The study discusses the systematic and goal-oriented and facilitated critical thinking development as a key educational competence of the 21st century by the means of Philosophy for Children didactic method (Lipman, 1972). It discusses the facilitation of this method in the Slovak university education where this course has been practiced for more than six years. The first results discuss the feedback reflection of P4C participants of this course in comparison to the feedback reflection of Austrian, Spanish and Italian students by “The evaluation project questionnaire (EP-Que)” used in PEACE project. Our results prove the Slovak P4C participants score above average values referring to their median scores in P4C goal fulfillment, P4C cognitive and affective skills development and significantly lower to Austrian students, and significantly higher to the Spanish ones. The study emphasizes the important potential of P4C method in the Slovak conditions, and also the limits and future research intentions needed to be done to support P4C efficacy.

Keywords: critical thinking development, Philosophy for Children, experimental university group, feedback reflection, international comparison of the feedback.

1 INTRODUCTION

There is an increasing interest to develop, strength, and facilitate 21st century basic life skills especially in the educational system. One of the key skills needed is an ability to think critically and objectively. It is emphasized and requested by current and also future employers while looking for most effective employees. Critical thinking is characterized, in particular, by the meta-thinking ability (thinking about one’s own thinking and improving one’s own thinking), by higher cognitive processes (analysis, judging, induction, deduction, evaluation), by constant questioning (for oneself and others), by activity, skepticism, independence, by openness to new ideas, and by resistance to manipulation [1]. It is active in assessing other people’s statements, whether they are true or not; whether we should believe them or not; in assessing the conduct of others; in thinking about own opinions and mediating them to others; when deciding what to do. Autonomous people with an analytical and critical approach to reality build self-judgments on self-discovery and conviction about the qualities relatively independent of the situation and conditions [2].

Critical thinking can be explained as applied thinking [3] needed in our schools for Generation Z and Generation Alpha. Being aware of this necessity, we created an educational project of “Children and Adolescent’s Critical Thinking Development by Analytical and Discussion Method Philosophy for Children, P4C (035UMB-4/2018)” applicable to our Slovak school systems. There are several various methods of critical thinking support (e.g. Knowledge Building Communities, Problem Solving Tasks, Socratic/Inquiry Questioning, Think Aloud, Cooperative Learning ReQuest, Role Play, etc.). We were looking for a didactic method or concept that would be applicable to primary (ISCED 1), lower secondary (ISCED 2), upper secondary (ISCED 3) and also first stage of tertiary (ISCED 5) education level, and would reflect the educational needs of the 21st century.

2 PHILOSOPHY FOR CHILDREN

Our intention is aimed at critical thinking development by the means of non-traditional discussion method using philosophical method of analytical, creative and caring/cooperative (3Cs) thinking, Philosophy for Children (further in the text P4C), by Mathew Lipman (1972), professor of philosophy and logic. He was also a founder of the Institute for the Advancement of Philosophy for Children (IAPC) in Montclair State University, New Jersey, USA. Lipman created this concept as a reflection of his personal experiences with university students not being able to express, argue, discuss or lead dialogue at the university classes. He realized there is a great need to start with intentional critical thinking development by means of community of inquiry a lot earlier. The community of inquiry, firstly introduced by pragmatist
Philosophers Peirce and Dewey, is defined as a group of individuals involved in a process of empirical or conceptual inquiry into problematic situations searching the common problem solution [4]. It emphasizes that knowledge is embedded within a social context requiring intersubjective agreement among the involved [3]. P4C has the potential to be implemented in the educational process of primary, secondary, high schools and also at the University level as we can refer to our personal experiences. However, we have to conclude the P4C practicing and its adaptation, evaluation, and implementation into the Slovak conditions is very rare in contrast to more than 60 countries of its usage [5]. We have been practicing this method as a “compulsory-optimal” class for future teachers of Ethical Education and as optional class for future teachers of various academic fields at the Faculty of Education, Matej Bel University in Banská Bystrica, Slovakia for more than six years.

The primary aim of P4C is the development of children potential of all ages as better thinkers, subsequently as more reasonable beings. We do realize and agree with several authors ([6], [3], [7]) thinking can be taught and improved, and that it takes place within a subject: “one thinks about something, one does not just ‘think’”, and to enhance better thinking there is a way by philosophical means, especially from Socrates’s dialogue of “an art to ask questions”. P4C encourages children and adolescents to think, to express their ideas, to reason, to challenge one another’s opinion and to make judgements. However, at the same time to listen to each other, to respect opinions of others, to build on one another’s ideas, to assist each other in drawing inferences from what has been said, and to seek to identify one another’s assumption about issues being interesting to the group, especially those ones of judgements about values as well as better understanding and clarification of the concepts. P4C process involves children and adolescent’s activity to create meaning of their worlds, constructing their values, knowledge, dispositions and making informed and well thought out judgements [3]. P4C teachers are there to facilitate the process of thinking. The underlying notion is that thinking develops through a conversation within a community of inquiry: “my thinking develops because I have a language by means of which I can express my thoughts I also have the capability of listening to others, assessing/judging their positions, and changing my beliefs accordingly is being seen as a possibility of critical, creative and caring thinking development” ([8], p. 72).

2.1 The structure of P4C didactic method

1. **Getting Set/Getting Started with Stimuli Presentation**: The first moment is to start with a stimuli leading and provoking philosophical thinking. The stimuli can be a picture, a story, a movie, a video, a play, a music, a clip, etc. anything reflecting the interest of the involved, of the participants of community of inquiry. The most often a common story reading is being used. It is important the stimuli reflects the interest, experiences and problems of the participants, so they are able to form questions about it [3].

2. **Thinking Time**: Then the community thinks, formulates, and asks questions without judgements, without criticism referring to the chosen philosophical problem/question.

3. **Question Process Making/Presenting/Choosing**: The community chooses a question they will try to discuss about, and look for the possible answers to it. In this phase, we do allow the group to take ownership of the problem; it is their ideas leading the lesson’s direction.

4. **First Thoughts/Building Community of Inquiry**: We ask the participants to try to answer the question in a community of inquiry.

5. **Last Thought/Reviewing Process**: In the final phase, they try to formulate the concluding sentence/the final answer that needs to be verified within the community, even better in the real setting (more in [9]).

Turek [1] adds that to think critically is a deep and complex thinking about the information presented in various forms; he characterizes it as a metacognitive thinking (thinking about own thinking) by means of higher cognitive and philosophical processes, by questioning and searching, and the P4C methods is one of the possible choice to provoke children and adolescent’s thinking.

3 RESEARCH

3.1 Research objectives

The present study aims to analyze the effect of Philosophy for Children course applicable to the University setting during the winter term of a school year 2018/2019. The course was a compulsory
course for the graduate students – future teachers of Ethical Education in Slovakia. Ethical Education is a compulsory class (being alternated with Religion Education) during 11 years of the Slovak schooling (starting at the level of ISCED 1 to the ISCED 3 during its first two years, more information is presented in a study by Kalisky (2019) at the EDULEARN 2019 conference). The course lasted four hours per a week during 13 weeks. Our intention was to compare the feedback reflection of our P4C participants with the feedback reflection from P4C center in Austria, Spain and Italy co-working together at the project Philosophical Enquiry Advancing Cosmopolitan Engagement (PEACE, co-funded by Lifelong Learning Programme, EU, [18]) on the results of P4C Questionnaire created to evaluate the P4C implementation method within PEACE programme.

We questioned two following questions:

- Q1: What is the level of dis/satisfaction with P4C programme of our university students in the dimensions of P4C general aspects of the programme, P4C goals, P4C cognitive skills, and P4C affective skills development?
- Q2: Are there comparable results of the P4C project evaluation of the Slovak university students to primary and secondary school students in the main dimensions of P4C general aspects of the programme, P4C goals, P4C cognitive skills and P4C affective skills development?

3.2 Research sample

The research sample consisted of 17 university graduate students (Mage=21.11, /SD=3.08/; 76.5% of females), future teachers of Ethical Education, from Faculty of Education, Matej Bel University in Banska Bystrica, central Slovak region. The research sample was obtained by targeted and occasional sampling as a part of some university classes.

3.3 Research methods

We have used a self-report instrument to fulfill our research goals. The instrument was identical with “The evaluation project questionnaire (EP-Que)” used in PEACE project. The questionnaire consisted of 46 identical statements based on a 5-point Licker scale to assess the degree of our students’ dis/agreement with the statements. The questionnaire is intended to assess general aspects of the P4C programme (6 statements), P4C goals (14 statements), P4C cognitive skills (17 statements) and P4C affective skills (10 statements). The inner consistency for three dimensions ranged from 0,53≤α≤0,84.

Our evaluative research is based on descriptive and differential analysis of differences between P4C feedback reflections of the Slovak sample to three other countries. SPSS 24 software was used to analyze the data.

4 RESULTS

The basic descriptive indicators for four dimensions of the P4C evaluation program in the Slovak sample assesses by EP-Que are presented in Table 1.

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>AM</th>
<th>SD</th>
<th>Median</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>General P4C aspects</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4C goals</td>
<td>2.83</td>
<td>3.83</td>
<td>3.36</td>
<td>.29</td>
<td>3.33</td>
<td>-.164</td>
<td>-.558</td>
<td>.153</td>
</tr>
<tr>
<td></td>
<td>3.29</td>
<td>4.50</td>
<td>3.66</td>
<td>.35</td>
<td>3.64</td>
<td>.994</td>
<td>1.201</td>
<td>.685</td>
</tr>
<tr>
<td>P4C cognitive skills</td>
<td>3.18</td>
<td>4.41</td>
<td>3.76</td>
<td>.40</td>
<td>3.82</td>
<td>.021</td>
<td>-1.161</td>
<td>.836</td>
</tr>
<tr>
<td>P4C affective skills</td>
<td>3.30</td>
<td>4.40</td>
<td>3.88</td>
<td>.32</td>
<td>3.90</td>
<td>-.290</td>
<td>-.702</td>
<td>.526</td>
</tr>
</tbody>
</table>

According to the results can be stated that the level of P4C goal fulfillment, P4C cognitive and affective skills development reach above average values referring to their median scores. The inner consistency of these dimensions is also satisfactory.
The problem arises with a dimension of General P4C aspects where this dimension is not consistent and that is why we should not analyze the reached value of this dimension.

The next table 2 analyzes differences of three dimensions between the Slovak university students level of P4C reflections to Austrian, to Spanish and to Italian primary and secondary students attending PEACE programme based on P4C method by the means of one sample t-test analysis. We could not use any other statistical analysis, for the final report of PEACE programme reports only the arithmetical means of these dimensions.

<table>
<thead>
<tr>
<th></th>
<th>Slovak (N=17)</th>
<th>Austrian (N=442)</th>
<th>Spanish (N=183)</th>
<th>Italian (N=548)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4C goals</td>
<td>AM</td>
<td>t</td>
<td>p</td>
<td>AM</td>
</tr>
<tr>
<td></td>
<td>3,66</td>
<td>-7,45</td>
<td>***</td>
<td>3,99</td>
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<tr>
<td></td>
<td>4,43</td>
<td>-7,75</td>
<td>***</td>
<td>3,32</td>
</tr>
<tr>
<td>P4C cognitive skills</td>
<td>AM</td>
<td>-5,97</td>
<td>***</td>
<td>4,07</td>
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<tr>
<td></td>
<td>4,39</td>
<td>-5,62</td>
<td>***</td>
<td>3,21</td>
</tr>
<tr>
<td>P4C affective skills</td>
<td>AM</td>
<td>-5,63</td>
<td>***</td>
<td>4,14</td>
</tr>
<tr>
<td></td>
<td>4,37</td>
<td>-5,41</td>
<td>***</td>
<td>5,29</td>
</tr>
<tr>
<td></td>
<td>3,88</td>
<td>-5,63</td>
<td>***</td>
<td>4,14</td>
</tr>
</tbody>
</table>

The statistical analysis proves all high significant differences by one way t-test analysis in respect to higher level of all dimensions for the Austrian primary and secondary students. Secondary students from Spain scored significantly lower at P4C goals fulfilment, P4C cognitive and affective skills development to the Slovak sample.

5 DISCUSSION
At the beginning, it is important to emphasize P4C didactic methods is used very rarely in the Slovak educational conditions. There are only a few teachers or professionals interested in P4C methods in Slovakia ([4], [10], [11], [12], [7]), though there are quite a lot of them abroad ([13], [14], [15], [16], [17] and others). However, the exact research findings of its efficacy are completely missing (only 18 datasets among more than 100 found were suitable to be submitted to meta-analysis by Moriyon, Colom, Rebollo, [19]). That is why the potential of this study can be seen in:

- P4C practical implementation into the Slovak university setting;
- the detailed description of P4C structure;
- the first feedback assessment of P4C method applied as a optional-compulsory class during 13 weeks;
- the feedback assessment comparison of four different countries where P4C has been applied for various purposes.

Our results suggest our University students value the most the development of affective and cognitive skills by P4C method. Although P4C was first developed to focus on the cognitive skills development, later on Lipman [6] stressed the necessity of fostering affective and social skills. The affective skills are reflected within P4C as caring and cooperative thinking in a way of improvements participants’ communication skills, confidence, trust, empathy, tolerance, concentration and self-management of their
feelings/impulsivity more appropriately. Developing of cognitive skills such as anticipating consequences, giving examples, identifying problems, become clearer, more accurate, less self-contradictory and more aware of arguments and values of the others before reaching a conclusion are inevitable skills needed for this century. P4C general aspects assessment cannot be interpreted correctly for its not satisfactory inner consistency, so there is going to be needed future research item verification of this dimension.

Nowadays, P4C attracts the attention of more than 60 countries starting with teachers in 90s of the last century in the United Kingdom with BBC documentary 'Socrates for Six-Year-Olds' [14] and by the establishment of SAPERE organization (Society for the Advancement of Philosophical Enquiry and Reflection in Education) there. The International Council of Philosophical Inquiry with Children (ICPIC) has been a global international network engaging those ones interested in P4C since 1985. It has its local centers in various states, as The Austrian Center for Philosophy for Children (ACPC) at University of Graz, Austria, Interdisciplinary Centre for Research on Educational Thought (CIREP) in Italy, and Innovation and Research on Teaching Philosophy Group (IREF) in Spain and many others. We have chosen these three local centers, for they became collaborators in PEACE project based on P4C aspects development and facilitation. We have also started a mutual cooperation with ACPC, and welcomed their willingness to help us with our local, Slovak, center of P4C establishment. That is why we have chosen their results of evaluation feedback report after P4C implementation in their project.

We have found out the Austrian primary and secondary children do benefit the most from this method in all aspects. The Spanish secondary school students even reached lower level of P4C affective and cognitive skills development within this project in comparison to our Slovak university students’ group. It can be stated these results refer to a long-lasting P4C tradition being supported in the educational system in Austria in comparison to our Slovak educational system where there is this kind of supportive education missing. Our students are not used to this kind of education, and facilitation during their study classes that might be comparable to the Spanish students’ experiences. Besides the topic of cosmopolitan themes developed in PEACE project, the whole P4C didactic method was completely new to Spanish teachers and students as reported in their report. It is important to realize communities of inquiry take time to be established, to be developed and grow. The students need time to internalize basic features of the method, need to develop trust and respect to the others in a group, and they also need time to develop their reasoning skills to be improved. This means both a teacher and students need to learn new ways of thinking, relating, learning, caring, cooperating and simply being with one another.

6 CONCLUSIONS, LIMITS AND FURTHER RESEARCH AMBITIONS

On the other side, we are aware of some limits of this presented study. Some of the most important are: just one Slovak experimental group being assessed in respect to their feedback, then not equally comparable international groups, and no exact international data from the evaluation report (e.g., we would rather recommend to compare medians and usage of non-parametric test for the size of our research group), and the self-report measure itself and its not verified educometric properties (reliability and validity).

That is why we highly recommend the usage, implementation, spreading and verification of the P4C didactic method in the Slovak educational setting, and creating our local center of P4C as in the surrounding countries (in the Czech Republic, Hungary, and Austria that we have already started cooperation with). At the same time we do agree with Moriyon, Colom, and Rebollo [19] that there is a great need for exact empirical verification of P4C efficacy in respect to basic principles of methodology (experimental/control group, pre/post-test assessment, need of clear, exact and comparable data for the deep analysis /means, standard deviations, number of participants, their closer characteristics, exact description and verification of the measurements used, etc./. The authors also claimed it is important to try to evaluate all the basic aspects of P4C method, not only cognitive skills, but also the affective (caring or cooperative) and creative ones.

ACKNOWLEDGEMENTS

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REFERENCES