Article

A Study of Language and Cognitive Aspects in Primary School Pupils' and Teachers' Activities Through Cooperative Learning

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Abstract

This research study examined the reflections of primary school pupils and teachers on the meaning and benefits of the cooperative learning method. The aim of the study was to explore the reflection of pupils and teachers on cooperative learning from a linguistic and cognitive point of view. The investigation was carried out in one of the major primary schools in Vilnius and involved 24 primary school children and 8 teachers. The responses to the questionnaire responses and interview questions in this mixed methods research study provided a first-hand look at why children find it important to communicate and cooperate on a variety of things. The conceptual theoretical framework of reflection and cooperative learning described in the study underpins practice by scientific evidence and is crucial for making decisions about the organization of the educational process. The empirical data were analyzed using explorative quantitative and a qualitative content analysis strategy. Primary school pupils identified the following aspects of language: asking for and giving help, asking questions to clarify content, and talking as a way of helping to learn. In terms of cognitive content, cooperative learning was perceived by pupils as helping them to find the information they need quickly and efficiently, to analyze it together. Cooperative learning was more challenging when there are many pupils with different needs in the classroom.

Keywords

Reflection, cooperative learning, language abilities, cognitive abilities, primary school pupils, teachers.

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Past studies (Blons-Pierre, 2016; Goddard et al., 2007; Gohard-Radenkovic, 2017; Gohard-Radenkovic & Veillette, 2015; Harvey et al., 2020; Veldman et al., 2020; Vescio et al., 2008) have identified deep reflection abilities as essential pedagogical competences, on the basis of which the competence of students' reflection can be developed. This suggests that constant thinking before, during and after the activity facilitates the achievement of quality result. The teacher's ability to apply necessary learning strategies and provide support to pupils at the right time and right pace enable quality results to be achieved. Educational didactics provides for actions and solutions that include methodology, curriculum, goals of activities, and specific tasks when developing a teaching / learning process for students in any field. The goal of an advanced educator should therefore be daily educational practice permeated with a rethinking approach based on theoretical foundations and methodological-strategic choices for a learner during the learning process.

During reflection, each child should reflect not only on what they already know, but also on how they know that they know it. Students' metacognitive abilities would help the teachers select or design didactic tools for the teaching and learning process, considering the cognitive, emotional, and social aspects (Sawyer, 2012; Sharan, 2010; Stalder, 2019; Vinatier, 2009; Vinatier & Le Marec, 2018). Quality education is dominated by didactic ways of organizing activities and responding to them, based on metacognition, which helps to optimize children's learning. Reflection is supported by cognition, which includes reasoning and procedural knowledge; problem solving; thinking about the strategies chosen and applied in the learning process.

Cooperative Learning Approach

Sociocultural theory focuses on group and cooperative processes The study used a cooperative learning approach where pupils studied in small, teacher-formed groups. The element of learning in a group is very important as it is created from consistent contribution of individual members seeking an overall outcome (Sawyer, 2012). Cooperative learning is defined by the following five features of successful cooperation in a group, where children work with one another to help, advise, and discuss matters of mutual interest (Buchs, 2017; Buchs et al., 2021; Buchs et al., 2017; Buchs et al., 2011; Buchs et al., 2018; Gillies, 2004, 2016, 2020; Gillies & Ashman, 1998, 2003; Gillies & Boyle, 2010; Johnson & Johnson, 1990, 2008, 2017; Jolliffe, 2015). First, *Positive mutual interdependence* within groups is recorded when students understand that they are all responsible for the task, that everyone contributes to a common goal and must therefore be able to combine their efforts, and to be able to reach an agreement. Second, *Promotive interaction* is the desire to help each other and to facilitate completion of the task. Activities such as listening, consulting, interpreting, discussing, as well as sharing tools and resources for the task are important here. This area highlights the importance of language skills, the ability to listen and use language tools, such as appropriate words and phrases in support and encouragement of work, and concepts related to the content of the study subject.

Third, *individual and group accountability* is closely linked to interdependence. It is recorded when each member of the group is willing to do their part of the job, creating preconditions for others to do their part. After the activity, it is important to evaluate not only the result of the work, but also the individual contribution and the learned content of all activities. It is important that children can also evaluate how they understood and learned the content that other members of the group were responsible for. Fourth, s*ocial skills* are linked to the culture of communication, polite and responsible behavior which includes listening and commenting on the ideas of others, expressing opinions, making decisions, and the ability to share tools, roles, and activities. Finally, the g*roup reflection* occurs when group members reflect and can answer questions, such as "what have we done, what else should we do, how can we do it?"

A description of a few activities of teacher and students in the context of cooperative learning is provided in Table 1:

Table 1. *Teacher's and students' activities according to the criteria of cooperative learning*

Criteria of cooperative learning	Teacher	Students
Positive mutual interdependence	• Ensuring that pupils are not able to perform tasks independently of each other.	• Working together to achieve learning goals.
Individual responsibility	• Evaluating each aspect personally. Ensuring that the task is not split into separate parts.	• Everyone is involved in different parts or stages of the activity. The participation, its frequency, duration, intensity, and relevance of each pupil may vary.
Direct and simultaneous indirect interactions	• Organizing the space (properly arranging chairs, tables, preparing the classroom). • Determining the size, composition, and role of each group.	• Interacting, consulting, exchanging information and opinions within a group or with other groups at the same time.
Cooperation competencies	• Explaining what competences will be developed, how they are related (especially in early learning), assessing skills. • Defining learning goals/objectives and social inclusion goals. • Explaining the task, providing the necessary assistance and tools. • Allowing for trying out the activities.	• Developing cooperation abilities. • Developing learning and social abilities at the same time in an integrated way.
Evaluation of the group's cooperative learning activities	• The teacher is either in charge of the assessment process or not.	• Assessing activities from two points of view: - learning objectives (cognitive aspect), - social abilities.
Elements of the cooperative learning structure (in whole or in part)	• There is no need to explain to pupils why a particular activity structure has been chosen (the teacher explains this only during the activity (reflecting on pupils' experience).	• Working in teams or groups where everyone pursues a common goal, a common class culture. • Deepening knowledge and developing thinking skills, communication and cooperation skills, and language skills. • Sharing knowledge, experience, and responsibilities.

The groups organizing the activity criteria set out in Table 1, in the case of cooperative learning, included children with different abilities, distributed by teachers according to the level of their competence. These pupils with different abilities were also allotted tasks and responsibilities so that they should not act on their own. A few of them were also assigned the task to supervise the activities of other members of the group and aid.

Cooperative learning as a practice for developing communication skills

Past researchers have investigated the positive effects of cooperative learning practices as a means of developing pupils' communicative language skills (Bitinas et al., 2008; Blons-Pierre, 2016; Bruzgelevičienė, 2014; Bukunola & Idowu, 2012; Ghorbani & Nezamoshari'e, 2012; Gohard-Radenkovic & Veillette, 2015; Gull & Shehzad, 2015; Mahamod & Somasundram, 2017; Marx, 2012). When a cooperative learning approach is

used, the educational process not only benefits academic achievement, but also has a positive impact on pupils' social relationships on attitudes towards learning and interest in learning (Miller, 2017). In addition, pupils also reported that cooperative learning improved their skills in analyzing the learning material. Pupils also reported feeling more confident and comfortable in discussions because they were not afraid of making mistakes. In addition, the findings of the study also suggested that they were able to express their opinions freely (Mahamod & Somasundram, 2017; Marx, 2012). Researchers also confirmed that pupils understood learning material faster and better when their peers in the group explained. Learning through peers is also a very important prerequisite for language learning.

The role of the teacher is important for the smooth running of cooperative learning, as it is up to the teacher to determine how pupils are grouped, encouraged to confer, share information, and help each other (Mahamod & Somasundram, 2017; Marx, 2012; Sawyer, 2012; Sharan, 2010; Stalder, 2019). For the approach to be meaningful it should be negotiated within the teacher community and the activities should be well planned. It is also important for teachers to choose activities that develop both pupils' subject understanding (cognitive knowledge) and critical thinking. For a smooth educational process, it is important to reflect on ways to stimulate pupils' motivation to work together and ways to provide feedback (Guha et al., 2018; Gull & Shehzad, 2015; Saborit et al., 2016).

The role of cooperative learning in the development of language skills of primary school pupils in the Lithuanian context

Primary school pupils are encouraged to develop their linguistic abilities by learning with others. All this creates preconditions for the development of a relationship with the tradition of one's own culture based on dialogue, responsibility, and creativity. By examining, interpreting, evaluating, and creating their own texts of various kinds, pupils develop critical thinking skills. They analyze and evaluate the validity of the views expressed in different sources and learn to debate in a reasoned way. Language classes are constantly developing a culture of debate: listening to others, respecting their opinions, defending one's own point of view without compromising the dignity of others or oneself, and taking responsibility for the truth and accuracy of one's own statements (According to the *Framework Programme for Primary Lithuanian Education*, In Lithuania, the content of education is developed in accordance with the main document regulating the content of education the *Framework Programme for Primary Education of the Lithuanian Language* but there is a lack of research based on modern didactics and language education theory (Forlot, 2010; Freebody, 2003). For this reason, the language and cognitive domain has been chosen as the focus of the cooperative learning methodology, considering the Lithuanian educational context.

The main aim of the study was to explore the reflection of pupils and teachers on cooperative learning from a linguistic and cognitive point of view. The specific objectives of the study were however to identify what pupils appreciate, how and why, from a linguistic and cognitive point of view when they have studied in cooperation; and secondly, to identify the pedagogues' views on the application of the method of cooperative learning.

Methods

Sample

The sample comprised 8 primary school teachers from one primary school in Vilnius, taking two teachers each from Grade I to Grade Four. All teachers were females and taught pupils in grades 1 to 4 (aged 6 to 11). The selection criterion was that all these teachers had participated in a cooperative learning project where they had learnt how to cooperate in teaching a lesson. In other words, they were trained how to plan lesson activities together by discussing and developing very similar content in the same subject in parallel classes so that children

could learn cooperatively. So this group was an ideal sample for this study as the group teachers had received professional training in the area of cooperative learning or were at least aware of learning about the concept of cooperative learning the group members were also familiar with the principles of grouping pupils and the distribution of tasks and responsibilities in cooperative learning (Buchs, 2017; Buchs et al., 2021; Ghorbani & Nezamoshari'e, 2012; Gillies, 2016; Johnson & Johnson, 2017; Jolliffe, 2015). During the experiment, the activities were applied at least once a week for four months in the school. Teachers were also asked to plan and analyze their cooperative learning activities according to the criteria presented in Table 1. It was reiterated that teachers who were willing to participate in this research should be willing to learn on their own and to consult with each other. The data of the participants in the study, according to their teaching experience and qualifications, are presented in Table 2:

Table 2. *Characteristics of the participants (N=8)*

Participant Teacher	Length of service (in years)	Qualification category	subject where learning is cooperative
1A	30	Methodist Teacher	Mathematics
1B	30	Senior Teacher	Mathematics
2A	29	Methodist Teacher	Integrated Natural science and Maths
2B	23	Senior Teacher	Integrated Natural science and Maths
3A	13	Senior Teacher	Integrated Geography and Lithuanian language
3B	30	Methodist teacher	Integrated Geography and Lithuanian language
4A	39	Teacher Expert	Integrated History and Lithuanian language
4B	44	Senior Teacher	Integrated History and Lithuanian language

All the primary school teachers possessed a university degree. Their seniority and qualification category showed that they were experienced professionals. In terms of qualifications, 4 teachers were Senior Teachers, 3 were Methodist Teachers and 1 was a Teacher Expert.

In Lithuania, there are four qualification categories for teachers – Teacher, Senior Teacher, Methodist Teacher and Teacher Expert (*Teacher Attestation Regulations*, 2007). A position or category in Lithuania is determined by teaching qualifications and experience of the teacher. For instance, the position of a Senior Teacher is designated to a teacher who has completed higher education and has at least four years' teaching experience. Besides, the subject teaching qualification, s/he is also expected to organize and analyses the teaching and learning processes, keep his/her knowledge up to date, participate actively in methodological activities, and disseminate best practice in the school. The position of a Methodist Teacher is awarded to a teacher who not only possesses all the competences of a Senior Teacher, but also develops and initiates educational projects and shares experiences not only within the school but also in the region. Likewise, a Teacher Expert is an individual who can share a wide amount of knowledge and experience with educators across the country.

In addition, three pupils were also interviewed in each class, whose teachers were participating in the study, which made a total of 24 pupils. The interview data was arranged and analyzed according to the pupils' parallel classes as both classes were jointly planned by the teachers with the same content implemented (Acar & Kayaoglu, 2020).

Instruments and procedure

After the completion of cooperative learning activities, teachers and pupils participated in *semi-structured* interviews individually. The interviews were scheduled immediately after each lesson. Each interview with students and teacher was filmed and each informant was asked the same questions: *How do they feel post-learning cooperative activities? What was the most successful experience in cooperative learning? What would they want to do differently next time?* (Forlot, 2010; Freebody, 2003; Hinson, 2015; Johnson & Johnson, 1990,

2008) The first question aimed at clarifying pupils' attitudes when working in collaborative groups. The purpose of the second question was to find out what informants viewed as added value in working group (whether they approached cooperative learning in a communicative or in a cognitive way). The third question revealed how and why pupils would like to improve their activities and showed the prospect of deeper learning. Each question aimed at eliciting the strengths of cooperative learning activities in terms of cognitive and language abilities and the weaknesses of the activities (Gillies, 2016, 2020; Gillies & Ashman, 1998, 2003) where both teachers and pupils could indicate the difficulties they experienced. This information was crucial for explaining the added value to the approach in terms of pupils' academic knowledge and language development skills.

The choice of a semi-structured interview was determined by the immediacy and flexibility of this method, the possibility to collect data from a small group of respondents, to use broader research questions and to reveal the social reality of the respondents. Acar and Kayaoglu (2020); Kardelis (2005); Kliukienė (2008) opined that free formulation of questions during a semi-structured interview allows to learn about various aspects of the phenomenon, and to analyze the phenomenon in a more detailed manner. It was noted that although the interview was semi-structured because it used pre-determined research guidelines – as well as broader questions predetermined by the objectives of the study – respondents were nevertheless free to formulate definitions, concepts and meanings, and provided a distinctive view on the subject in question.

Data Analysis

The empirical data were analyzed using a qualitative content analysis strategy. The research design was constructed on the methodological basis of qualitative research theorists (Bicen et al., 2020; Blons-Pierre, 2016; Panko, 2020; Van Garderen et al., 2012; Veldman et al., 2020; Vescio et al., 2008; Vinatier, 2009; Vinatier & Le Marec, 2018) data analysis was based on *insights*, the process was *interpretative*, based on *expert knowledge*, *experience* and *intuition* of the researcher. Comparison was chosen as the main data analysis strategy: it involved continuous comparisons between the expressions of *units of meaning* of cooperative learning in language and cognitive aspects, i.e., the views of other researchers on the subject, these approaches were related to the problem of the study, and an attempt was made to understand and present *links between different* (often alternative) *units of meaning*. The study analyzed the reflections of pupils' activities which were collected during interviews immediately after lessons in terms what children distinguished as the value of group work when learning through cooperation, and what communicative linguistic aspects they distinguish. In addition, pupils' responses were also analyzed based on the distinctive parameters of cognitive activity, i.e., what children singled out at the level of knowledge.

The study was conducted in April and May 2019. Written consents to participate in the study were obtained from parents of all pupils. The study was carried out as part of the Erasmus+ strategic partnerships project *Inclusive Cooperation in the Education System (DICO+)* The context of cooperative learning and the attitudes of primary school pupils was studied in France, the Netherlands, Italy, Spain, Hungary, Romania, Lithuania; however, the data contained in the study resulted out of the Lithuanian investigation. Coding and transcoding were carried out to retrieve themes or categories representing from the interview data (Abdulai, 2020; Cañabate Ortiz et al., 2021; Ghorbani & Nezamoshari'e, 2012; Gillies, 2016; Metcalfe et al.). The categories were however identified keeping in view the thoughts expressed by pupils and teachers in relation to language and cognitive performance in cooperative learning.

Results

The interview data was analyzed based on how much children distinguished the aspect of cooperative learning associated with language abilities when reflecting on activities in the lesson. The same lesson was organized in each class as in the parallel one (lessons of the same content were held in the classes of the first

grade, as well as lessons of the same content in the classes of the second, third and fourth grades). There were mathematics lessons in the first and second grades and world study lessons in the third and fourth grades. Language education had also been mainstreamed in all lessons. This context was important because of the cognitive areas highlighted by students during interviews. The focus in the interviews was on asking for and giving help, possibility of adequately assessing one's own cognitive knowledge, and opinions of pupils in the Class. Having analyzed children's interview data, certain communication aspects were observed which pupils could feel when they collaborated to work together in a group.

Cooperative learning: opinion of pupils in Class 1.

Table 3 presents the linguistic aspects expressed by children in class 1. The letter B refers to the opinions of boys and M refers to girls. The interview data of first grade pupils suggest that during their early years (6-7 years), these children were able to reflect on their experience, could pinpoint aspects of cooperative learning, and highlight the exceptional value of this type of work in terms of providing and applying for assistance. In addition, class 1B pupils were also able to identify an explanation from a classmate about how to perform the task as assistance.

Table 3. *Experiences linked to language and cognitive content communication during cooperative learning in the first graders working group*

Category	Pupil's opinions	Researcher's comment
	11/04/2019, class 1A (N=3)	There is a lot of focus on learning through cooperation
Asking for and giving help	B1 *I asked for help and I got it.*	and providing assistance, as all pupils talk about
	M2 *I was also helped by Domas and*	providing and asking for help. In addition, children
	Liepa. Domas decided to help	know how to both self-evaluate and verify that they
	himself, and for July, I asked her	have calculated correctly. In addition, they give a very
	help. <…>	clear account of how this happened.
Checking work (possibility of adequate evaluation)		The completeness of the story also shows a higher level of language.
	M2 *because we passed around our*	
	work to each other and checked each	
	other's work. Besides, Liepa also	
	went to the checking station to check	
	if she had calculated correctly, and	
	she brought the correct answers.	
	08/05/2019, class 1B (N=3)	It is important that pupils emphasize on assistance
Asking for and giving help	M1 *The most interesting thing was*	when talking about aspects of working in a group
	working in a group because I enjoy	through cooperative learning. Furthermore, they refer
	helping others and working like that.	very specifically to assistance as the ability to explain.
	M2 *That I can help others and they*	This ability is essential for learning, and by explaining
	can help me.	things to their classmates, the children not only help
	B1 *It did well, I received help. Greta*	their classmates, but also deepen their own knowledge.
	helped me to count. She explained it	
	to me.	

The findings of this study are like other studies (Mahamod & Somasundram, 2017) that highlight the importance of friends' explanations in learning. In this case, children not only learnt cognitive content, but also enriched their vocabulary and were able to choose the right words for a given situation. This is very important in the educational process, as the vocabulary skills of first graders were very different. A too narrow vocabulary can

also lead to a lack of understanding of subject content. Some children are not able to utter a coherent sentence, while others already have a varied vocabulary. Vocabulary was therefore linked with reading fluency and comprehension of text content. For a child to understand the meaning, their vocabulary should be rich. The importance of vocabulary was thus associated with quality of life and academic achievement

When interviewing the pupils' teachers, it became clear how such deep learning through cooperation was achieved. The teacher of class 1A linked the provision of assistance to pupils' faster pace of work, which she stressed during the interview: *That's what I taught them, i.e., if you've already done it, and something is obstructing someone, then ask if they need help, try to help them. We did learn how to work like that. The girls told the truth when they said that we had been learning to work like that when pupils give a hand to each other for about two weeks almost every day during at least one or two lessons.* The teacher of class 1B, as if agreeing with her colleague, stressed the consistency of learning to apply this approach: *we started practicing this method from the very first seminar and the children knew and learnt how to provide help and how to ask for it. They learnt how to explain things to others. <…> Everyone helped each other, made sure no one had missed taking turns. If someone experienced difficulties, they helped each other immediately, they explained.* The teacher's interview highlighted important elements of cooperative learning, such as thinking about the task so that each child was involved in joint activities and learning how to provide assistance (Bassey, 2020; Gillies, 2004, 2016, 2020; Gillies & Ashman, 1998, 2003; Gillies & Boyle, 2010). As children were first-grade pupils, the ability to work together in a classroom as a community was still being developed, yet it was a very good time to learn and collaborate.

During the interview, the teacher of class 1A also expressed the difficulties of learning how to work in this way: *Learning how to work in a group was challenging, only two girls from the classroom saw everyone around them from the beginning, and others were kind of indifferent. Besides, there were some who didn't want contact with their classmates. It's necessary to teach it, they learned to ask questions to each other, to help each other. <…> That's how children learned to take care of each other after being prompted. In addition, I also took advantage of the recommendation and narrowed the space so that space would encourage them to collaborate and work in the group as a team.* An example made by a teacher was very important; it showed that as long as you did not have the skills, you could only sit next to a friend and simply observe what your friend was doing and could not offer any help. A good solution suggested by the educator was to raise questions (Guha, Wagner, Darling-Hammond, (Saborit et al., 2016; Wimberley, 2011) and identify a problematic situation which helped to create a connection between the learner and the environment (Marx, 2012; Miller, 2017) The fact that primary school students found it difficult to formulate questions and needed to be taught to do so was supported by a study (Dos et al., 2016) The study recommends that not only children but also teachers should be taught to formulate questions. In addition, attention was also paid to the physical space, to proper arrangement of classroom desks. A suggestion was given to reduce the number of desks to make it convenient for children to work in a group. Last, but not the least, both first grade teachers stressed the communicative aspect of language, i.e. asking for and providing help when learning how to explain to others. There was also a social act of learning in a friendly, non-angry way, noticing everyone, helping, and advising them. These aspects are very close to the findings of other empirical studies (Bayshulakova & Dubovtsev, 2020; Bitinas et al., 2008; Bukunola & Idowu, 2012; Gohard-Radenkovic, 2017; Gohard-Radenkovic & Veillette, 2015; Gull & Shehzad, 2015).

Cooperative learning: opinion of pupils in Class 2

The general opinion of Class 2 teachers was to stay focused on work and assess the language and cognitive aspects expressed by pupils in reflection on their experience in cooperative learning. The findings are illustrated in Table 4. By analyzing the reflection of second grade students (7-8 years old) in Table 4, it is felt that children found it harder to learn in cooperation because there was still a lack of understanding, failing to listen to each other and understand their abilities. This may could be because children had worked in groups

before, but in competition and not in cooperation. This conclusion relates to the responses given by class 2B students, who said that next time they would talk more and be friendlier, and they would listen to each other. It is noteworthy that the children were positive about the content, reflecting on how they managed to draw the diagram and what they learned about birds.

Table 4. *Experiences linked to language and cognitive content during cooperative learning in the second graders working group*

Category	Pupils' opinion	Researcher's comment
Finding information	10/04/2019 class 2A (N=3) M1 *I was very good at finding information and telling Elijus who eats what.*	When pupils talk about what has worked well in the lesson, they emphasize cognitive aspects: e.g., finding information about birds. The linguistic ability was identified as to be improved because children struggled to distribute responsibilities and everyone spoke too much, so they didn't hear each other. Although they swapped the roles, they could not provide arguments for this action.
Focus on work as an aspiration	M1 *Just focus more and talk one by one, because when we're all talking together, we can't hear anything.*	
Sharing tools	M1 Dovydas didn't have a pencil, for example, so *I lent him one.* B1 *I gave him glue (pointing to another boy), and I gave Elzė a pencil sharpener.*	The children could be used as the aid for a physical delivery of some item but not as communication content.
Positive attitude towards content	08/05/2019, class 2B (N=3) M1 *I feel good because I've enjoyed those tasks and I like working together. I'm surrounded by my friends, and I'm in a better mood.* B1 *Good, because I liked drawing a chart.*	
Relationship conflict	B2 *Bad, because when I wanted to help the girls, because I was an assistant, whenever I said anything, they immediately said they would report it to the teacher. My friends didn't accept my help. So then I was being naughty and I didn't help them with anything.*	The girl very much stressed the positive emotion of cooperative learning, but the group was unable to reach an agreement and the boy, although he had to help, remained distanced, out of work, only watching others work. It is important that during the reflection, as they reflect on what should be changed next time during the activity, children acknowledged that they were wrong and that they were willing to behave differently, for example, to share responsibilities, to talk more and agree without anger.
Sharing work and tools	M1 *Friendship was most memorable to me, and that we drew the diagram together and shared work. We distributed work so that one was writing and the other two were reading. I drew the diagram; Karolina wrote it all.* B1 *I remember to have to work in a friendly way. I asked for a ruler, but my friend didn't give it to me.*	
Relationships based on conversation as an aspiration	M2 *Next time I would argue less with others. We could be friendlier.* M1 *Next time we can talk more, say that we can't behave that way!*	

This meant that this kind of learning motivated the pupils to act. These findings are consistent with the insights of other studies (Johnson, Johnson 1990, 1999, 2003, 2008), which suggested that cooperative learning increased motivation and helped to master the content, however, the development of linguistic skills and the ability to agree remained a future prospect, and the pupils identified this as an area they wanted to improve. The lack of cooperative skills was also highlighted by Sharan (2010); Vescio et al. (2008); Vinatier (2009); Vinatier and Le Marec (2018); Wimberley (2011); Želvys et al. (2019). It was also felt that this was a factor hindering the increased use of cooperative learning in educational practice.

While discussing the advantages of working, the teacher of class 2A highlighted the aspect of the classroom's interest in activities: *I was able to surprise the children and get them focused on their work, because they received an introductory task about the charts, where they had to assign the words in terms of what the right word was for what item and they understood the task perfectly, <...> everyone did the task very well, joined in and helped each other. There are many of us, maybe that's why it's complicated* [comment from the author of the article: there are 29 students in the class and 27 students were present in the lesson], *but children like to work in groups, they liked it and they learn a lot this way.*

The role of the teacher and classroom management is one of the most important aspects for the smooth running of cooperative learning. The inclusion of a small group is important for learning activities (Sharan, 2010) and the teacher has to reflect on many aspects when dealing with a large classroom. It was observed during the study that if there were many small groups in a classroom, it would become even more difficult to manage the process. If the children did not feel interdependent, it would be much more difficult to perform the tasks well. Reflecting on educational experience, the teacher of class 2B first emphasized the cognitive aspect of the content of the lesson, as she mentioned that pupils rarely drew charts: *We drew the strip chart for the first time, but this challenge was successful. We work in groups.*

When it came to working in groups where children learnt in cooperation, the teacher mentioned a problematic aspect that children sometimes argued with each other and that mutual assistance abilities were rarely noticed. When asked by the researcher if she would consider a request made by the boy to work with other children in the team, the teacher replied that: *I'm going to try to talk to him. And I'll talk to the girls too. There are 27 students in the classroom. We're going to have to think about which boy could be invited to the team to join them. I think the girls got into an argument about their roles, they were competing.* In summing up the activities of the lesson, the teacher herself mentioned that the children in the group were competing rather than cooperating. In another type of group work, when children compete and "fight" for their position, cooperation is much less successful because they are unable to listen and to help each other to agree. In this context, it is also much more complicated to develop communication abilities, or never used at all because they wanted to be the leaders and not a team to achieve common goals.

The findings revealed that quality cooperative learning required an emphasis on the readiness of the pupils and the composition of the group. These findings are consistent with Gillies (2016) which also emphasized that it was up to the pupils in the group to be willing to talk and work towards a common goal, and for teachers to acknowledge that children can often work in friendship. It is important for children to understand interdependence and care for each other (Miller, 2017).

Cooperative learning: opinion of pupils in Class 3.

The opinion of Class 3 students focused on understanding cognitive content and having a conversation as a group of friends. Table 5 shows how third grade students were able to reflect on the experience of cooperative learning.

Summing up the experience of third grade pupils in a working group in the context of cooperative learning, some children saw the merits of this method, because they emphasized conversation as a support, but

other pupils mentioned cognitive content when they talked about the activities of the lesson, thought about what they had learned, but did not outline how they did it, i.e., aspects of cooperative learning remained unmentioned. The academic content and its context in cooperative learning have been highlighted in previous studies (Hinson, 2015). This study observed that any conversation or discussion suggesting pupils in agreement indicated the success of cooperative learning. It was felt that it was easier for children to develop such skills when they had a positive attitude, with high academic as well as metacognitive skills (Jolliffe, 2015).

Table 5. *Experiences linked to language and cognitive content during cooperative learning in the third graders working group*

Category	Pupils' opinion	Researcher's comment
Understanding cognitive content	11/04/2019, class 3A (N=3) M1 *It's interesting because we learned a lot, we remembered a lot.* B1 *We found out what Lithuania's neighbors are.* M2 *We gained knowledge.* M1 *Great, because we remembered a lot.* B1 *It was great for me, too, and I colored two flags and another one of the neighbor of Lithuania, that is Latvia.* M2 *I wrote kindred words for the capitals. I also colored Russia and its flag.*	When children talked about the lesson, they mentioned cognitive content: Lithuania's neighboring countries, keywords created for the word "capital". Two of the girls mentioned that the children had consulted in the team as part of the task. Also, the boy said that the classroom rarely works in groups, and that is why they're not skilled to consult with each other, it is just that they tend to work individually, and when analyzing the activities of the lesson, children mention the content because they haven't mastered the work in a group and cooperative learning enough to associate the activities with cooperative learning and analyze them in that respect.
Conversation as support	M1 *It was easy because my team helped me, and we consulted.* <…? M2 *One of the girls, Amelija, helped me, and we had a little consultation.*	
Conversation as support	09/05/2019, class 3B (N=3) M1 *I liked the fact that we worked in groups because then you can consult with all of the friends from the group.* B2 *Maybe we should have consulted more and looked at the example in the textbook in more detail.*	Children are positive, are able to analyze their activities from a cognitive point of view and offer deeper content activities in the future. If we analyze the linguistic aspect of cooperative learning, we note that the girl highlighted the advantage of the lesson that she worked in a group and was able to consult with friends of the group.

This observation was validated by the teacher of 3A who mentioned the complex context of the classroom: *I use group work less often, I apply cooperation when some children are being assisted more often, because the class is very different in terms of abilities, and it is very difficult because more conflicts arise. There are 6 children in the class with special needs, and during this lesson each group had a child with special needs. <…> Children who have special needs have a friend next to them who provides help. Collaborating in the lesson went well <…>. Everyone works at their own pace. M2 girl in the group was a leader, but she feels very much responsible, she is a leader and responsibility for the group is too much of a burden on her, the pace has slowed, even though individually she works very quickly, she knows a lot of things, she is a very brilliant girl.* The classroom context presented by the teacher was very important and showed that, if there were more pupils with

special needs, it was much more difficult to ensure quality work for all children while working in collaborative groups.

The study concluded that it would be easier and better to aid these children to become stronger/more advanced class. In this case, the role of the teacher in assigning roles to pupils and providing feedback was crucial (Saborit et al., 2016). A different situation in the classroom was presented by the teacher of class 3B: *we often work in groups, and children are used to working in groups. Kids like to change places, friends change, conversations are different, and that's why it's not boring. There are 29 students in the class, 4 with individualized curricula, 2 other students also have weak abilities*. Although there were children with low abilities in the classroom, this classroom teacher was more likely to apply learning in collaborative groups. During the lesson while working in groups, children had different roles and each student performed their duties very well. The teacher agreed with Stalder (2019) that cooperative learning was very much about motivating pupils to work in this way, about positive encouragement and about sustaining the use of this method in everyday activities. The study was carried out in two classrooms with many pupils with individual needs, but with different attitudes towards the method and different learning cultures.

Cooperative learning: opinion of pupils in Class 4.

Pupils in classes 4A and 4B also worked in cooperative learning. Class 4A had the most advanced experience in this field, as the teacher was well trained in the methodology of cooperative learning and applied it to work with children from the first grade. Data provided in Table 6 reveals the extent to which pupils were successful in this area:

To sum up the reflections of classes 4A and 4B, it was observed that fourth graders deeply analyzed their work in the group when they learnt collaboratively. They understood exactly the advantages of such work, and they perceived both cognitive and linguistic aspects, highlighting social inclusion and division of tasks and responsibilities. These pupils' insights are like a few previous studies. Moreover, the insights of class 4A teacher confirmed and enhanced the quality of pupils' work by pursuing a common goal, agreeing, and committing not only to self-performance but also to helping other children: *Today, the help was timely, and children helped each other. <...> This means that the children were ready, the children were working, they could agree, and when they don't agree and we try to discuss and argue, we know that truth is born in the debate. This is very important. It's important to be able to discuss, draw reasoned conclusions and present them publicly and loudly afterwards.*

It is important to note that the teacher stressed upon linguistic aspects: debate, argumentative opinion, agreements. This is an important value of cooperative learning while working in a group. In addition, the teacher also observed that by working in this way, children also deepened their cognitive experience, their knowledge in terms of analyzing the aspects of the subject content. A recent study (Carlos Torrego-Seijo et al., 2021) has emphasized and recommended to enhance feelings of care for classmates and cooperative working skills when pupils work together. All this can be done with quality when children know how to negotiate and follow agreements.

Table 6. *Experiences linked to language and cognitive content during cooperative learning in the fourth graders working group*

Category	Pupils' opinion	Researcher's comment
Finding information	10/04/2019, class 4A (N=3) M1 *It went very well, and we were able to find the information and to write it down.* B1 *We were most successful, where we had to find a word and put together famous people from Lithuanian history. I also liked it when we had to glue together some information about the famous people and to write a sentence of our own.*	When talking about working in a group, students first emphasized cognitive content, but when asked about the work in a group they expressed social aspects of cooperation (you are not alone, responsibility depends on others, we can do work more quickly). The two boys also emphasized the linguistic aspect, mentioning that their friends can explain something they don't understand and they can agree on the division of work. When it comes to the aspects to be improved, children made cognitive observations that more preparation should be made for the lesson.
Positive attitude to working in a group	B2 *I've enjoyed everything in this lesson because I always like working in groups and doing teamwork.* M1 *I like the fact that it's not you who does everything on your own, but someone helps you, too. And responsibility is not just up to you, it's up to other people as well. You're not alone.*	
Explanation and agreement as a way of providing assistance	B1 *I think that what I like about group work is that if you don't understand something, others can explain it to you, and besides, you don't necessarily do everything, others can help you if you don't understand something.* B2 *I like working in groups every time because we do things quicker, we can reach an agreement quicker.*	
Positive attitude to working in a group	09/05/2019, class 4B (N=3) M1 *It worked very well. We all worked in very friendly teams. It was easy for us to find everything, to write it down.* B1 *Our team did well, too, it was only a little bit hard to find information about certain people.*	
Questions as a way of helping	M1 *Nikita helped me when I asked him, and he would answer my questions because he was the smart of our team. <...>* B1 *Yes, it's more fun because you can consult with each other.*	Children are positive about working in a group, emphasizing the advantage of such work from a linguistic point of view, i.e. the opportunity to consult. All the children commented on who out of the group's friends helped them out while working in the group and how.
Finding information	B1 *Linas helped me, he would find the right page about the right person, for example, he helped me to find a page about Jonas Basanavičius.*	

The teacher of class 4B mentioned during the interview that she started applying the methodology of cooperative learning in a focused manner only after the start of the DICO+ project. Observations made by the teacher: *I've been preparing for this lesson for two weeks. It seems to me that even fewer tasks would be needed. There were more tasks in class 4A, we have fewer of them now, but we might need to go deeper into a subject next time. I would take only one activity and deepen it. We took circles (the same method) during the world study lesson and talked about continents, and it took us the whole lesson.* I share the teacher's opinion on reducing the amount of activity and deepening feedback and reflection on the quality of the task. Pupils need time for deeper analysis, discussion, questions, reflection, and consideration about why the activities were done in a particular way (Mahamod & Somasundram, 2017). It is important that such insights are provided by the teacher reflecting on her activities. This meant that research activities were useful and helped to deepen the analysis of the educational process. In addition, it should also be noted that children of this class were also positive about working together in groups.

Discussion

During the current study, it was observed that pupils and teachers deeply analyzed their work experience, and the process of education. The children were learning not only to absorb the content of the subject, but also to provide help, ask and consult their nearby classmates. The findings reveal that pupils identified an important aspect of cognitive learning – the opportunity to evaluate and check their work. In this way, cooperative learning was associated with the opportunity to improve one's own learning and to analyze the learning experience in a supportive environment (Ghorbani & Nezamoshari'e, 2012; Gillies, 2020; Vinatier, 2009) cooperation was based on the smooth conduct of the learning process, where teachers provided the right environment and enabled children to achieve learning themselves (Ghorbani & Nezamoshari'e, 2012; Gillies, 2020; Vinatier, 2009; Wimberley, 2011). In the current study, the children had correct answer sheets so they could check whether they had calculated correctly.

The study found that the contribution of teachers of classes 1A and 1B and 4A and 4B was significant to the practice of cooperative learning. It was good to observe that teachers had already taught first grade pupils how to observe their team, provide help to each other, ask questions, and work together. These findings are similar to studies (Gillies, 2016; Miller, 2017). Another observation was that the First-grade pupils accepted this way of working positively, as children did not yet have negative attitudes towards each other and easily created social ties. Meanwhile, class 4A had been nurturing cooperative learning for years, so the advantages of such work and ability to work in a quality way were also noted. In the current study, 4A graders worked very constructively, showing cooperation, and using a language to complete all group tasks. The cognitive achievements of this class using a language for cooperative learning are similar to the findings of Gillies and Ashman (2003) who also found that students engaged constructively with their peers on group tasks only when they used correct scientific language.

During this study, a more complicated situation was observed in classes 2A and 2B. In class 2A, for instance, a very small part of the content was implemented (only one third of the planned lesson) and therefore deeper cooperation relationships could not be established. In class 2B, however, children were unable to work amicably in one group, and the activity was not carried out together because one student only watched the work of others. These difficulties of cooperative learning in a classroom due to very different abilities of pupils were explored in past studies (Gillies & Ashman, 2003; Kliukienė, 2008; Sharan, 2010). The fact that it was not easy to organize education in this way was also and it was also an important challenge that helped to rethink the education process and to differentiate activities in the group more clearly according to children's abilities Finally, all participants in study groups showed more positive group work behavior

It was also noticed during the study that both children and educators performed their tasks professionally

and qualitatively. They talked about the benefits of group work and what changes and improvements can be made in what way and why. They made a deeper analysis of the educational process, which included not only elements of content, but also pupils' learning and activities considering learners' observations. This is expected to be in future as a daily routine, as deep reflection leads to improvement.

In addition, group tasks and cooperation contributed to the mutual trust and status of pupils in the classroom, for those children with lower intelligence levels (Buchs et al., 2017; Buchs et al., 2011; Buchs et al., 2018). Positive interdependence was fostered by tasks that motivated students to communicate This is consistent with the study (Sawyer, 2012; Sharan, 2010), which pointed out that cooperative learning not only improved pupils' academic achievement (in mathematics and in Spanish), but also their emotional intelligence and their ability to adapt to change.

Conclusion

The current research study revealed the attitude of primary school students and teachers towards the linguistic and cognitive aspects that can be developed in cooperative learning activities. The responses of pupils and teachers show that pupils' language abilities were shaped by a positive attitude in group work, formulation of questions, and the ability to aid in speaking. In addition, group work allowed primary school pupils to learn more quickly and efficiently, to find and analyze information, which is very important for the development of cognitive skills. The study showed that the theoretical concepts of cooperative learning could be put into practice and were recognized by children. This demonstrated the sustainability and usefulness of this approach for the development of both cognitive and language skills.

This study also reflected upon the experience of cooperative learning behavior of primary school pupils and identified a few aspects of language namely: asking for and giving help, asking questions to clarify content, and talking as a way of helping to learn. Some pupils were unable to work in small groups due to conflict situations and identified language skills as an aspiration for group work. Teachers whose classes had a good mastery of cooperative learning identified positive attitudes and children's empathy and engagement in working together as strength of cooperative learning. Conversely, if teachers rarely used cooperative learning and children did not develop skills to work in this way, they did not even talk about it during the reflection and only reflected on the cognitive content. It was more difficult to apply cooperative learning activities in classrooms with more special needs pupils.

In terms of cognitive content, cooperative learning was perceived by pupils as helping them to find the information they needed quickly and efficiently, to analyze it together, and to learn and understand more about what they were learning. Similarly, primary school teachers emphasized that the amount of cognitive content was reduced, while the level of analysis and understanding was deepened, i.e., pupils discussed and understood the material in much greater depth. Although the study was carried out in a single urban school, it was significant due to the method used to collect the data of all the teachers in the school. It became evident that their teaching practices were important for the sustainability of innovative pedagogical practices. The findings of this study have implications for future teacher educators and education policy makers who could make decisions about the application of innovation in educational practices. Based on the theoretical and practical analysis, university curriculum developers should be able to point out that teachers should be prepared to apply cooperative learning methodologies in their educational practice.

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