Alena Letina, PhD, Assistant Professor
Faculty of Teacher Education, University of Zagreb
Department of Science, Geography and History
alena.letina@ufzg.hr

Mario Vasilj, PhD, Full Professor
Faculty of Natural Sciences, Mathematics and Education, University of Mostar
mario.vasilj@fpmoz.sum.ba

CHALLENGES OF IMPLEMENTATION OF COOPERATIVE LEARNING IN INITIAL TEACHER EDUCATION

Abstract: This paper discusses the concept of cooperative learning and the role of education of future teachers in the development of their competencies for their implementation in teaching. The aim of this paper is to research the content of relevant literature and to determine whether previous research has sufficiently included an analysis of the competence of teachers and students of teacher education and the role of educational programs in training them to successfully apply ccooperative learning.
It was found that, due to the lack of appropriate competencies of teachers for the implementation of this teaching strategy, its application is often neglected. Therefore the development of adequate knowledge, skills and positive beliefs of future teachers about cooperative learning can be considered priorities of their formal education. It was found that so far only a few studies have been conducted on the actual competencies of future teachers for the successful implementation of this teaching strategy, and there is a lack of research on whether teacher education programs adequately support their development. Therefore, this paper concludes on the need to undertake research that will provide a more concrete insight into the current situation and encourage quality and more frequent application of cooperative learning in teaching practice.

Keywords: competencies for cooperative learning, cooperative learning, future teachers education, student-teachers, teaching strategies

INTRODUCTION

Over the last decades, the importance and value of teaching which inegrate with constructivist views, has become increasingly important. Contrary to the previously dominant model of knowledge transfer, in which teaching consists almost only of a one-way communication process (Jonassen et al., 2005), the constructivist teaching paradigm emphasizes student activity and the ability to construct cognitions based on peer interaction (Jonassen, 1999). Peer interactions in the constructivist learning context, are a frequent topic of educational research (Goodman et al., 2005; Lopata et al., 2003; Slavin, 2004). In contrast to the competitive approach in teaching, during which students achieve their goals without taking into account the goals of other students and the individualistic approach that emphasizes the achievement of goals through individual work (where the goals achieved by students are not related to the goals of other students) (Johnson & Johnson, 2009), through cooperative learning, students achieve common goals, provide encouragement to their group members, and help each other to learn (Woods & Chen, 2010). Based on this, it can be concluded that cooperative learning is a strategy that ensures coherence and positive interdependence among group members and results in the learning of each of its members. Positive interdependence within a group exists when individuals perceive that they can achieve their goals only if other individuals, with whom they are cooperatively, also connecting group members as entities in the area of joint work (Johnson et al., 2007). Such interdependence in cooperative learning ensures the responsibility of each student for their own learning, but also the learning of other members of the group, in which they are located. There are three basic categories of their interdependence: the outcomes they want to achieve, the means by which this will be achieved, and borderline interdependence (Johnson & Johnson, 2009). In such a way of learning, there is also an individual responsibility that arises from the fact that each member of the group should contribute to their own engagement and work.

Promotive interaction among group members, is manifested when individuals facilitate efforts to complete tasks and achieve goals for that group. Meaningful promotive interaction is possible only in smaller groups (Leikin, 2004), because a smaller number of students within the group enables easier exchange of information between them, but also mutual opposition of conclusions and reflections. Separation of roles within a group, can also promote positive interaction (Rose, 2004). Also, the effectiveness of peer collaboration is greatly influenced by the reflection of the group of students themselves, on how well they function and how they can improve their learning processes. Therefore, teachers should provide time in class to ask group members to describe actions that have been helpful in achieving group goals and maintaining effective cooperative relationships. The goal of such learning, is not only

focused on students' cognitive performance, but social skills are also considered an important part of the learning process and outcomes. These skills should be encouraged in students, as well as cognitive abilities and skills (Johnson, 2006; Johnson & Johnson, 1999). Student communication skills, decision-making skills, and conflict management are important for cooperative learning (Johnson & Johnson, 2009).

Cooperative learning was developed in the 1960s as a way of working in a group in which students achieve common goals, and the evaluation of their achievements is individual (Millis & Cottell, 1998). Among the various models of cooperative learning, well-known is the *Learning Together* model by Johnson and Johnson (1999), and other important models are the *Structural Approach* (Kagan, 1994), *Group Investigation* (Sharan, 1994), and Slavin's Team Learning Method (1996). These are models in which students work together to achieve a common goal, with appropriate interaction and group processes (Prichard et al., 2006). In this way of learning, specific forms of interaction among group members are realized, such as asking questions, discussing and explaining, and providing conditions in which each member of the group benefits from working together (Dillenbourg, 1999). Its important feature is sense of community that develops among group members, and learning, which is an integral part of this way of working, is an active, constructive process (Millis & Cottell, 1998).

Discussions on cooperative learning emphasize the significant difference between traditional group work and cooperative learning, which is reflected in the responsibility of each individual for the learning process, which is specific to cooperative learning, which is why it is crucial to structure cooperative activities so that students depend on each other, while at the same time they are having individual responsibility for the results of their work (Nedeva et al., 2015). This way of learning eliminates the possibility of profiting from the group's results without one's own involvement in the realization of the given task. A more detailed comparison of the characteristics of traditional group work and cooperative learning can be seen in Table 1.

Table 1 Comparison of traditional group work and cooperative learning
        (Nedeva et al., 2015, p. 227)

Traditional group work	Cooperative learning
Low interdependence of group members	High positive interdependence of group members
Group members take responsibility only for their own learning	Group members are responsible for their own learning and the learning of other group members
The emphasis is only on individual action	The emphasis is on group action together
Tasks are discussed without much commitment to the learning processes of other group members	Group members encourage mutual success by working together, helping and encouraging each other to invest in learning efforts
Teamwork skills are not directly involved	Teamwork skills are emphasized
There is no reflection on the quality of group work	The group thinks about the quality of their work and how to increase their efficiency in working together
Individual achievements are rewarded	The emphasis is on continuously improving the work of the group

Considering the many advantages and positive educational outcomes of cooperative learning, many experts in the field of education have researched the basic features of this teaching strategy and the specifics related to its application in teaching practice. Therefore, the aim of this paper is to analyze the relevant literature on the concept of cooperative learning, and especially the results of previous research on the competencies of teachers and students of Teacher education for its successful implementation in educational practice. The programs of formal education of future teachers are of great importance in the development of adequate methodological competencies for the change of cooperative learning, and in this context it will be investigated whether there is research that has dealt with this issue.

RESEARCH OF THE ADVANTAGES AND LIMITATIONS OF COOPERATIVE LEARNING

According to research by Johnson and Johnson (1999), cooperative learning promotes a more positive attitude of students toward teaching than a competitive or individual approach. Also, Johnson and Johnson (1989) state that cooperative learning achieves: prolonged memory, more frequent higher-order

thinking, deeper understanding, more concentrated student work and less in-discipline, greater motivation to learn, increased ability to view situations from a different perspective, and a more tolerant attitude toward peers. In addition, students' academic achievement is enhanced, their self-esteem is encouraged, and social interaction skills are developed (Johnson & Johnson, 1992; Slavin, 2004). Slavin (2004) emphasizes that through cooperative learning students acquire critical thinking skills and develop metacognitive learning strategies, while Dillenbourg (1999) emphasizes his contribution to the development of students' communication and cooperative skills needed to cope and succeed in modern society. A meta-analysis of 90 different cooperative learning studies (Rohrbeck et al., 2003) found that cooperative learning increases the success of even those students who have learning difficulties, while certain meta-analyzes are indicators of a significant positive and moderate effect of cooperative learning on students 'mathematical achievement (Turgut & Turgut, 2018), but also on students' attitudes towards that subject (Capara & Tarim, 2015).

However, there are studies that warn that productive cooperative learning in small groups will not occur if students are not accustomed to working in this way and are not specifically trained to do so (Mercer & Sams, 2006). Achieving quality cooperation in cooperative groups of students is a very demanding and time-consuming process depending on the good guidance of the teacher and his competencies for it. The teacher should take care to apply procedures that ensure the productivity of each group. This means that each group should have a clearly defined task that will allow them to engage in activities aimed at solving a given problem. Brüning and Saum (2008) agree that during cooperative learning it is important to ensure a certain period of time for individual thinking of students, and then encourage the exchange of thinking by which students will improve their thinking and gain confidence and courage to present the results. Each student should first independently, actively process the offered content and individually incorporate it into their mental structures. In the thinking stage, the student constructs meaning and connects prior knowledge with new knowledge. Then, in the exchange stage, co-construction is realized. Each individual compares the claims of other students with their constructions and re-examines their original constructions. In the third stage, in which the groups present their results, each student first incorporates the presented data into their mental network, and during the discussion a new co-construction is encouraged (Brüning & Saum, 2008).

Many studies of the effectiveness of cooperative learning have revealed the positive effects of this way of learning on the development of students' (meta) cognitive performance and social competencies. Johnson and Johnson (1989) find that collaboration results in more frequent metacognitive reflections, more accurate and creative problem solving, greater willingness to solve more demanding tasks, and the development of perseverance in achieving goals and

solving assigned tasks. Other scientists have obtained similar results in their research (Fawcett & Garton, 2005; Lou et al., 1996; Slavin, 1996). The main results of the research by Larazz et al. (2017) show that students use cooperative learning to develop and improve certain skills such as negotiation, leadership, teamwork and reflection, and that applying this strategy contributes to creating a positive classroom atmosphere and social interactions among students.

In addition to the many prominent advantages of cooperative learning, some experts also point to certain disadvantages or challenges of this form of learning. For example, it has been found that the use of cooperative learning can have negative effects on student motivation in the event that some group members do not actively participate in its work (Jacques, 2004). Also, some research has shown that cooperative learning can create a sense of cognitive load in students (Moreno, 2009), while Gillies (2006) and Webb (2009) find that insufficient in-depth quality of discussion among group members can occur during cooperative learning. Various practical limitations are also mentioned, such as the availability of materials needed for cooperative learning (Abrami et al., 2004), the time-consuming nature of cooperative learning, and difficulties in designing group tasks (Baines et al., 2003; Blatchford et al., 2003; Gillies, 2006) and the difficulty of preparing students to work together (Blatchford et al., 2003; Gillies & Boyle, 2010; Webb st al., 2006). Teachers also fear the loss of control over student work, the inability to realize all learning outcomes envisaged by the curriculum, and the unequal contribution of students during cooperative work (Veenman et al., 2002).

However, given the significant range of identified positive learning outcomes that result from cooperative learning and the benefits that result from such learning, it is logical to expect the inclusion of cooperative learning in the teaching of various subjects, but also in teacher education programs that would for its implementation. If future teachers want to use cooperative learning, they must know what is meant by cooperative learning, recognize the value of this strategy for cognitive and affective development of students and have the necessary knowledge and skills to plan cooperative learning activities. Along with these efforts, there are also initiatives for the professional development of teachers in this area.

TEACHERS` COMPETENCIES FOR THE IMPLEMENTATION OF COOPERATIVE LEARNING

Although there is still no generally accepted and unambiguous definition of the concept of competence, most modern world educational policies have commited for a holistic approach to competencies in which they are defined as multidimensional and transferable quality of action (Kerka, 1998), and thus as a strong potential for quality improvement in the the process of upbringing and

education. Most definitions in their structure under the development of competencies imply the formation of the overall personality of the each individual including his knowledge, values, skills, abilities and attitudes necessary for his personal realization and development and effective action in a particular domain (Eurydice, 2011; Rychen & Hersch Salganik, 2003). That is, they include the cognitive, affective, voluntary, and ethical-value dimensions (Hoskinks & Deakin Crick, 2010; Rychen & Hersch Salganik, 2003). Such a complex definition of the concept of competence emphasizes their multifunctionality and applicability in different situations and contexts. Therefore, in the context of considering the competencies of teachers and students of Teacher education for the implementation of cooperative learning, the above holistic approach to the concept of competencies is started, which means that they include quality theoretical knowledge and methodological knowledge orientation towards such a way of learning.

The importance of teachers` competencies for the organization of formal cooperative learning is multiple. The teacher will determine the size of the groups, choose how to assign students to groups, decide which roles to assign to group members and prepare the materials needed by students to complete the task. By assigning roles to students, role interdependence is established. These preparatory actions will be followed by an explanation of the task and criteria for achieving success and the structuring of positive interdependence and individual responsibility within the group. It is very important to emphasize the mutual cooperation of group members, which eliminates the possibility of competition among students and extends the positive interdependence of the goal to the class as a whole. During the implementation of cooperative learning in groups, important are teacher`s competencies in monitoring learning within groups and providing assistance and interventions aimed at improving task solving and teamwork performance. In addition, teachers collect specific data on promotive interaction, and the application of social skills among students, and on the inclusion of desired patterns of interaction in group work. These data are used to intervene in groups and to guide group work. At the end of cooperative learning, the teacher will assess the quality and quantity of student achievement and encourage discussion about the effectiveness of collaboration within the groups themselves and between different groups.

Kobbe et al. (2007) emphasize that the action of teachers should be limited to thorough planning of cooperative learning settings and accessibility to student questions during the cooperative process. However, despite thorough planning, it can happen that students' cognitive and metacognitive activities during cooperative learning are not of sufficient quality and depth, which can have detrimental effects on intragroup collaboration and individual learning of individuals. Therefore, it seems that the key competency of teachers is not only to plan the interaction of students, but also to monitor whether there is

really quality interaction between them. From all of the above, it follows that the teacher in cooperative learning has an important role to play in ensuring the high quality of student interactions, on which the effectiveness of cooperative learning depends (Dillenbourg & Self, 1995; Kobbe et al. 2007; Webb, 2009).

Duran (2017) points out that the implementation of cooperative learning requires teachers to move from a transmissible model of teaching (in which students have a passive role and learn only what the teacher directly teaches) to a transformative model (in which the teacher organizes the learning process so that students can learn from others). Kaendler et al. (2015) develop a theoretical framework of teacher competencies which are needed to implement cooperative learning into teaching practice. They distinguish three moments: before the student interaction occurs (overactive phase or planning phase), during the student interaction (interactive) and at the end of the activity (postactive or reflective phase).

Preactive actions or planning activities relate to the role of the teacher, which begins with designing interaction among team members, establishing criteria and procedures for building teams, and formulating guidelines for work. Students cooperate to learn, but at the same time they learn how to cooperate. Thus, the teacher must prepare students for constructive interactions, create a positive framework for learning in interactions, and train students to make appropriate use of cooperative skills (Topping et al., 2017).

Interactive actions refer to the teacher performing some actions (for example, monitoring student work). By monitoring, the teacher assesses the quality of interaction within teams on three levels: cooperative (active participation and exchange of ideas), cognitive (asking key questions and providing detailed explanations), and metacognitive (processes involved in preparing activities, executing them, understanding members' activities and evaluating their work).

Post-active actions are carried out after the end of the activity. Teachers think about their role, the work processes used and the degree of achievement of goals. Each ongoing assessment provides information that provides sufficient formative feedback on student progress and the role of teachers.

In cooperative learning, teachers introduce students to different ways of thinking and learning, pointing them to possible ways of expressing ideas, seeking help, and challenging opposing views, and teaching them how to think rationally (Mercer et al., 1999). Students are sensitive to teacher discourse in the teaching process, which in turn can significantly influence students' reactions to learning and the perceptions they shape during learning (Patrick et al., 2001). The term discourse refers to the language that teachers and students use in communicating with each other. Conversation is a medium through which communication takes place during classes, so the study of discourse in the classroom is of particular importance. Adequate asking of questions and application of student answers is in the service of creating adequate interaction

with students and realization of learning outcomes of prescribed curricula, and active involvement of students in the learning process. Analysis of patterns of interaction during class has shown that teachers on average speak more than two-thirds of the time during class, with several students giving most of the answers to the questions asked (Patrick et al. 2001).

Three different patterns of discourse in the classroom were identified: silent discourse (the teacher talks almost all the time and only occasionally asks questions), controlled discourse (the teacher tries to balance the frequency of his and the student's speech including all students in the heuristic conversation) and active (The teacher moderates the interactions and discussions that are mostly realized through student interaction with each other). Attempts to reform teaching based on constructivist attitudes toward learning encourage teachers to make less oral presentations and frontal teaching, and students to present and argue their beliefs and constructively discuss reasons and evidence.

In their study, Turner et al. (2002) found that experimental group teachers who emphasized the relevance of learning and encouraged students to actively learn and emphasized the goals that students should achieve during learning to develop their personal competencies, achieved an extremely strong positive impact on the learning process and conveyed their own positive expectations. Student success in such an environment was accompanied by effort and personal progress, as opposed to an environment in which students compared their success with each other, which did not result in such products.

In contrast to the teachers in the experimental group, in the control group the teachers were focused on guiding and assessing students, using a more authoritarian approach to students that often limited the possibilities of their independent action. In the control group, students experienced learning mainly as a means to achieve teacher recognition, and their success was measured by outpacing the success of other students in the classroom. Interestingly, Turner et al. (2002) found that students in the control group also resorted to cheating procedures during the process of checking their achievement, and disruptive behaviors were more common compared to the experimental group in which teachers used motivational discourse. Turner and Patrick (2004) also find in their study that teachers, by supporting and encouraging students, significantly influence student behavior and their work habits.

From these studies, it can be concluded that teachers who encourage students and provide them with appropriate support during the learning process provide students with more opportunities for autonomous behaviors than teachers who are more focused on performance and testing outcomes. It is interesting to note that, although the above studies did not specifically identify forms of cooperative learning, many of the activities in which students participated involved students in collaborating with each other, especially during open problem-solving activities.

Based on their research on teacher discourse in Israel, Hertz-Lazarowitz and Shachar (1990) find that teacher discourse in frontal teaching could be defined as oral presentation, instruction to students, application of short-answer questions, collective discipline procedures, and general praise . Conversely, during cooperative learning in small groups, teacher discourse could be categorized as encouraging student initiatives, helping students learn, encouraging communication among students, providing feedback on task performance, and praising the efforts of individual students. Based on their research, it can be concluded that teachers through cooperative learning have significantly changed the way they teach, and thus the way they communicate with students. For example, during the frontal form of working with the whole classroom, more than 90% of teaching included structured formal communication focused on the class as a whole, while during cooperative learning 75% of their discourse focused on various forms of informal communication that more personally and directly supported the efforts of each individual student during the learning process. Such results are particularly interesting since the same teachers taught both frontally and in cooperative groups.

Despite the advantages of cooperative learning, its application in practice is insufficient. Baines et al. (2003) report in their study that in teaching practice they often observed that teachers organize student work in small groups, but it is accomplished without adequate collaboration among students that is inherent in cooperative learning. Such work was largely done in a way that students worked independently, under the guidance of a teacher. Also, Abramczyk & Jurkowski (2020) in their study conclude that teachers, although well informed about the principles of cooperative learning and developed positive attitudes about its effectiveness, show scant knowledge of methods for implementing cooperative learning and rarely apply it in teaching practice. They also emphasize that teachers express the need for further learning about this teaching strategy and especially express interest in materials that can support them for its successful implementation.

Antil, Jenkins et al. (1998), find that during their research only a few teachers used forms of cooperative learning, although at the beginning of the research all teachers stated that they use it daily in teaching different subjects.

The reluctance to accept cooperative learning could be due in part to the challenge of maintaining control over the teaching process that such a form of learning poses to teachers (Kohn, 1992). This may also be due to a lack of understanding of how cooperative learning is applied and of shaping environments in which students feel supported and emotionally secure (Johnson & Johnson 1998; Sharan et al., 1999). Goodyear (2016) research shows how adequate forms of teacher support during their continuous professional development can significantly influence the development of success and pedagogical fluency in the implementation of cooperative learning than one-day forms

of professional development, while Johnson and Johnson (2017) emphasize the importance of operationalizing the theory of cooperative learning into clear procedures that teachers will be able to use in their educational work.

Blatchford et al. (2003) discuss the development of a socio-pedagogical approach to the implementation of group work. They believe that it is crucial for cooperative learning to provide an approach in which teachers structure group work experiences in such a way that students achieve the maximum benefit from interacting with each other. Galton et al. (1999) find that during the frontal form of teaching, teacher speech mostly dominates, which comes down to making statements and asking factual or closed-ended questions that require minimal student involvement. Students are rarely asked cognitively challenging questions in which they are asked to think about problems and argue their answers. In such classes, communication is often one-way, and students generally repeat information previously provided by the teacher.

Hertz-Lazarowitz and Shachar (1998) find that teachers who alternately apply frontal teaching and cooperative learning, during cooperative learning in which communication with students in small groups takes place, use more prosocial and positive speech and achieve more informal interactions with students than in frontal form of working with the whole class. Given this finding, it is particularly important to continue to explore teacher discourse during small group activities to determine not only how small group work affects teacher discourse, but also how teacher discourse can positively impact improving the quality of discussion among students within the group, their social judgment and construction of cognitions.

Johnson and Johnson (1998) find that many teachers group students during classes into groups for convenience, but do not apply key elements of cooperative learning. Moreover, it is found that groups in which there is no interdependence on goals and which do not work cooperatively have many features of traditional teaching (Turner et al. 2002). In such groups, there is no adequate motivation for group action, nor is there a common effectiveness in solving problems or performing tasks.

Gillies (2006) research seeks to determine whether teachers who conduct cooperative learning can be trained to apply specific communication skills that will facilitate the discourse of teachers and students during cooperative learning. Although many studies have been conducted showing how students can be trained for effective dialogue and promoting thinking and understanding during peer learning (Palincsar, 1999), research on how these skills are used by teachers during cooperative learning is less represented.

Hertz-Lazarowitz and Shachar (1990) compare the discourse of teachers and students during teaching led by teachers who have been trained to apply cooperative learning and the specific communication and teaching strategies of those teachers who have been trained only to apply cooperative learning.

Greater effects were found in the teaching of teachers who, in addition to co-operative learning, were also trained to apply specific communication strategies with students.

The results of a study conducted by Duran et al. (2019), based on the observation and analysis of teaching in which cooperative learning is applied, indicate a significant change in the traditional transmissible role of teachers in such teaching to moderate active student learning. This study points to the importance of developing competencies for the implementation of cooperative learning as an important part of the professional profile of teachers and the need to train future teachers for such action in their future work.

Important group of cooperative learning research useful to teachers focuses on mechanisms that explain why cooperative learning is effective. The findings of these studies show that all forms of assistance, especially providing quality explanations that provide sufficient guidance during learning, have the greatest impact on cooperative learning success and student independence in solving future problems of a similar type (Veenman et al. 2002; Webb, 2009; Webb et al., 2006). Explanations are more often given when students are in a structured group than when they work in unstructured groups (Gillies, 2006), ie. the exchange of explanations is more common in cooperative learning because it removes competitiveness and establishes norms of mutual sharing.

EDUCATION OF FUTURE TEACHERS FOR SUCCESSFUL AND QUALITY IMPLEMENTATION OF COOPERATIVE LEARNING

Teacher education programs are responsible for the adequate preparation of future teachers for all the challenges posed by the requirements of the teaching profession, including the organization and implementation of cooperative learning. One of the basic goals of the program of education of future teachers is the development of their competencies for the application of modern teaching strategies and methods in teaching practice. It has generally been found that teachers often attribute their level of competence to the organization of modern teaching to the intensity and quality of their professional preparation in teacher education (Bouas, 1996). This has resulted in reflection on the effectiveness of education programs for future teachers in the development of their competencies, but also more frequent organization of various in-service teacher training programs aimed at improving their competencies for the organization of modern teaching.

In order for students, future teachers, to acquire appropriate competencies for the organization and implementation of cooperative learning, they must form key knowledge about this teaching strategy, develop skills for its effective organization and implementation and have positive attitudes towards

its application. Although previous research has highlighted the importance of developing the competencies of future teachers to apply cooperative learning (Abrami et al. 2004; Gillies & Boyle, 2010; Veenman et al., 2002), only a few studies have addressed the problem of their training to implement such a way of learning. Völlinger and Supanc (2020) state that one of the goals of university education of future teachers should certainly be the development of adequate knowledge, positive attitudes and self-efficacy in the application of cooperative learning and inclusive education because it has promising effects in promoting social and academic development.

Ruys et al. (2012) emphasize the importance of reflective activities in the education of future teachers during lesson planning (anticipatory reflection), during the implementation of teaching (parallel reflection) and after the lesson (retrospective reflection). They especially emphasize the importance of anticipatory reflection in the professionalization of future teachers, during which it is considered how to organize cooperative learning taking into account its basic principles. The analysis of the quality of teacher training students determines the strengths of their methodological scenarios (design of appropriate tasks and development of adequate materials for cooperative learning) and certain weaknesses (omission of social learning outcomes and agreements for cooperative work).

The lack of adequately developed teacher competencies required for the successful organization and implementation of cooperative learning has proven to be a major obstacle to its more frequent implementation in everyday teaching practice (Gillies et al., 2008). An important factor influencing teachers' willingness to apply cooperative learning is their inability to form coherent cooperative learning groups in which positive interdependence and a sense of individual responsibility prevail. According to Johnson and Johnson (1998), groups can be formed in four ways - as pseudo-groups, traditional groups, cooperative groups, or high-performance groups. Pseudogroups are groups whose members are grouped together but have no interest in interactive collaboration. Such groups are not productive in achieving the desired results. Traditional groups are groups whose members agree to work in a group, but do not see much advantage in doing so. The result of the work of such a group is that some members profit, while others would be more successful in the individual form of work. In contrast, in a cooperatively structured group, members commit to maximizing their own and mutual success. Members have specific roles that allow them to share goals, productivity, but also responsibilities. The result of such a way of working is greater than the potential of each individual in the group. High-performance cooperative groups are those that fully meet all the criteria of cooperative learning and meet all expectations of such a way of learning.

Teacher education students begin their teacher education with learning and teaching experiences gained during their personal compulsory education

marked by a process of anticipatory socialization, meaning that the beliefs they then acquired may also affect their personal concept of learning and teaching. For example, if future teachers during their formal education have never or have had little experiential involvement in cooperative learning processes, this may affect their beliefs about the organization of the teaching process and the avoidance of such ways of learning in teaching practice. The general educational beliefs of future teachers, their beliefs about cooperative learning and their beliefs about their own learning processes can be distinguished.

General educational beliefs are developed so-called. observational learning during general compulsory education. Previous research has shown that teachers 'beliefs about teacher-centered or student-centered teaching have the greatest impact on teachers' teaching practice (Eley, 2006; Hermans et al., 2008). At the same time, positive beliefs about student-centered teaching are more favorable for the application of approaches that place emphasis on student cooperation.

It should be noted that at the beginning of their initial general education, students in teacher education already have formed certain concepts of cooperative learning, which may affect their willingness to use this teaching strategy in their future work. Teachers will conduct cooperative learning more frequently with their students if they have a positive opinion of cooperative learning (Veenman et al. 2002). Given that previous research has confirmed the positive attitude of most teachers towards cooperative learning (Gillies & Boyle, 2010; Veenman et al., 2002), despite the identified challenges in realizing such a way of learning (Gillies & Boyle, 2010; Veenman et al. , 2002), this can be considered a good basis for more frequent implementation of cooperative learning in everyday teaching.

Teacher education students also have developed certain conceptions about their own learning processes that they have shaped during their formal education. Vermunt and Van Rijswijk (1997) emphasize the importance of what the future teacher means by learning and what learning activities he considers possible and desirable. Accordingly, and based on research by Donche et al. (2003), it can be expected that teacher education students who attach less importance to cooperative learning for their own learning process will find this form of learning less valuable and for their students.

Ruys et al. (2014) emphasize the important role of the new generation of teachers in the process of implementing educational innovations and the importance of examining their motivation to implement cooperative learning, challenges and limitations and ways to address them, believing that such findings can provide useful information that will contribute to the improvement of the curriculum for the education of future teachers in terms of cooperative learning. The aim of their study was to identify the main challenges that students and beginning teachers face in implementing cooperative learning into

their teaching practice and how they position themselves in these challenges. In this context, they explored the experiences of teachers who have directly completed teacher training but are not yet employed in the school, and the experiences of novice teachers related to cooperative learning during their practical teaching, after their formal education in teacher education where cooperative learning is an integral part of future teacher education programs.

The results of their research show that students and beginning teachers who intend to conduct cooperative learning face several challenges. Because the risks of implementing new teaching strategies have cast doubt on the success of the application of cooperative learning, most have commited for tried and tested, traditional teaching strategies. This was sometimes supported by discouragement from the application of cooperative learning by teacher mentors, which reduced the sense of professional autonomy of teachers in choosing teaching strategies. Among other things, the fact that teaching in methodological exercises in teacher training is assessed and evaluated has led them to use tried and tested teaching methods.

Furthermore, insufficient knowledge of students' readiness to implement cooperative learning during teaching in an unknown classroom during methodical exercises in the study are frequent reasons for abandoning its application. Having only limited experience in the preparation and implementation of teaching, beginning teachers need more time to prepare teaching, which with a larger amount of administrative work can be a problem. The lack of ideas on how to shape cooperative learning and concrete proposals for its implementation in textbook materials creates additional time pressure for inexperienced teachers. Both students and beginning teachers point out that too little classroom space and class size affect their scope and experience of implementing cooperative learning. Working in a classroom with large differences in students'abilities also often leads novice teachers to doubt the possibility of successfully implementing cooperative learning.

Also, it was found that teachers 'previous experiences of cooperative learning and participation in cooperative learning during their formal education may be related to more frequent application of this way of learning in their teaching (Veenman et al., 2002). Based on such a finding, it can be concluded that teacher education students - future teachers need to be enabled to participate and have positive experiences in cooperative learning during their initial education in teacher education (Abrami et al., 2004). Identifying how the application of cooperative learning can improve peer relationships and reduce the incidence of school violence Van Ryzin and Roseth (2018) highlight training for implementing cooperative learning as an important component of future teacher education and continuing professional development of teachers.

Quality theoretical knowledge about the learning and teaching process is necessary for quality and effective organization of teaching (Verloop et al.,

2001). According to Shulman (1987), effective teaching requires knowledge of the native sciences of the subject and adequate methodological knowledge on how to transform knowledge of content into forms that are adapted to students (Shulman, 1987). Great emphasis is also placed on teachers' knowledge of teaching strategies and methods that enable and encourage more active student participation in the learning process (Hargreaves, 2003; Major & Palmer, 2006).

Teachers' methodological knowledge of cooperative learning is about what they need to know about this teaching strategy in order to be able to apply it successfully in practice. Lunenberg and Korthagen (2005) argue, however, that many teachers enter educational practice without an adequate conceptual understanding of contemporary teaching strategies, and thus cooperative learning strategies. As teachers have a central role in the implementation of cooperative learning, they need a good knowledge of its theoretical and empirical foundations and training for its practical implementation (Cohen et al., 2004; Gillies & Boyle, 2008; Hornby, 2009; Veenman et al., 2002). Teachers 'methodological knowledge of cooperative learning has so far been very little covered by research, and this research has drawn conclusions about the limited base of teachers' methodological knowledge of this teaching strategy (Hornby, 2009).

Jolliffe & Snaith (2017) examine the impact of providing cooperative learning support to teacher education students during their formal education. They find that more than 68% of teacher education students want more support for the application of cooperative learning learning in teaching practice. Among the main obstacles are the skepticism of teacher mentors towards the application of this teaching strategy and the lack of their support for its application in teaching which results in this teaching strategy not being applied (McAlister, 2012). Therefore, McAlister (2012) emphasizes the importance of experiential learning and competency modeling for the implementation of cooperative learning during the education of future teachers.

For cooperative learning to be successfully implemented in teaching, teachers should have insight into how to structure key components of cooperative learning (Gillies & Boyle, 2010; Gillies et al. 2008; Webb, 2009). A number of studies have examined the role of teachers in fostering the quality of student discussions and assisting during student group activities (Gillies & Boyle, 2010; Schmitz & Winskel, 2008; Webb, 2009) that are considered important for the implementation of this teaching strategy.

Despite the fact that teachers have a generally positive attitude towards cooperative learning (Abrami et al, 2004), research finds insufficient development of teacher competencies for its application (Baines et al, 2003; Gillies, 2006; Gillies & Boyle, 2010). Therefore, further consideration is needed on ways to develop adequate skills and abilities of future teachers in the field.In this regard, teachers' beliefs about their self-efficacy are an important predictor

of the application of cooperative learning in teaching practice. Feelings of self-efficacy are often associated with teachers' actual competencies and therefore affect their teaching organization, pedagogical behavior, and the effectiveness of their teaching (Knoblauch & Woolfolk Hoy, 2008). Previous research has shown that experiences of mastering certain teaching strategies and methods are an important source of self-efficacy of future teachers, for which experiences during methodological exercises in the teacher education program are crucial (Gurvitch & Metzler, 2009).

Research on the self-efficacy of future teachers regarding the application of cooperative learning also shows that they are generally self-assessed insufficiently prepared for its implementation in future teaching practice (Abrami et al., 2004; Veenman et al., 2002). Low or negative feelings of self-efficacy of future teachers may result in a lack of courage to put this teaching strategy into practice at all (Baines et al., 2003), while a higher sense of self-efficacy may result by more persistent effort in its application (Tschannen-Moran & Woolfolk Hoy, 2001).

Kocabas and Erbil (2017) develop a scale for assessing teacher competencies for successful implementation of cooperative learning, taking into account their cognitive foundations, information levels and implementation processes, and suggest its application in the process of formation of future teachers, ie during their formal education perfected those competencies that prove insufficiently developed by applying the scale.

The scientific and professional literature very often emphasizes the discrepancy that exists between educational theory and practice (Loughran & Berry, 2005), which can have negative implications for the work of beginning teachers. Beginner teachers are often aware of the benefits of cooperative learning and the learning outcomes achieved by this teaching strategy, but at the beginning of their school life they experience the shock of transition arising from the gap between imaginary ideal teaching practice situations they read about in scientific and professional literature. study and actual teaching practice in which unforeseen situations often arise that the teacher must be able to deal with (Korthagen et al., 2006). Such a shock can lead to recourse to the traditional teaching paradigm without the application of modern teaching strategies and methods such as cooperative learning, despite the efforts of formal education of future teachers in the field. Therefore, various professional development programs are often organized for teachers aimed at strengthening their competencies, and thus self-confidence for the implementation of this teaching strategy. Such programs have been found to encourage positive teacher thinking and their intentions to apply cooperative learning in their daily teaching practice (Veenman et al., 2002).

Buchs et al. (2017) report that teachers particularly emphasize the problem of incorporating cooperative learning into the curriculum, finding the time

needed to implement it, and evaluating student work during cooperative learning. In this regard, they suggest that the initial education of future teachers should include the training of future teachers to overcome these difficulties.

Kimmelmann and Lang (2019) describe the importance of trying to link future teacher education programs with in-service training and lifelong teacher education for school employees. They conclude that the cooperative of teachers and students of teacher education in joint training programs through the exchange of their experiences and opinions can contribute to the quality of their teaching.

CONCLUSION

The effectiveness of cooperative learning largely depends on the methodological culture and competencies of teachers (Gillies & Boyle, 2010). Therefore, training future teachers to apply cooperative learning is crucial for its successful implementation in teaching practice (Lunenberg & Korthagen, 2005). According to Murray and Male (2005), the process of introducing cooperative learning into the education of future teachers should be at two different levels – the implementation of cooperative learning in teaching in teacher education and the formation of appropriate knowledge and skills of future teachers on how to apply cooperative learning in teaching practice. Such thinking can have a significant impact on the design of teaching that is conducted in teacher education.

Research on the methodical competencies of teachers in cooperative learning (Gillies, 2004) and on cooperative learning in the context of future teacher education is still underrepresented (Darling-Hammond & Hammersford, 2005). Baines et al. (2003) argue that teachers are often reluctant to implement cooperative learning due to a lack of competencies and an insufficient understanding of this teaching strategy. It follows that the development of adequate knowledge, skills and abilities and positive beliefs of future teachers in teacher education is crucial for the implementation of cooperative learning. However, Hoban (2005) points out that teacher behavior in the classroom is also influenced by contextual factors such as classroom atmosphere, curriculum, subject characteristics, etc. so these components need to be considered when promoting more frequent application of cooperative learning in teaching practice. Consequently, a challenge is created for future teacher education programs, which should include the development and strengthening of students' understanding and competencies for the organization and application of cooperative learning at the level of pedagogical and methodological courses (Cohen et al., 2004; Veenman et al., 2002.)

Most cooperative learning research to date has placed emphasis on analyzing the effectiveness of this teaching strategy in supporting student learning processes and their educational achievements. Studies that have addressed the

role of teachers in the implementation of cooperative learning have largely addressed their beliefs about this teaching strategy and the intentions of its use in teaching practice at the qualitative level. However, so far little is known about the actual competencies of teacher education students - future teachers for the successful implementation of this teaching strategy, as well as whether teacher studies adequately support the development of these competencies in their students. Studies of explicit training programs for future teachers to apply cooperative learning are generally rare (Veenman et al., 2002) and, because of all of the above, their implementation should be considered more intensively. Since a review of the available literature on the phenomenon of cooperative learning has shown that novice teachers often lose confidence in implementing modern teaching strategies at the beginning of their professional activities, it would be important to explore the motivation of trainee teachers to apply cooperative learning after graduation, according to similar research. which dealt with the experiences of teachers with multiple years of service (Gillies & Boyle, 2010).

A meaningful analysis of the relevant literature shows that beginning teachers and students of teacher education encounter certain challenges in the implementation of cooperative learning, such as the problem of incorporating cooperative learning into the curriculum, finding the time needed for its implementation and evaluating student work during cooperative learning. Therefore, the basic recommendation arising from the results of this analysis is to include in the initial education of future teachers their training to overcome these difficulties. In order to achieve this, it is necessary to organize experiential learning during which students - future teachers, will be actively involved in cooperative learning activities and try to implement it in exercises within methodological courses.

Experiential learning will result in adequate modeling and strengthening of their competencies for the implementation of cooperative learning. It is necessary to emphasize the importance of implementing anticipatory, parallel and retrospective reflection that will provide a deeper understanding of the application of the basic principles of collaborative learning in teaching practice. Furthermore, the content analysis showed the need to establish greater support for students, beginning teachers and teachers with experience in implementing collaborative learning. Such support refers primarily to the assistance and incentives of institutions dealing with the education of future teachers, especially leaders of methodological exercises, as well as the support of teacher mentors in training schools, as it was found that their skepticism towards the application of this teaching strategy often results in lack of support application in teaching. Support should also include institutions dealing with the professional development of teachers, which could offer the strengthening of teacher competencies in this area by offering adequate professional development programs.

In order to timely identify possible weaknesses in the development of competencies of future teachers for the implementation of cooperative learning and their rapid elimination, it is recommended during the process of formation in teacher education to conduct surveys to assess the development of such competencies and students' interest in successful cooperative learning. Also, linking future teacher education programs with in-service training and lifelong teacher education would enable future teacher students to exchange experiences and ideas with experienced teachers that can contribute to their professional formation and more effective implementation of new teaching strategies.

Based on all the above, it can be concluded that further research on the competencies and development of competencies of student teachers for the application of cooperative learning and examining the impact of explicit training programs in this regard is necessary, because the results of such research could make a significant contribution to the organization of contemporary teaching which will result with quality educational learning outcomes.

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