LONGITUDINAL CO-TEACHING PROJECTS – SCOPING REVIEW

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ABSTRACT

The main orientations of education policy with a view to the next decade include, inter alia, promoting educational innovation and verifying it through further professional development of teaching staff and exploring the effectiveness of learning. One of the possibilities of achieving this goal is co-teaching and its forms, which are constantly evolving. The aim of this study is to provide an overview of approaches not only to the actual implementation of co-teaching, but also to the whole process of preparation in order to evaluate the experience gained in a number of researches already carried out, in the form of an overview study. An inductive thematic analysis of published articles in 2005-2020, with a predominance of attention for the period 2019 and 2020, was used in 16 databases such as ERIC, Scopus®, Complementary Index, etc. As a result, 19 articles were finally included in the analysis of the issues examined. Inductive thematic analysis identified six themes: (1) "co-teaching effectiveness", (2) "problems and obstacles", (3) "methods of and with co-teaching", (4) "teachers' roles and relationships", (5) "teachers' cooperation", and (6) "special educational needs" (SEN). The scoping review study covers the theoretical basis of co-teaching issues, the results of research surveys or experiments on the procedures, advantages or barriers of various co-teaching models. The study serves as a basic framework supporting the creation and application of a virtual component as a new part of the educational method of co-teaching solved by the TAČR project.

KEYWORDS

Co-Teaching, Co-Teaching Efficiency, Co-Teaching Methods, Problems and Obstacles of Co-Teaching, Relationships and Cooperation of Teachers, Educational Needs

1. INTRODUCTION

Co-teaching as an innovative method is being given increasing attention in the international environment, especially through realized experiments. Several expert studies are being conducted with research-based knowledge. Research topics are specifically focused on other forms of professional development of teachers in relation to specific educational needs, on the development of social interactions, active learning, reflective thinking, cooperation and joint learning, with the aim of effective learning of pupils and acquisition of competences needed for active civic, professional and personal life.

Co-teaching defines Bacharach et al. (2010) as joint planning and teaching of two or more teachers. The co-teaching model, where the teacher-mentor and the starting teacher perform together, use strategies requiring shared authority, consistent involvement of both teachers, cooperation in teaching planning and evaluation of teaching. Co-teaching, as stated in e.g. Friend (2014, 2015) was originally based on cooperation between teachers of special and general education. Practical applications mention e.g. Ricci and Fingon (2017). However, in the course of co-teaching, research has revealed other benefits of such guided teaching (Friend, 2015; Ricci and Fingon, 2017; Sanchez et al., 2019; Walsh, 2012). When applying co-teaching, it is possible, for example, to divide students into groups according to their abilities and to take advantage of the opportunity to teach students in different ways, apply different methods, individualize teaching. The mentoring model

makes it possible to improve cooperation in school environments, promote mutual learning among teachers (Baeten and Simons, 2014; Fraser and Watson, 2013; Rabin, 2020). In the framework of research into the cooperation of teachers in general education in co-teaching, better student learning outcomes, knowledge consolidation (Eckardt and Giouroukakis, 2018; Ronfeldt et al., 2015; Vescio et al., 2008). Experiments or case studies also focus on the effects of virtual co-teaching, e-learning (Chan et al., 2012; Puttonen, 2014; Takala and Wickman, 2019; Wilson and VanBerschot, 2014).

The key to co-teaching success, as Rexroat-Frazier and Chamberlin (2019) report, is the clearly defined purpose of joint teaching and the selection of partners in teaching, co-teacher education. The effectiveness of co-teaching is further influenced by teaching practices, together with the use of effective teaching strategies, effective practices, their balance. The research carried out shows that they focus mainly on teaching practices.

The aim of the scoping review is to analyze and summarize the most important knowledge on selected topics of co-teaching as a starting point for further research work within the project Technology Agency of the Czech Republic (TAČR: TL03000133) entitled *New Method of Education for the 21st Century: Virtual-Co-Teaching* solved in the period 2020-2023. This project focuses on virtual co-teaching and its effectiveness. Therefore, also our research question asked is: "What role does virtual environment play in co-teaching?"

2. BODY OF PAPER

2.1 Methods

2.1.1 Scoping Review Methodology

We chose scoping review as the research method. This method is suitable for the systematic search, selection, analysis and subsequent synthesis of the obtained information so that we can answer research questions responsibly. The methodological basis for our study was the work of Arksey and O'Malley (2005), which we followed in all steps of the research.

2.1.2 Identifying Relevant Studies

When searching for studies, we first used the keyword "co-teaching". The result was more than 2,000 studies. That's why we've added an advanced search that's consistent with our goal. Another string was the word "long-term", the results suddenly from 12 studies. We replaced the word long-term with "longitudinal" and the result was another 17 studies, different from the previous combination. Another combination was the search for "co-teaching" and virtual at the same time. The result was another 10 studies. We then used the same criteria in Google Scholar. For 5 records were found after the phrase "virtual co-teaching" was found. Next, we searched in the title of the article virtual and co-teaching and found 5 articles.

16 Databases (ERIC, Complementary Index, Academic Search Ultimate, Scopus®, Supplemental Index, APA PsycInfo, Social Sciences Citation Index, Directory of Open Access Journals, Gale eBooks, Springer Nature Journals, ScienceDirect, MEDLINE, JSTOR Journals, Library, Information Science and Technology Abstracts, Business Source Ultimate, Humanities Source Ultimate) and Google Scholar were searching to find as many relevant studies as possible. We limited your search to 1990-2020. The search tool was the system of Charles University UKAZ and separately the search engine Google Scholar. In Table 1, all the results are.[1]

2.1.3 Inclusion and Exclusion Criteria

We identified a total of 49 studies that we had to go through and manually sort. The inclusion and exclusion criteria were discussed by all authors together. We focused mainly on the period 1990-2020, as previous studies are not relevant to the virtual dimension. In the end, we selected 19 studies in our sample that meet the main criterion of long-term research and deal with the effects of co-teaching or its effectiveness. We have also included all studies that study the virtual possibility of co-teaching. PRISMA systematic evaluation (Moher et al, 2009) was used and our algorithm and results are described on Figure 1.

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[1] Reference to the UKAZ system, which has access to all of the above databases:
http://eds.b.ebscohost.com/eds/search/advanced?vid=7&sid=b259143b-4e01-42db-8c7c-22f94f9d499f%40pdc-v-sessmgr04.

Table 1. Exact search string results in indexed databases with exact search string

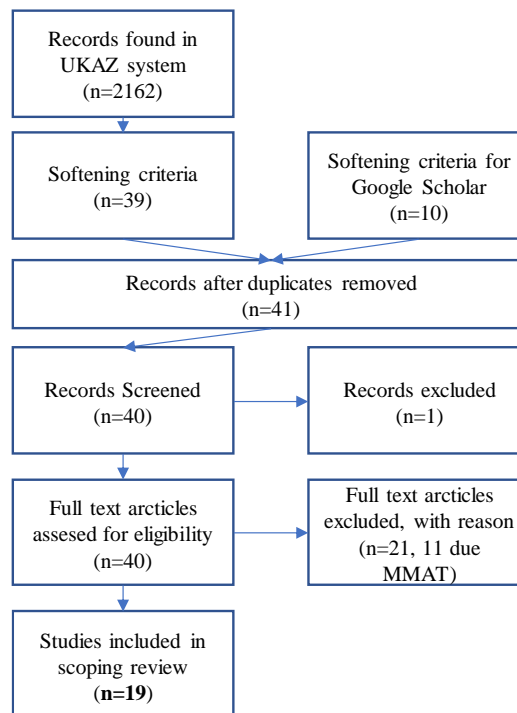| Databases	Search String	Records Identified
ERIC, Complementary Index, Academic Search Ultimate, Scopus®, Supplemental Index, APA PsycInfo, Social Sciences Citation Index, Directory of Open Access Journals, Gale eBooks, Springer Nature Journals, ScienceDirect, MEDLINE, JSTOR Journals, Library, Information Science & Technology Abstracts, Business Source Ultimate, Humanities Source Ultimate	co-teaching	2162
	co-teaching AND virtual	10
	co-teaching AND long-term	12
	co-teaching AND longitudinal	17
Google Scholar	"virtual co-teaching"	5
Google Scholar	allintitle: virtual co-teaching	5

Figure 1. Search Flowchart

2.1.4 Critical Appraisal

When evaluating the quality of studies, we used the Mixed Method Appraisal Tool (MMAT), version 2018. According to this methodology, we were able to disable studies based on proven quality criteria for mixed research and study methodology. The MMAT follow-up was used independently by two authors from our group to promote independence and eliminate subjective concepts. Based on NMAT, 11 studies were excluded.[2]

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[2] See http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/fetch/127916259/MMAT_2018_criteria-manual_2018-08-01_ENG.pdf.

2.1.5 Data Analyses

The method of inductive thematic analysis was used for data analysis (Corbin and Strauss, 2008). The articles were sorted by content into individual categories, the authors identified key topics in them, and then the articles were re-grouped according to selected key topics.

2.2 Results

A total of 19 articles were analyzed. The most frequently declared aim in these articles was "to analyze the experience with co-teaching" (n=5), "describe the impact and benefits of co-teaching for students" (n =4), "identify specifics and patterns of cooperation of teachers in the co-teaching process" (n = 4), "describe the advantages and disadvantages of co-teaching" (n =2), "describe specific possibilities of use" (n=2), "identify the strengths and weaknesses of the method and modify it" (n=1) and "describe the attitudes of teachers" (n=1). 10 of these 19 studies, used a qualitative design, 3 used a quantitative design and 6 studies used mixed methods. Most studies relied on multiple methods of data collection (n= 12). The most common method of collecting qualitative research data was interviews (n=7). This method was supplemented by written reflection of respondents (n=6), observation (n=4) and open question questionnaire (n=2). Statistical methods were mainly based on questionnaires and scaling (n=10). An overview of the methods used can be found in Table 2.

2.3 Themes

Based on thematic analysis, six themes mentioned by the respondents in the articles reviewed were identified in the studies: (1) "**co-teaching effectiveness**", (2) "**problems and obstacles**", (3) "**methods of and with co-teaching**", (4) "**teachers' role and relationships**", (5) "**teachers' cooperation**", and (6) "**special educational needs**". Individual topics cannot be completely separated from each other, because, for example, the topic of co-teaching effectiveness is mingled with virtually all the texts analysed and is always placed in another context related to another identified topic. Otherwise, effectiveness will be seen in combination with special educational needs and otherwise in the context of teacher cooperation, their roles and relationships. It is therefore clear that in the co-teaching process, individual topics are logically intertwined and always accentuate a certain aspect related to the specific context in which this method is implemented. The following section describes the identified topics in more detail, including the relationship or context with other co-teaching topics.

2.3.1 Co-Teaching Effectiveness

The effectiveness of co-teaching is a central identified topic, which in a way contains all the texts. It includes, on the one hand, a view of effectiveness by the teacher (e.g. Wilson and VanBerschot, 2014, Jurkowski and Müller, 2018, Neifeald and Nissim, 2019, Rabin, 2020) as well as a student view (e.g. Puttonen, 2014, Strogilos, King-Sears, 2019). The view of effectiveness by teachers is usually the basis for revision of the methods used or modification of a new co-teaching course. Based on a pilot study, the teachers reflect the entire teaching process, finding the positives and negatives on which it is based when adjusting the course or educational activity to its final form (Kim et al., 2007, Wilson and VanBerschot, 2014, Neifeald and Nissim, 2019).

In view of the research question asked, "What role does virtual environment play in co-teaching?", the technical readiness is essential in terms of efficiency (Chan et al., 2012, Wilson and VanBerschot, 2014). This factor lies (Chan et al., 2012) on the border between efficiency and problems, because with technical complications it is impossible to teach effectively with two people, the benefit of the method decreases and complications and negative impact on results dominate. This aspect is also essential from the point of view of students who perceive the readiness of a co-teaching pair (whether technical or human).

Table 2. Summary of individual studies

Author/Year	Aim	Research type	Study design and methods	Study Participants	Themes	Virtual
Chan et al. (2012)	Based on a three-month measurement, describe the positive impact of co-teaching on students, teachers and school principals.	Mixed methods	structured questionnaire with scale, personal interview after the lesson	3 full classes (A with leading teacher, B with supportive tacher and C observing)	problems and obstacles, teachers' cooperation, co-teaching effectiveness, teachers' roles and relationships	Yes
Eckardt et al. (2018)	Describe the impact of co-teaching in combination with situational learning on the teaching students.	Qualitative	analysis of anonymous reflection of students taught by co-teaching, observation during lessons and teacher's notes	21 teachers taking a co-teaching-led "teen literacy" course	teachers' cooperation, effectiveness of co-teaching, combination of methods	No
Rabin (2020)	Describe the process of implementing co-teaching in the co-work of a mentor and a novice teacher.	Qualitative	interviews, observations, qualitative analysis of co-teaching implementation	241 participants, 70 mentors and 171 novice teachers	teachers' cooperation, ethical dimension, co-teaching effectiveness, teachers' roles	No
Jurkovsky and Müller (2018)	Describe the development of the relationship of a co-teaching couple composed of a special educator and an ordinary teacher.	Quantitative	questionnaire, 3 measurements / year	36 ordinary teachers, 19 special educators, 184 students	teacher cooperation, teacher relationships, problems and obstacles, co-teaching effectiveness, special educational needs	No
The Park (2014)	Identify specific patterns of cooperation of teachers in class.	Qualitative	analysis of 5 videos from English lessons in one class	2 teachers (native and non-native speaker)	teachers' cooperation, teachers' roles and relationship	No
Neifeild and Nissim (2019)	Identify the benefits of the "Academia Class" programme and its impact on co-teaching practices.	Quantitative	questionnaire, statistical evaluation	participants in the Academia Class project, 125 (51 teachers, 26 teachers with SEN, 18 primary school teachers, 20 early childhood teachers, 10 trainers)	teachers' cooperation, combination of methods, teachers relationship, co-teaching effectiveness	Yes
Ricci and Fingon (2017)	Based on the analysis of experience with co-teaching to create the basis for effective application of co-teaching at primary and secondary schools in teaching a class with pupils with SEN.	Mixed methods	evaluation and reflection of co-teaching training plans, analysis of experience; mathematical and statistical methods of data evaluation	34 postgraduate students, 14 special pedagogy, 20 literature	special educational needs, teachers' cooperation	No
Campbell et al. (2018)	Describe the pros and cons of co-teaching by looking at university students.	Mixed methods	structured questionnaire (online, Likert scale), qualitative analysis of open responses	not stated	teachers' cooperation, problems and obstacles	No
Puttonen (2014)	Analyse new experience of students with online teaching led by two experts.	Quantitative	structured questionnaire (online)	32 graduates of virtual co-teaching course	co-teaching effectiveness, teachers' cooperation	Yes
Takala and Wickman (2019)	Describe the experience of rural teachers with co-teaching and identify problems in its application.	Mixed methods	questionnaire, content analysis of open answers	40 teachers from one municipality (29 ordinary , 11 special educators)	cooperation of teachers, problems and obstacles to co-teaching	No
Sanchez et al. (2019)	Analyse the pedagogical experience with a postgraduate course led by the co-teaching method in order to identify the strengths and weaknesses of this method.	Qualitative	case study, written reflection of participants and its content analysis	3 cooperating experts (university teacher), 2 directors	teachers' cooperation, problems and obstacles	No
Stroglios and King-Sears (2019)	Describe the experience and progress of students with and without SEN in co-teaching.	Qualitative	semi-structured interviews	3 students with SEN, 7 students without SEN	co-teaching efficiency, special educational needs	No
Wilson and VanBerschot (2014)	Analyse and subsequently modify the e-learning course for master's students.	Qualitative	case study, design thinking	2 teachers and course participants	teachers' cooperation, co-teaching effectiveness	Yes
Thompson and Dow (2017)	Describe the effectiveness of co-teaching of two experts from different disciplines compared to teaching led by one expert.	Mixed methods	action research, observation and measurement using a scale	24 science students	co-teaching effectiveness, combination of methods, teachers' cooperation	No
Kim et al. (2007)	Describe the possibilities of using the CACSR computer program in co-teaching lessons to promote reading among students with SEN.	Qualitative	evaluation and reflection of the method	2 teams of teachers (ordinary teacher and special educator)	special educational needs, teachers' cooperation, teachers effectiveness, teachers' roles	Yes
Duran et al (2020)	Analysis of attitudes of teachers towards co-teaching in the context of conceptual training.	Mixed methods	questionnaire, analysis of written reports	82 wells as co-teachers in two groups (with and without training)	teachers' cooperation, co-teaching effectiveness, problems and obstacles	No
Lohmus et al (2019)	Describe the benefits of co-teaching and identify its potential risks.	Qualitative	structured interviews	2 co-teachers. 4 students reflecting co-teaching at higher education	teachers' roles, co-teaching effectiveness, teachers' cooperation	No
Montgomery (2019)	Analyze co-teachers' collaboration.	Qualitative	reflection of experience	2 co-teachers reflecting on their practical teaching experience	teachers' cooperation, teachers' roles, co-teaching effectiveness	No
Bilican et al. (2020)	Analyse the use of co-teaching as a method of further teacher education.	Qualitative	VNOS-C questionnaire , analysis of recordings of educational activities, reflective interviews, participating observations	2 co-teachers (science teacher and university teacher)	teachers' cooperation, teachers' roles, co-teaching effectiveness	No

2.3.2 Problems and Obstacles

Problems and obstacles of co-teaching can be divided according to three identified potentially problematic factors – the factor of technical problems, the human factor and the lack of time – based on the texts analyzed. Technical problems are complicated mainly by co-teaching using a virtual environment. Chan et al. (2012) stated that the well-managed technical aspect of the whole process is essential for virtual co-teaching and therefore, after a pilot analysis of virtual learning, they made the necessary technical adjustments. For example, the problem of face imaging and face-reading had to be technically solved by installing additional audio/video technology and cameras on the move (specifically, mobile cameras on teachers' heads). Thanks to this effect, students in the classroom were able to synchronize and at the same time include a peer learning method, which was not possible without additional technical installation. Subsequent results have shown that if virtual co-teaching is technically handled well, it can lead to positive impacts on students (Chan et al., 2012).

The human factor is the most fundamental. If cooperation does not work, teachers do not plan and evaluate joint teaching, there are significant shortcomings and the method does not have the necessary benefits (Jurkowski and Müller, 2018). A specific area of the human factor is the approach of the school management to co-teaching. Takala and Wickman (2018) have identified the role of the headmaster as a significant obstacle in the implementation of co-teaching, since its implementation is directly dependent on the decision of the headmaster and not on the teachers, which logically leads to the fact that the headmaster who is not inclined to it will not support and implement it at the school.

It is clear that teaching one group of students with two people is challenging and necessarily requires time to prepare lessons, create a meaningful plan, split roles, set up cooperation and then reflect on teaching and translate it into further planning and other lessons (Ricci and Fington, 2017). However, teachers do not have enough time available (Park, 2014, Jurkowski and Müller, 2018) and therefore cannot devote themselves to preparation and reflection to the extent necessary. The lack of time factor was reported by most studies as the most important and most affecting overall effectiveness of co-teaching (Takala and Wickman, 2018, Jurkowski and Müller, 2018, Ricci and Fington, 2017, Sanchez et al., 2019).

2.3.3 Methods of and with Co-Teaching

Specific chosen methods, procedures and forms are different in different implementations. In the analyzed texts we encountered the following forms of co-teaching methods:
- One teach – one support, also supporting model (Park, 2014, Chan et al., 2012, Eckardt et al., 2018, Takala and Wickman,2018, Lõhmus et al., 2019, Montgomery, 2019, Duran et al., 2020, Rabin, 2020).
- Alternative Teaching, also complementary or complementary model (Ricci and Fington, 2017, Strogilos and King-Sears, 2019, Jurkowski and Müller, 2018, Kim et al., 2007).
- Team-teaching (Wilson and VanBerschot 2014, Puttonen,2014, Thomson and Dow, 2017, Campbell et al., 2018, Neifeald and Nissim, 2019, Sanchez et al., 2019, Bilican et al., 2020).

In the "one teach – one support" model, in addition to standard assistance to the head teacher, it is also a method of education for future or novice teachers. In fact, the head teacher becomes a mentor at the same time, listening and learning from each other based on a partnership, which is not entirely possible with classical mentoring (Montgomery, 2019; Rabin, 2020). Bilican et al. (2020) shows co-teaching as a possible way of further education. A team consisting of a university teacher and an ordinary teacher confirms that the professional development of teachers can be effectively based on a co-teaching strategy.

Furthermore, co-teaching was supplemented by other methods, which are used as standard even in classical teaching by one teacher. Eckardt et al. (2018) combine co-teaching with situational learning, resulting in more effective knowledge consolidation than teaching with one teacher. Chan et al. (2012) combines co-teaching in a virtual environment with peer learning by students, which increases the effectiveness of the positive impacts of co-teaching on students. The virtual part is involved in co-teaching in different ranges. It allows you to teach using e-learning courses (Wilson and VanBerschot, 2014), teach together and be different (Puttonen,2014, Chan et al. 2012) or take advantage of two teachers and digital technologies and special educational programs (Neifeald and Nissim,2019, Kim et al., 2007).

2.3.4 Teachers' Roles and Relationships

The division of roles is closely related to the chosen co-teaching method. As far as the "one teach – one support" model is concerned, it makes sense that the teaching will always have its head teacher (e.g. Lõhmus et al., 2019). Roles between the different co-teaching pairs can also result naturally from the education and approbation of individual teachers. It is logical that otherwise there will be divided roles in the teaching of pupils with special educational needs, where special educator and ordinary teacher teaches (Strogilos and King-Sears, 2019, Jurkowski and Müller, 2018, Kim et al., 2007) and otherwise in foreign language teaching, where a native speaker and teacher speaking the student's mother tongue is involved (Park, 2014). When using the virtual component of co-teaching, they are also the basis for the division of roles of digital competence of individual teachers (Kim et al., 2007). With regard to the various roles, it is also necessary to mention the ethical dimension of cooperation, where the balance of power, collegiality, the pursuit of the same goal at the same level of mutual consent should be maintained in relations between co-teachers and feedback on teaching should be shared (Rabin, 2020).

2.3.5 Teachers' Cooperation

The cooperation of teachers is also based on individual methods of co-teaching and their role in teaching. However, regarding the effectiveness of co-teaching, its development is important. Teacher cooperation is in three stages – planning, implementation and reflection. In this area, however, it also encounters the problem of the time factor, which is the most frequently mentioned obstacle to the quality implementation of co-teaching (Takala and Wickman,2019, Jurkowski and Müller, 2018, Ricci and Fington,2017, Sanchez et al., 2019). In preparation there is room for more creative methods of teaching and in implementation a faster and better response is possible, as well as space for improvisation (Eckardt et al., 2018). Based on joint reflection, it is possible to change and modify the work with students to make it more effective and impact on students greater (Wilson and VanBerschot, 2014, Thompson and Dow, 2017). In the preparatory phase of co-teaching, it is advisable for future co-teachers to use suitable workshops to help them set up mutual cooperation and lead to greater efficiency of the method (Rabin, 2020)

Cooperation co-teachers can also be based on mutual replenishment, where the pair consists of experts with different specializations. The results demonstrate the effectiveness of co-teaching led by two subjects, leading to a deeper understanding of the subject (Thompson and Dow, 2017).

Quality cooperation of teachers also brings reliability to students. If there are 2 teachers, students have answers from two different sources, which they consider more reliable. Furthermore, this association opens a new perspective for them at work, because the differences in teacher experience make students see the problem from multiple perspectives and there is constructive discussion (Eckardt et al., 2018). Co-teaching enables the application of a wide range of teaching practices, including partnerships between teachers and teachers, shared planning and evaluation of teaching. Without co-teaching, these procedures would be very difficult to implement, even completely unfeasible Neifeald and Nissim, 2019).

2.3.6 Special Educational Needs (SEN)

A specific thematic area consists of special educational needs, in which co-teaching is used as a method that helps to lead teaching in the class of intacted and SEN pupils. Studies show a positive experience (Strogilos, King-Sears, 2019) and pupils report that it was an effective "extra help" that allows them to feel valid members of the class (Strogilos, King-Sears, 2019). More flexibility of teachers and the ability to respond to individual needs have also been confirmed by these students (Strogilos, King-Sears, 2019). Jurkowski and Müller (2018) offer another look at the use of co-teaching in teaching students with SEN, which focuses mainly on the cooperation of an ordinary teacher and a special teacher, which is not always easy. Cooperating teachers encounter a lack of planning time, which in turn also affects the possibility of a positive impact on students and the effectiveness of teaching. This aspect is also mingled with other mentioned topics and is the overall dominant mentioned problem in the implementation of co-teaching (Chan et al., 2012, Takala and Wickman, 2019, Sanchez et al., 2019).

3. CONCLUSION

The overview study focuses on co-teaching as an innovative method, which is also given increasing attention in terms of professional development of teachers and especially with regard to social interactions, active and joint learning and, above all, to the development of the effectiveness of pupils' learning and the acquisition of their necessary competences for a successful and active civic, professional and personal life.

As already mentioned in the previous sections of this overview study, co-teaching is a topic whose importance is increasing over time, while virtual co-teaching is also part of the expert discussion. Co-teaching can be analyzed from different points of view. However, the different areas of co-teaching and the prospects for its use are intertwined and linked to specific contexts (e.g. virtual environments), with the issue of co-teaching effectiveness linking them. Given the research question asked ("What role does virtual environment play in co-teaching?") this co-teaching context is examined within the individual identified topics as and if it appears in the source documents.

Co-teaching efficiency, identified as a central and cross-cutting theme, includes both a view of effectiveness by the teacher (Wilson and VanBerschot, 2014, Jurkowski and Müller, 2018, Neifeald and Nissim, 2019, Rabin, 2020), and students (e.g. Puttonen, 2014, Strogilos and King-Sears, 2019). Technical readiness, standing on the border between the topic of efficiency and problems and obstacles, is crucial for the effectiveness of the virtual co-teaching process from the point of view of teachers. In addition to the mentioned technical readiness, the human readiness (cooperation) of the co-teaching two is also important for students in the virtual form of co-teaching, allowing students to orientate well in their teaching.

3.1 Application

The findings presented in this study and the lessons learned from previous research in selected six thematic areas can be used as a basic framework for the preparation, implementation and reflection of co-teaching as an innovative method using different methodological procedures and forms of teaching, in which two teachers are always involved in different roles and evolving cooperation. For the effectiveness of co-teaching (including virtual co-teaching), it is important to deal with its entire process (planning, implementation, reflection, including the choice of co-teaching type and its specific variant of virtual co-teaching). Other contextual conditions that affect the effectiveness of (virtual) co-teaching and are elaborated in sub-topics in this study include technical readiness, a time factor for considering the specific educational needs of pupils.

3.2 Limitations

English articles were included in the overview study. This can affect the overall validity of the results found and their portability into local education systems, which are shaped in accordance with each country's education policy strategy (subsidiarity principle). Grey literature was not included in the review.

The presented study provides an overview of the types of co-teaching (including virtual) and the basic topics to be addressed in order to make this innovative teaching method effective. The results of the study will also be used in the next phases of the TAČR project[3]

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