*) and difficulties in communication (*“we couldn't work together because we were always shouting”, “the worst thing was that no one listened to each other and we couldn't come to a common decision”, “we had difficulty understanding each other's ideas”*). Four factors were identified as the cause of the failure. There was the misbehaviour of a few people who disrupted the collaboration (*“A few people were insolent and ruined everyone's day”*), the exhaustion of the group (*“Maybe we were tired of this”*), disinterest (*“no one was interested at the end”*) and the difficulty of the task or topic (*“It was a difficult task, and we could not reach a common result”*).

Despite the success of the small group work (*“there was creativity in the separate group work”, “as long as we were in small groups it was good”*), the outcome of the class collaboration became the decisive influence when the whole session was evaluated by the students.

Workshop (4) – 05.03.2021 “Together for our class community”

The output of the fourth workshop was clearly positive from the students' point of view (*“it was by far one of the best sessions”*), the reflections were refreshing, the language was cheerful, and many more students drew or wrote with coloured pencils on paper. This time, the exercise was particularly well received (*“The exercise was very good”, “I think it was the best exercise so far”*). The improvement was most noticeable in communication (*“The communication was much better than in the last session”*) and cooperation (*“The cooperation was quite good, and the class improved”*). The strengthening of the class community was also highlighted (*“this session has brought us together a little bit better maybe”*). The improvement was not clearly related to the previous workshop but was considered in relation to the four sessions (*“Cooperation improved from class to class”*). There were also young children who produced a session feeling graph on a scale of four in relation to the four sessions. The success of the product (*“We made an effort and did a good job”*) was credited to and evaluated in relation to cooperation (*“We were able to work together, and we got the result”*) and communication (*“We were able to understand each other, that's why the result was good”*). Creativity was linked to the product. The fact that at the end they had signed the community development charter

remained for them as an original and creative idea (“*signing the charter is a very good, creative idea*”).

8.6.5 Summary of results and added value

Combining the code categories of the different data collection methods, progress, creativity, communication, collaboration, classroom community, failure and the product created are recorded. Looking at the combined results of the four sessions, the main conclusions can be summarised as follows. The development is realised in three dimensions: the personal development of the teacher in his new role as trainer, the positive change in the individual personality of each student, the emergence of values not previously experienced, and the development processes at class level. The latter is most evident in communication and cooperation. The mutual and close relationship between the quality of cooperation and changes in the classroom community is evident. The problems and failures identified created opportunities for change and development through the session, where the actors were able to make use of this through their knowledge of designcommunication methodology. The products created gave the students the space to create, to generate new ideas combined with creativity, to develop a design identity, with a small but significant entrepreneurial approach, if the thematic allowed for it.

An important objective of the complementary workshop series was to contribute to the results of the 24-station research. I therefore consider it an important part of the synthesis to explore and synthesise the connections and confirmations, and any new dimensions that emerged. As mentioned above, (4) development, (3) development of soft skills, has also been emphasised here. The latter was even more salient due to the repetitive nature of the session, both from the community's and the teacher's point of view. Partly related to this category of codes is the forward-looking nature of (2) class as a community process, which was realised week by week by the trainer, the observer, and the participants. In the strengthening of the community, the process of designing and creating as a pathway to the (6) product was more pronounced during the complementary workshop series. The 6 dimensions defined earlier were extended by this empirical complementary research with 2 additional elements. Here, (7) failure as an event that greatly contributes to the shaping of the community and its development appears, and (8) entrepreneurial attitude, which is also to be answered in connection with the research question, has been given space in connection with the new topic.

8.7 Answers to the research questions

The exploratory qualitative research can be divided into two broad units. A 24-station workshop on designcommunication, followed by a series of 4-station sessions to complement, confirm, and shed new light on the results. This chapter aims to answer the research questions posed in the dissertation. I base the answers to these questions on the analyses by location and the results already presented, which summarise them and reveal deeper connections that go beyond the research questions.

The research question formulated in the methodology chapter is the following: How the use of designcommunication (designer networking) as a creative educational methodology through a workshop shapes and forms the participating community (students, teachers)? How does open-ended problem-solving contribute to communication within the group under study? Its contribution and influence are assumed in the following dimensions: (I) community-building, (II) development of soft skills, (III) development of a designer, creator identity, (IV) rise of entrepreneurial competences. I seek to answer the questions raised by the fixed dimensions through the following research sub-questions.

(I): How does the workshop help community-building?

(II): In what way, in what directions does the workshop shape the students' soft skills?

(III): How the workshop shapes the students' designer identity?

(IV): How does the workshop and the community shape the intensity of the entrepreneurial attitude and spirit?

The designcommunication methodology shapes community actors at multiple levels and from multiple directions within levels. The dismantling of the hierarchical relationship between teacher and student, and the new foundations of equality over the duration of the session, ensures a demonstrable rapprochement in the relationship between student and teacher. The rapprochement is also tangible between students, who deepen and rebuild their relationships through shared success because of group and class collaboration. As a result of the design of the relationship, there is thus a rapprochement as a horizontal process, but also a vertical movement forward. The dimensions of development are also evident at three levels, particularly when the teacher is the implementer of the session. There is a development in the teacher as a person, who has to take on a new and hitherto unknown role. The development of students can also be analysed from two further perspectives. On the one hand, the development of the individual and, on the other, the development of the group as a community through the process of design and creation.

The designcommunication workshop helps to build community (I) by providing opportunities. It gives the class the chance to spend quality time together, which gives them an experience. It creates an opportunity for discussion, which is clearly a niche, a need, and a demand. It provides an opportunity by building on open problem solving, so that the path to a solution can be personalised, tailored to their community, which helps them to feel ownership of the task. By focusing on an open problem-solving situation, it opens the way to the fulfilment of imagination and creativity. By providing greater freedom without specific guidance, it gives students the opportunity for autonomy. This is something they need to develop, but it also allows students to see success because of their own achievements and cooperation. This determines the relationship between the product created and the students. By focusing on the good, it highlights the importance of value creation for students.

Research has highlighted the growing importance of soft skills (II). Teachers have recognised the need and responsibility. On the one hand, this was due to the fact that, seeing the shortcomings of the students, the need to develop soft skills was no longer questioned. On the other hand, teachers perceived that life education, preparation for the world of work, and changing expectations required the integration of these skills into education, regardless of the lack of central regulation. Emphasis was placed on problem solving (critical approach), creativity, communication, and cooperation as a function of this. The research has demonstrated that the soft skills identified above are directly or indirectly influenced by the workshop, and this was particularly evident during the complementary workshop, where a positive change was observed from session to session.

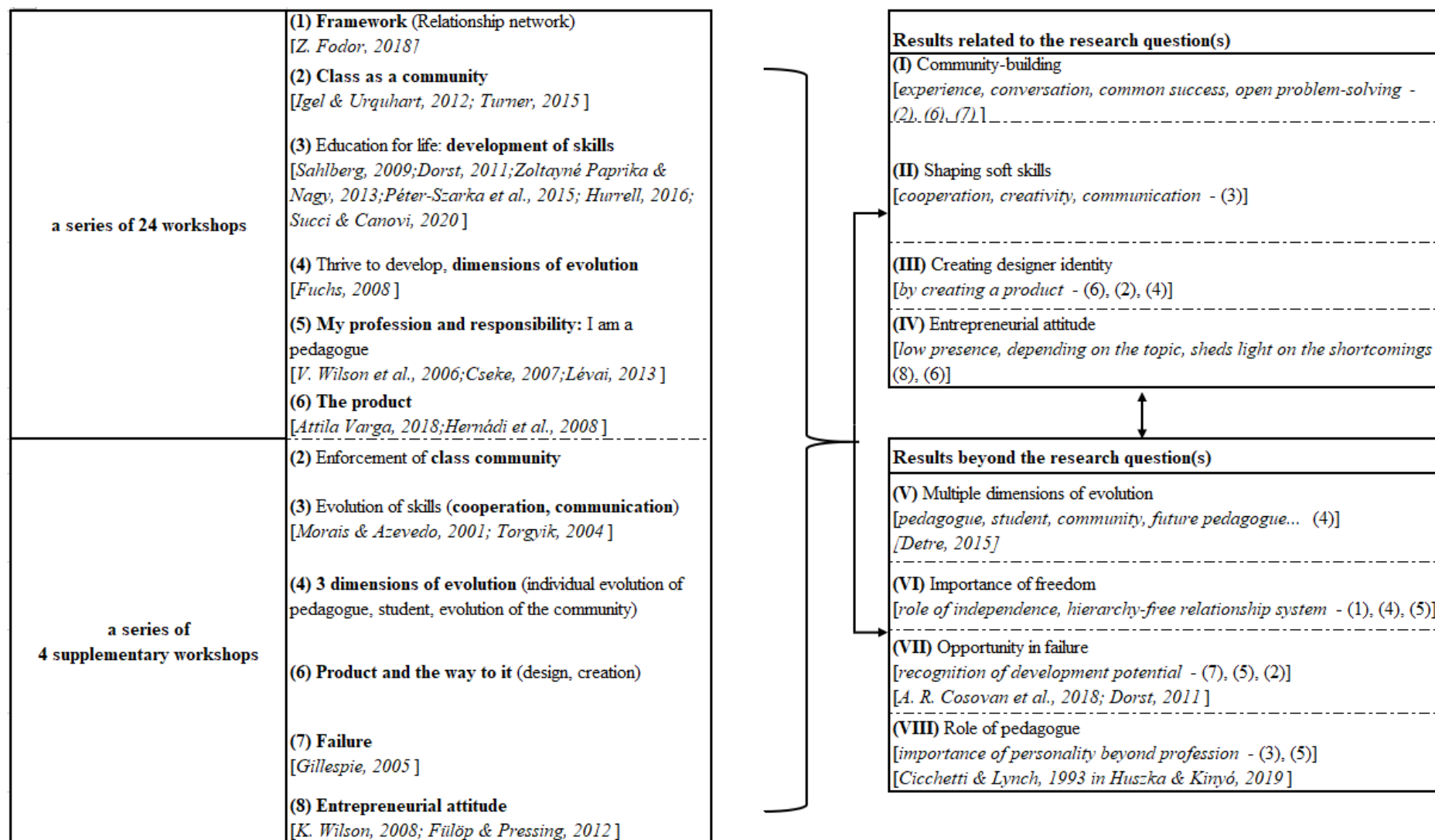
The students identified very quickly with the role of designer (III), building on real-life design processes and settling easily into this role. At the beginning, the interactive presentation only introduced planning tasks that were part of their lives (*"I plan my day"*, *"I figure out what I am going to wear"*, *"I draw something nice"*), but by the second half of the session they had become planners and were given the tasks that came with it (*"I thought like a planner and created with my peers"*). It supported their autonomy, they felt they had to be adults (*"We understood the difficulties of creating something new, what to look for, how to think it through"*). The formation of a design identity was completed by the experience of the creative (flow) experience, which is closely linked to the attitude towards the product and the success of the collaboration through design (*"I think our house together, which we created together, according to our own imagination, turned out well"*).

Entrepreneurial attitude (IV) was much less present than expected, as can be seen in the chapter on the analysis of products. This is also problematic because it makes sense to

implement the exposure of entrepreneurial attitudes at a younger age to increase the likelihood of developing entrepreneurial propensity (K. Wilson, 2008). The lack of this can be attributed to several factors. On the one hand, it is due to the very minimal economic and entrepreneurial education they receive at school, which is not a dominant feature in their thinking, a phenomenon that the results of this research have thus highlighted. But what is more important is the subject matter. The home, and then the environment linked to it, its protection and sustainability, demanded a much more non-profit character as opposed to profitability. In the case of the complementary workshop, there was a higher proportion of concepts linked to entrepreneurial attitudes, but even here they were not significant. The designcommunication workshop and the open problem-solving situation can support the promotion of an entrepreneurial attitude through a well-directed choice of topics, but this requires that the conscious teaching of economic knowledge is given space in everyday life. Teachers are also key players in the socialisation of constructive, rule-following entrepreneurial skills, as confirmed not only by my own empirical research but also by the literature (Fülöp & Pressing, 2012).

Research findings have been visualised through a figure showing the parts of the empirical research through which I arrived at the answers to the research questions. The figure presents the results of the 24-station workshop that defined the main line of the research, aligned with and complementing the results analysed during the complementary workshop. The two main parts of the empirical research, together with the results of the literature analysis, contributed to the exploration of the research questions. In addition to the research questions, the analysis also revealed additional findings related to the questions, which are also presented in the figure.

Figure 55: Summary of the results of the empirical research



Source: own elaboration based on the analysis of the empirical summary

8.8 Values generated by the research

8.8.1 Academic contribution of the research

The scientific added value of this doctoral dissertation is, on the one hand, the partly supplementary literature review and, on the other hand, the result of empirical research. The attitudes, responsibilities, and roles of key educational actors in the development of soft skills have never been analysed before in such a coordinated and cross-disciplinary way. The soft skills of students are present as an output on the education side, while at the same time these skills are gaining importance on the employer side, where they represent the entry threshold. The review of the literature and the results of the empirical research show that the attitude and the personality of the teacher are of key importance, they are the driving forces behind the process, they can create a dialogue between science and business practice, provided they are methodologically prepared to do so.

The academic imprint is further strengthened by the setting of the Hungarian designcommunication methodology in the academic sphere, exploring its interfaces and most significant distinctive features in the context of other academic methodologies.

As a result of empirical research, the need to develop soft skills and entrepreneurial attitudes in primary schools are considered as outcomes. The potential of the designcommunication methodology has also been proved, such as its positive influence on the development of designer identity, the strengthening of class community and the promotion of creativity, which also imply the scientific contribution of the thesis to the academic literature.

8.8.2 Practical contribution (Education, Companies)

I consider the most important practical outcome of the dissertation to be the resulting educational methodological product. A tangible value for teachers and educational stakeholders has been created by providing them with a methodology that supports them in enabling the conscious and guided development of students' soft skills within the school framework. If teachers wish to learn the methodology, they will also be brought closer to the academic community through training, thus creating a link between different disciplines and practice, and thus allowing for more dimensions of interdisciplinarity.

This dissertation is of value to economic actors through the literature and the results of the empirical research that support it. The need and demand identified by teachers for the development of soft skills is in line with the requirements of employers for future employees identified in the literature analysis. Designcommunication workshop represents a BRIDGE

between the two actors, enabling a tighter harmonization of interests. Integrating the soft skills that employees consider the most important into their training can be put into practice through a self-developed workshop. As the results of the empirical research have shown, its application allows for smoother collaboration between community members, improves individual and group communication, and catalyses and supports the development of creativity.

8.8.3 Social benefit of the research

The most important social contribution of this doctoral work is the empirical research process itself. Sample collection was deliberately not done till theoretical saturation. I felt it was important to visit at least one school in every county in Hungary, and to ensure the participation of at least one class to experience a session based on innovative and creative methodology. Positive feedback from teachers and reflections from students along the experience, the researcher and the dimensions of the learning/development process showed that the social utility of the research beyond the academic goals was indeed realised. The 24 workshops brought designcommunication methodology to nearly 500 students. The schools included a significant number of institutions with many disadvantaged or severely disadvantaged children, for whom this kind of experience is a unique and defining experience. Designcommunication is an empathy-based approach that focuses on the value category of objective good. This was considered during designing this research. The primary goal was that this research should not be purely arbitrary, that it should not only serve science, but that social value was aimed to be created with it.

8.9 Limitations of the research

The summary of the limitations of the research also partly indicates future research directions. The identification of limitations also provides an opportunity to analyse research results from a different perspective in the future. In the empirical research, the focus was on the actors of education, and the results obtained as output can provide valuable information for the corporate actors. However, to deepen the dialogue between education and business, it would be important to go beyond the literature analysis and explore the motivations on the company side.

The pandemic situation during Covid-19 can be indicated as a research limitation, which could not enable me to be present personally during the complementary workshop. Personal observation of the teacher, the children and the session would have added value to the results. This also meant that the teacher had the opportunity to work independently. The resulting

individual learning process may imply a more complex, but in the long run more effective development and the courage to apply the method more frequently.

The dual role of the researcher could also be interpreted as a limitation, as she had to be present in the process as an observer and researcher at the same time, which – in the case of a qualitative research strongly linked to fieldwork – could imply an intensive involvement and a subjective filter, which could distort the results of the research.

8.10 Continuation, challenges of the future

The challenge of the future practically starts with this dissertation for me. The aim of this doctoral study was defined as the creation of an educational methodological tool that can be integrated into the closed system of primary schools through the involvement of teachers. The identified values of the method and the results of the empirical research provide the background to start a broad dissemination of the educational product by addressing the key actors in education. The forced school closures caused by the pandemic and the transition to digital education have had an unforeseeable impact on the student community and personal relationships (de Araújo, Veloso, de Campos Souza, de Azevedo, & Tarro, 2020; Gupta & Jawanda, 2020), which is another argument in favour of a greater prevalence of methodologies focused on collaboration, communication and community empowerment.

At the same time, a research map will be drawn up for the business side and the willingness to cooperate will be explored. In the future, depending on the outcome of the research, the actors will be linked, and their actions coordinated in order to raise a generation that is cooperative, creative and highly communicative, and consciously prepared for the world of work.

9. SUMMARY

“Imagination is more important than knowledge.
Knowledge is limited. Imagination encircles the world.”
(Albert Einstein)

This doctoral dissertation is concluded with a researcher's self-reflection. What exactly is the purpose of a doctoral thesis? Can it be arbitrary? Should it serve society, science, or the economy? It took almost a year to put the elements of the research plan together into a big whole. It was a period of trials, dead ends, proposals, learning and development. Because of its qualitative nature, it can be seen as part of the process. While the parts were building on each other, it was kept in mind that I wanted to do something good with the big whole. I believe that being an academic, like being a teacher, comes with a huge responsibility. It is a responsibility to decide what is the subject, the area, that you will spend years studying. For me, this doctoral dissertation is an entry point into academia, where, as a member of the scientific community, we can become a driving force in society and the economy. By formulating our research questions, using the results, drawing the right conclusions, and using them appropriately, we can improve a part of our environment and our world. These may seem like big words, but scientific work (in whatever discipline) has real value. Creating value involves leading by example, which implies an increasing responsibility, and science practitioners need to be aware of this and their choices must be informed by it.

The opening quote made me think about the finite/infinite nature of knowledge. I rather think that it is imagination that makes knowledge infinite. Imagination, if you like, becomes the engine of science. At the beginning of my doctoral studies, I felt I was in the dark. I felt like what I experienced in my empirical research with students as part of a wkinomic collaboration. Think of it as being pushed into a dark pit from which you have to find your way out. Designcommunication defines this as a survival situation where two options are available: either fail the game or find a solution and act creatively (A. R. Cosovan et al., 2018). I chose the latter. There has been much criticism that this is perhaps beyond the mission of a dissertation. In hindsight, I think I was right not to give up and right not to be concerned with who and what was said, but to keep in mind all along that this research should serve the interests of both the educational and scientific community and do so not only in the hope of the expected outcome, but also during the journey to get there.

Whether the research has resulted in the emergence of creativity as an essence of a two-dimensional designcommunication methodology, alongside academic values? According to Csíkszentmihályi, creativity is born when the interaction of the following 3 elements is created (A. R. Cosovan et al., 2018; Csíkszentmihályi, 2008). The first is a culture of symbolic rules, which is the conceptual and collaborative system developed with teachers and students in my research. The next such element is the innovators who smuggle innovative elements into this symbolic system, as in my case the researcher, the teacher and the students have become cross-domain innovative actors. The third element essential to the emergence of creativity is the wider and narrower circle of experts who recognise the innovation. The teachers and educational stakeholders involved in the research have done this. However, to complete creativity, the acceptance of the academic stakeholders is also needed who see the potential and whose support I have, so that together, for the development of the next generation, the questions and conclusions of this thesis can be taken forward in the best way, prioritising the improvement of science and society.

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ANNEX

I. Phases of the workshop

1. The trainer introduces herself, outlines the aim of the research and the phases of the research and the workshop (5-7 minutes)
2. The presentation aimed at children and specially made for the workshop describing the designcommunication methodology is delivered (25 minutes)
3. Description and solution of the individual task (5 minutes)
 - a. *“Please think about the most important problem which affects your home and for which you would like to find a solution”*
4. Random formation of groups of 4-5 students (depending on the class size) (5 minutes)
5. Group work (15-20 minutes)
 - a. *“The problem now becomes an opportunity. Discuss the individually identified problems and select one of them. You will undertake to make your home better with the solution of this problem. Design how realisation would take place”*
6. The groups present the solution one by one (as a function of independent organisation) (10 minutes)
7. The community jointly selects the best solution and/or develops a new solution from the ideas they consider best. (15 minutes)
 - a. *“Your task is to select one of the options you have heard here with which you could make your home better. It is important that the community must unanimously agree on the decision.”*
8. The practical realisation of the idea takes place (30 minutes)
9. Students summarise and present their result to the trainer, the visualisation of the solution is made as part of the product (15 minutes)
10. Students summarise their experiences in the “Memory book” as the final step of the workshop. (10 minutes)
 - a. *Please write something in my memory book. I would like you to sincerely write down how you felt, what you liked and what you did not like. Describe your own role and how you contributed to the solution.*
 - b. *I would like you to write down what kind of person the presented designcommunication would be, if it was a person. Write down whatever*

comes to your mind. Characterise him/her and your relationship with him/her in detail.

c. Please draw creativity!

II. Questions during the pedagogue in-depth interview

Questions about actual personal competences

1. Please introduce yourself as a pedagogue, your position within the school and your most important professional competences!
2. How would you describe yourself? What kind of teacher are you from the point of view of children? What sort of feedbacks do you get from students?

Class and Community

3. What is your relationship with the class?
4. What is the difference between the average and the creative design establishment of contacts?
5. What efforts are made to form an appropriate community in the class? What do you, personally do for this?
6. Does a good/bad classroom community have an effect on learning outcomes (and, if so, what kind of effect)?
7. Overall, how would you characterise the current classroom community? What strengths and weaknesses can be observed?
8. Is there any group work at school? If so, in what form is it realised? Please tell me specific, realised examples, if any.
9. Do students express themselves during lessons? Do they express their opinion?

The desired educational institution

10. How would you describe a school which operates well in your opinion?
11. In your opinion, what is an ideal student/pedagogue like?
12. Do you know the efforts of the new National Core Curriculum? How do you think they contribute to the realisation of an idealised school?

Creativity

13. Which animal do you think would be the best pedagogue?
14. What do you think creativity would be like if you had to identify it as one of the animals alive today?
15. Please identify and describe in detail what creativity would be like if it was an imaginary animal! Please give me the most accurate description possible!
16. Please draw, visualise how creative education can be applied in practice in the classroom!
17. What does creativity mean for you? How would you define the concept of creativity?
18. Why is creativity important in education? What is its role?

III. Presentation on designcommunication delivered during the workshop

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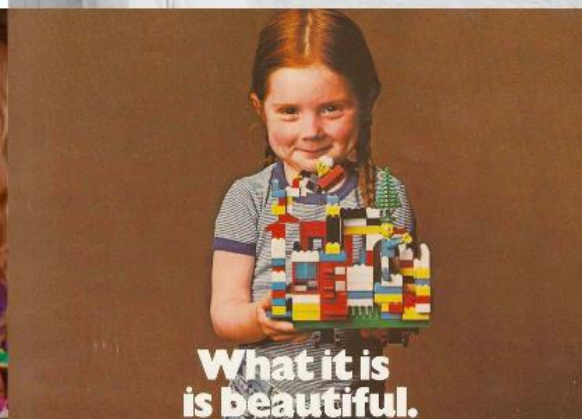
PROBLÉMAMEGOLDÁS

KONVERGENS GONDOLKODÁS

Pontosan meghatározható, jól körülírható probléma megoldása, amelyre létezik jó megoldás

DIVERGENS GONDOLKODÁS

Olyan folyamat, amely olyan problémára keresi a legjobb megoldást, amire nem is biztos, hogy van jó megoldás. Nem csak a megoldást, de a hozzá vezető utat is fel kell találni.



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PROBLÉMAMEGOLDÁS ÖSSZETEVŐI

MIT + HOGYAN	→	EREDMÉNY (ADOTT)
MIT / ??? + HOGYAN / ???	→	EREDMÉNY/VÁGYOTT ÉRTÉK
??? + ???	→	EREDMÉNY/VÁGYOTT ÉRTÉK

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DISCO SZEMLÉLET

Nyílt problémamegoldó helyzetek megértését és megoldását támogatja, ahol nem állnak rendelkezésre kész módszerek és nincsenek viszonyítási pontok.

Adott helyzetben eredmény és módszer egymásból következnek, fejlesztésbe integrált kommunikáció valósul meg

DISCO™

mi az a DISCO?

design = tervezés, alkotás
kommunikáció = kapcsolatteremtés

nem minden ember designer (?), de minden ember képes (kreatív) kapcsolatteremtésre

DISCO SZEMLÉLET

ha az ösztönös kreatív kapcsolatteremtésen keresztül történik meg a tervezői attitűd elsajátítása is, az sokkal könnyebb, mintha racionális gondolkodáson keresztül zajlana

DISCO

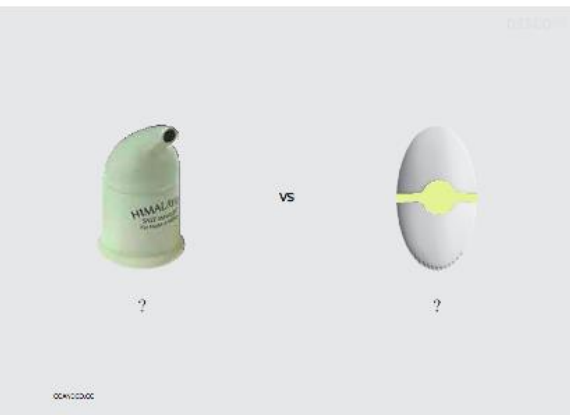
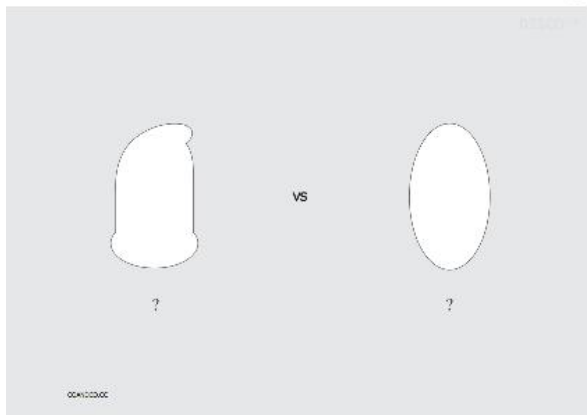
DESIGNKÖMUNIKÁCIÓ = FELISZTERÉS (FEJLŐDÉS) INTEGRÁLT KOMMUNIKÁCIÓ

DESIGN = JÓT CSINÁLNI
 KOMMUNIKÁCIÓ = JÓT MONDANI

DISCO DESIGNKOMMUNIKÁCIÓ = FEJLESZTÉSBE
 (FEJLŐDÉSBE) INTEGRÁLT KOMMUNIKÁCIÓ

a megfelelő viszonyrendszerben felállított kérdésfelvetésre
 és mindenki számára elérhető empátiára építő szemlélet

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SORVEZETŐK



miért a DISCO?

—mert—
 kreatív, akadémiai alapokon álló módszertan, ami az elméleti háttérrel és a gyakorlati tapasztalatot a lehető legjobban fogja össze.

—mert—
 nem mondjuk mi a jó irány, hanem segítünk abban, hogy kialakuljon a jó irány

—mert—
 nem keretezzük be a kreativitást, hanem a csoportdinamika segítségével hozzuk ki a legjobbat a csapatból

—mert—
 a workshop vezető oktatók egyaránt elméleti és gyakorlati szakemberek

DISCO DESIGNKOMMUNIKÁCIÓ = FEJLESZTÉSBE
 (FEJLŐDÉSBE) INTEGRÁLT KOMMUNIKÁCIÓ
köszönjük a figyelmet!

IV. Declaration of consent for students

I, the undersigned _____ (birth name: _____, place and date of birth: _____, mother's name: _____) **as a legal representative clearly and explicitly give my consent** with the present declaration for my son/daughter (birth date: (*), place and date of birth: (*), mother's name: (*)) to participate in the educational methodological research conducted at the place and on the date below by the **PHD student (Daniella Dominika Horváth)** of the Department of Marketing, Media and Designcommunication of the Faculty of Business Administration of the Corvinus University of Budapest and for the organisers to make image, sound and video recordings during the research in accordance with paragraph¹ 2:14. § (1) and provisions of 2:48. §² of Act V of 2013 on the Civil Code of Hungary.

Place of recording: (*) Date of recording: (*)

I give my consent for the Corvinus University of Budapest to use the image and video recordings made of my son/daughter, in particular to publish them on social networking sites and use them during the making of short film/video materials.

I have understood the information that the aim of the use of the recordings is to analyse and evaluate the research, popularise the educational methodological tool and enhance the scientific results of the design and educational methodology.

Based on point a) of paragraph (1) of article 6³ of Regulation (EU) 2016/679 of the European Parliament and of the Council (hereinafter referred to as GDPR) I declare that I have become fully aware of the content of the privacy notice regarding the making and use of photos and I give my consent for the management of data according to the privacy notice.

I take note that I can withdraw my consent any time. The withdrawal of the consent does not affect the legality of the consent-based data management before the withdrawal.

(*)

Budapest, (*) (*) 2019

¹ 2:14. § (1) The declaration of incapacitated minors is null and void; their legal representatives act on behalf of them.

² 2:48. § (1) The consent of the data subject is necessary for the making and use of the image or sound recordings.

³ 1) of article 6 The management of personal data shall be lawful only if and to the extent that at least one of the following applies: a) the data subject has given consent to the processing of his or her personal data for one or more specific purposes.

V. Declaration of consent for pedagogues

I, the undersigned _____ (birth name: _____, place and date of birth: _____, mother's name: _____) **clearly and explicitly give my consent** with the present declaration for the organisers to make image and sound recordings of me during the educational methodological research conducted at the place and on the date below by the **PHD student (Daniella Dominika Horváth)** of the Department of Marketing, Media and Designcommunication of the Faculty of Business Administration of the Corvinus University of Budapest in accordance with the provision of 2:48. §¹ of Act V of 2013 on the Civil Code of Hungary.

Place of recording: (*) Date of recording: (*)

I give my consent for the Corvinus University of Budapest to use the image and video recordings made of me, in particular to publish them on social networking sites and use them during the making of short film/video materials.

I have understood the information that the aim of the use of the recordings is to popularise the educational methodological tool and enhance the scientific results of the design and educational methodology.

Based on point a) of paragraph (1) of article 6² of Regulation (EU) 2016/679 of the European Parliament and of the Council (hereinafter referred to as GDPR) I declare that I have become fully aware of the content of the privacy notice regarding the making and use of photos and I give my consent for the management of data according to the privacy notice.

I take note that I can withdraw my consent any time. The withdrawal of the consent does not affect the legality of the consent-based data management before the withdrawal.



(*)

¹ 2:48. § (1) The consent of the data subject is necessary for the making and use of the image or sound recordings.

² 1) of article 6 The management of personal data shall be lawful only if and to the extent that at least one of the following applies: a) the data subject has given consent to the processing of his or her personal data for one or more specific purposes.