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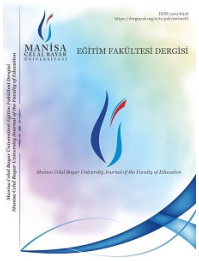

A Need Analysis Examining Teachers' Point of Views about Cooperative Problem Solving*

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Abstract

The aim of this study was to scrutinize teachers' point of views about cooperative problem solving. The study group comprises 25 teachers. Pre application was made to a group of three teachers. After informing the participants accordingly, the semi-structured teacher interview form was administered to teachers. Semi Structured Teacher Interview Form was used. Content analysis was used to analyzed data. Data were coded, themes and categories were determined. The aim of content analysis was to systematize and discern textual expression. Miles and Huberman's (1994) formula was used, result was calculated as 85 %. Findings indicate teachers think that Cooperative Problem Solving (CPS) affects students' individual and social development positively. Cooperative problem solving skill should be developed and included in curricula. Having analyzed, compared and discussed teachers' views, this study suggests CPS skills of students' must be enhanced. Teachers especially emphasize CPS will help students express themselves better, respect others, give them sense of togetherness.

Keywords

Need analysis

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INTRODUCTION

To increase the quality of education, it is important for teachers to have some features compatible with the requirements of the modern education systems (Bennett, 2003) since modern education systems have some recommendations for teachers. Determining necessary features to be a good teacher is not easy, accordingly, new developments and new practices are encountered in many parts of the world (Becker, Kennedy & Hundersmack, 2003). As it is today, in the past, the idea of what kind of knowledge and skills a good teacher should have, has attracted the attention of philosophers, thinkers and writers. For many years, educational thinkers and writers accentuated different facets of teaching. For instance, a teacher who specializes in the subject, encourages, motivates and inspires the student and supports moral standards. This can be a way to be more successful in the training process (Calderhead & Shorrock, 1997).

Another way can be developing student's problem solving skill. Problem solving skill helps students to use information, develop creativity and understand the concepts of the course better. The process can be individual or group work. Problems solved in a group promote students' social interaction and social skills such as communication and cooperation. Problem solving practice within a group is called as CPS (Cooperative Problem Solving). This is the process of seeking solutions to a problem situation in groups (Hickman & Erin, 2008). CPS is a scientific research, a democratic decision-making and the development of the group in cooperation (Tam, 2013).

When the literature is examined, it is seen that problem-based learning and cooperative problem solving in the educational environment have common features at certain points. Students are given a task to complete in groups, they try to complete this task face to face or online. They work together cooperatively and each one's contribution is important to the success of the group. However, the difference between them is that cooperative problem solving is mostly used in science, mathematics, engineering, social sciences and professional development programs, while problem-based learning is developed for use in education in the field of medicine and health profession (Weimer, 2002). Moreover, in cooperative problem solving, the internal dynamics of the group and the contribution of the group members to the process are more effective. In problem-based learning, the problem structure based on open-ended questions and the properties of the problem are more important (Davidson & Major, 2014). Since the content of this study is in accordance with cooperative problem solving skill, the concept of cooperative problem solving was used in the study instead of problem based learning.

Cooperative problem solving skill is a skill that is beginning to be effective in education. This skill can be developed in more detail with a curriculum. The first stage of a curriculum development process is needs analysis. This study was conducted in order to shed light on a curriculum that can be prepared for cooperative problem solving skills. Needs analysis is the process of defining and evaluating needs in education. Various decisions are made according to the findings obtained from the needs analysis. With the needs analysis, problem situations are determined in the targeted study and a solution is offered (McKillip, 1987).

It is essential to realize the importance of CPS and its benefit for educational environment. With CPS in the educational environment students can see various perspectives since they work together to solve the problem for a certain period of time. However, having equal time and equal opportunities are also crucial (Tam, 2013). Every student has responsibilities within the group. They should be provided with tools to enable them to fulfil these responsibilities (Johnson, Johnson & Smith, 1998). In addition, the most influential element of the CPS is effective communication (Johnson & Kwon, 2003). In groups, students support each other, complete their deficiencies and interact constantly, express their views, see different perspectives, respect others, evaluate alternative opinions and also try to achieve a common goal. During the CPS as a group, students determine the steps to be taken, plan together and implement the plan. They act together at all stages and take responsibility. All the students in the group consider alternative solutions of the problem. Thus, a multiple perspective is gained compared to the students' individual work. More solutions are presented and problems can be solved easily if an appropriate communication environment is provided. Social skills develop the ability to express themselves and also students realize that they should listen

to their friends with respect (Tam, 2013). Due to all these reasons, teachers' point of views about this skill may be beneficial. The development of CPS skill is also supported by international exams in recent years, which have had a significant impact on the educational environment. In this context, this study aimed to determine the teachers' point of views about CPS.

Theoretical Framework and Literature Review

A teacher who follows current developments professionally, renews constantly, will be more effective in profession and follow modern educational practices. Teaching activities such as choosing learning activities, making important explanations, asking effective questions, evaluating learning depends on how teacher understands activities (Ball & Mc Diamird, 1989; Ball & Forzani, 2009). Moreover, a teacher should be able to do more than presenting information (Shulman, 1986), should understand student's spirit and find the way to train him, should be able to structure and manage class activities, communicate well, use technology, reflect own practices to teaching, and develop it constantly (Hammond, 2010).

Nowadays, teaching has gone beyond transferring information and has become a guiding structure in every subject. This present situation requires teachers to adopt different perspectives that will accompany student in every way (Mc Lean, 1999). An experienced teacher adapts new developments, pays attention to self-improvement. Experienced teacher knows not only the subject area but also the student, teaching and classroom environment, understands class atmosphere, reshapes routine events and behaviours (Calderhead & Shorrock, 1997). In the traditional educational environment, teacher expected student to perform tasks, to remember information. However, in modern education, courses include tasks cover longer periods such as preparing projects and solving problems.

CPS skills are measured in PISA, one of the international exams held worldwide. Basically, the aim of exams such as PISA is to compare progress of countries depending on national criteria, instead of measuring individual or school success. Thus, strengths and weaknesses of education systems of the countries are determined. PISA offers very satisfying and realistic data in the preparation of curriculum or in determining the areas of need (Çepni, 2016). Developing and renewing the curricula of countries can contribute to increase success of PISA (Eijkelhof, 2014). For a country organizing the curriculum in accordance with PISA, enhances the academic success (Breakspear, 2012).

Currently, society needs students who can think critically, solve problems, communicate effectively, know subject, express knowledge and have necessary skills. The reason is that world now has a global structure. Individuals need to be able to cooperate and communicate adequately because these skills play an active role in work life. In business environments, individuals are now expected to take responsibility, make self-regulation and evaluation, be effective in interpersonal relationships, solve problems, work as a team and collaborate. CPS practices can help acquiring these skills. Cooperative problem solving is the work of individuals in a group towards a common goal. The important thing in this process is that the members of the group respect each other's views and agree on a common point (Wooldridge and Jennings, 1999). The benefits of CPS skills mentioned in the literature are that the student develops collaboration and problem solving skills (Brown & Campione, 1996; Gök & Sılay, 2009), feels happy to complete the task, strives to work more efficiently, (Guavain, 2001) and with the help of CPS skill student understands the problem that they may face in the future (Rittle, Johnson & Star, 2009).

METHODOLOGY

This study is a qualitative research examines teachers' point of views. Qualitative research is used to measure a number of features that cannot be measured in quantity, density or frequency, focuses nature of reality, social connection between researcher and subject, the relevance of experience and interpretation to the research problem is revealed by qualitative research (Denzin & Lincoln, 2005). For this purpose, teachers' opinions were taken and evaluated in line with the purpose of the study. The study was conducted during two months in the second semester of 2018-2019 education year in a state university in Turkey.

Study Group

The study group of the research consists of 25 teachers. The study group was chosen according to the convenience sampling. Participants have knowledge about the concepts of cooperative work and problem solving, which are components of cooperative problem solving skills. However, they do not have extensive knowledge about cooperative problem solving. Before the study, they were informed about cooperative problem solving. Descriptive features of the study group are presented in Table 1.

Table 1. Descriptive features of the study group

	Field		Frequency	Percentage
Primary School Teacher	Primary Teacher	T1, T2,T3, T4, T5, T6, T7, T8, T9, T10	10	%20
Secondary School Teacher	English Teacher	T11, T12, T13, T14, T15, T16	6	%12
	Turkish Teacher	T17,T18, T19	3	%6
	Advisory Teacher	T20, T21	2	%4
	Art Teacher	T22	1	%2
	Science Teacher	T23	1	%2
	Social Studies Teacher	T24	1	%2
	Physical Education Teacher	T25	1	%2
Other Features	Seniority		Frequency	Percentage
	1-5 years		4	%8
	6-10 years		3	%6
	11-15 years		8	%16
	16-20 years		3	%6
	20 years and over		7	%14
	Education Status		Frequency	Percentage
	Associate Degree		1	%2
	Bachelor's Degree		20	%40
	Master's Degree		4	%8
	Faculty (Graduation)		Frequency	Percentage
	Education Faculty		22	%88
	Faculty of Arts and Sciences		1	%4
	Distance Education Faculty		1	%4
	School of Physical Education and Sports		1	%4

Data Collection Tool

Literature was reviewed to obtain information about CPS. A semi-structured interview form developed by researchers consisting of ten open-ended questions. Having expert views about the interview form, necessary corrections / additions were made. To elaborate the teachers' point of views during the interview, the questions included in the form were expanded with explanatory examples. The names of the participants were kept secret, and the participants were given codes as T1, T2.

Sample questions in the interview form are as follows;

"How do you think the CPS environment supports student socialization?" "How does the CL environment support the student's communication skills?"

"What does the student need to make self-assessment and peer assessment in the CPS process?"

"What does the student need to communicate in the CPS process?"

In this study, CPS was the main focus of the questions and interviews were conducted with semi-structured interview technique and unexpected random impressions arising from the conversation with the participants during the interview were also added.

Data Analysis

Pre-application was made to a group of three teachers. As a result of the pre-application, it was determined that the questions were understandable. After informing participants accordingly, semi-structured teacher interview form was administered to teachers. Data were transferred to computer environment. In analysis of data, primarily aim was to reflect teachers' point of views regarding CPS. Descriptive analysis was carried out to explain existing situation. Content analysis was conducted to obtain and more detailed findings, to present data clearly and understandably, as well as to ensure impartiality. The content of text and document were examined. Then data was divided into classes (categories), lower and upper classifications were made. Data obtained from semi-structured interview forms were primarily tabularized in computer environment. Themes and categories were created depending on questions. Codes were reached by organizing and interpreting each word and sentence, and themes were created. While coding data, all responses were handled first and sentences and words were examined. Through this structuring process, teachers' point of views were tried to be better organized. Based on data, themes and categories were created. The similarities and differences of codes were determined together with co-observer and thematic (categorical) coding was made by bringing together related codes. In this way, the most general themes and codes were organized. Then, frequency analysis was made for sentences coded and placed in related categories.

Validity and Reliability

The prerequisite for the validity of a research is to use a measurement tool or research method that will cover the subject being studied (Çepni, 2005). In order to ensure the validity of the research results, the formation of themes explained in details. For reliability, the researcher worked together with the co-observer to confirm whether themes and codes generated under the category represent these themes. Lincoln and Guba (1985) suggest that an analysis and interpretation of qualitative research should be supervised by someone outside (cited in Glesne, 2012). The categories with the themes and codes formed were created with co-observer. The frequency and percentage values of the coding created by the researcher and co-observer for the themes were compared to calculate the inter-rater agreement value. The reliability formula determined by Miles and Huberman (1994) was used to determine the inter-rater agreement of researchers.

Reliability Percentage=Agreement/(Total Agreement + Disagreement) *100

Frequency values of the codes were compared to determine the inter-rater agreement of the observers. The aim is to explain the research findings well with the coding and to reveal the agreement between observers at the best level. The coherence of the researcher and co-observer was calculated as 85%. The coding was accepted as reliable since the result obtained exceeded 70 % (Miles & Huberman, 1994). In this study, the researcher presented

the participant views as they were, without prejudice and in an impartial manner. Interviews were conducted with care and the data were carefully analyzed and presented.

FINDING

In this section, findings of the study are presented. Teachers' point of views on how CPS supports student development are given in Table 2.

Table 2. Teachers' point of views on how CPS supports student development

How does CPS support student development?			
Category	Theme	Sample Expressions	f
Competence	Process Competence	Expresses herself/himself better (T1, T2, T3, T4, T7, T8, T9, T12, T16, T20, T21, T23, T24)	15
		Respects his/her friends (T2, T3, T4, T13, T17, T18, T20, T25)	8
	Individual Competence	Sense of responsibility increases:(T5, T9, T11, T12, T15)	5
		Decision making skills improve: (T14, T19)	2
		Academic success increases: (T5)	1
Awareness	Social Awareness	Gains a sense of togetherness: (T3, T8, T11, T13, T14, T16, T21, T25)	8
		Learns to help: (T3, T5, T6, T7, T9, T15, T20)	7
		Realizes team spirit: (T2, T6, T9, T20, T23)	5
	Individual Awareness	Empathizes: (T3, T13, T17, T18, T22)	5
		Communication skills increase: (T20, T24, T25)	4
		Learns to adapt: (T4)	1

Table 2 showed teachers' point of views were categorized as "competence" and "awareness". The competence category consists of "process competence" and "individual competence" themes, and "awareness" category consists of "social awareness" and "individual awareness" themes. The expression with the highest frequency is in the theme of process competence. The expression with the lowest frequency is in Individual competence and Individual awareness themes. The quotations obtained from the teachers' point of views regarding this finding were presented below.

Researcher: "How does CPS support student development?"

T (20): "It helps individual to be able to share, to be able to listen, respect different ideas and whose social communication skills are developed." (Sample view from process competence theme).

T (24): "Since working with the group is essential, the student will be in contact with his/her friends and therefore it have positive effects" (Sample view from individual awareness theme).

Teachers' point of views on how the CPS environment supports the socialization of the students were given in Table 3.

Table 3. Teachers' point of views on how CPS environment supports student socialization how do you think the cps environment supports student socialization?

How do you think the CPS environment supports student socialization?			
Category	Theme	Sample Expressions	f
Self-confidence	Self Confidence in Communication	Speaking and listening skills enhance: (T2, T4, T5, T13, T15, T17, T18, T20, T23, T25)	10
		The ability to express himself/herself improves: (T1, T8)	2
	Self Confidence in Social Environments	Doesn't feel alone: (T3)	1
		Becomes an extrovert person: (T8)	1
Social Skills		Learns to choose the right friend: (T5, T7, T9, T13, T16)	5

	Intragroup Compliance	Creates team spirit in the learning environment: (T6, T11, T14, T21, T24)	5
		Negotiation skills improve: (T4, T5)	2
	Conflict Resolution	Gains the ability to follow group rules: (T10)	1
		Learns what to do in case of conflict: (T19)	1
		Learns to control his/her behavior in a group: (T22)	1
		Gains the ability to affect the whole alone: (T12)	1

Table 3 showed teachers' point of views were categorized in two categories as "self-confidence" and "social skill". In "self-confidence" category, there were themes of "self-confidence in communication" and "self-confidence in social environment", and "social skill" category included "intragroup compliance" and "conflict resolution" themes. The expression with the highest frequency is in the theme of Self confidence in communication. The expression with the lowest frequency is in the themes of Doesn't feel alone, becomes an extrovert person, Gains the ability to follow group rules, learns what to do in case of conflict, learns to control his/her behavior in a group and Gains the ability to affect the whole alone. The quotations obtained from the teachers' point of views regarding this finding were presented below.

Researcher: "How do you think the CPS environment supports student socialization?"

T (11): "It helps students to get away from egocentrism and gain team spirit and also supports students to act as a team in the society." (Sample view from intragroup competence theme).

T (3): "It positively affects the socialization of the student. Since student will try to follow the rules in the group, his social skills develop accordingly and he does not feel alone" (Sample view from self confidence in social environments theme).

Teachers' point of views on whether there are practices in the school curriculum regarding the development of students' CPS skills are given in Table 4.

Table 4. Teachers' point of views on whether there are practices for CPS skills in school curricula

Do you think that practices are included in the school curricula to develop students' CPS skills?		
Theme	Sample Expressions	f
Partially	CPS practices are not included, but cooperative learning is included: (T1, T2, T3, T4, T5, T6, T7, T8, T11, T15, T20)	11
Negative	No, it is not included.: (T13, T16, T17, T18, T21, T22, T24, T25)	8
Positive	Yes, it is included: (T9, T10, T12, T14, T19, T23)	6

The quotations obtained from the teachers' point of views regarding this finding were presented below.

Researcher: "Do you think that practices are included in the school curricula to develop students' CPS skills?"

T (25): "No, curricula does not include practices for developing CPS skills." (Sample view from negative theme).

T (20): "Partially included. There are no practices for CPS skills. However, there are activities for students to do group work and act together." (Sample view from partially theme).

Teachers' point of views about what can be done to improve a student's problem solving skill were given in Table 5.

Table 5. Teachers' point of views about what can be done to improve a student's problem solving skill

What do you think can be done to improve the student's problem solving skill?			
Category	Theme	Sample Expressions	f
Understanding the Problem and Creating a Strategy	Features of Problem	Diversity can be presented in problem scenarios: (T6, T8, T11, T13, T15, T17, T19, T21, T22, T23, T25)	11

		The problem can be given according to the age of the student: (T2, T3, T9, T10, T11, T23)	6
		Real-life problems can be given: (T2, T4, T10, T21, T25)	5
		Problem scenario can be visualized: (T7)	1
	Features of Process	More problems can be solved: (T8, T25)	2
		It may be asked to explain how he/she plans to solve the problem.: (T5, T6, T7, T8, T9, T10, T12, T13, T14, T17, T19, T24)	12
		Problem scenario can be presented with dramatization: (T2, T13)	2
Preparation	Understanding	Reasoning ability can be improved: (T1, T5, T14, T16, T20, T24, T25)	7
		He/she can be provided to understand the question correctly: (T1, T8, T12, T20)	4
	Practice	The student can present how to solve the problem by visual or table: (T15, T17, T22, T23)	4
		Cooperative learning method can be used: (T19)	1
	Affective Features	A sense of wonder can be evoked: (T4, T11, T15, T20, T21, T23)	6
		Prejudice can be avoided: (T1)	1
		Self-confidence can be improved: (T18)	1
	Other	Feedback can be given: (T14, T22)	2

Table 5 showed teachers' point of views were classified in two categories as "understanding the problem" and "creating a strategy and preparation". The category of "understanding the problem" and "creating a strategy" included "features of problem" and "features of process" themes. "Preparation" category included "understanding", "practice", "affective features" and "other" themes. The expression with the highest frequency is in the theme of Features of process. The expression with the lowest frequency is in the themes of Problem scenario can be visualized, Cooperative learning method can be used, Prejudice can be avoided and Self-confidence can be improved. The quotations obtained from teachers' point of views regarding this finding were presented below.

Researcher: "What do you think can be done to improve the student's problem solving skill?"

T (15): "A process timeline can be prepared where the student can show how to solve the problem. A visual can be prepared and students may be asked to apply the stages."(Sample view from practice theme).

T (16): "They may be asked to reason and find solutions for problem solving."(Sample view from understanding theme).

The teachers' point of views on the contribution of the students to the given task (participation of all students) in the CPS environment were given in Table 6.

Table 6. Teachers' point of views about co-contribution of the students to the task in a CPS environment

How is it possible for students to contribute equally to the given task (all students participate) in a CL environment?

Category	Theme	Sample Expressions	f
Precaution	Attendance Control	The participation of all students can be checked with the list: (T8, T10, T12, T16, T19, T20, T23)	7
		A task can be given to each student in the group: (T2, T3)	2
		Different tasks can be assigned to the students in order: (T13)	1
	Equality	A democratic task distribution can be made: (T5)	1

		Equal right to speak can be given to students: (T18)	1
		Students should not be juridified for what they do: (T17)	1
Concordance	Appropriate	Students can be assigned according to their interests and abilities: (T1, T4, T7, T12, T15, T20, T21)	7
		Activities appropriate to their level can be held: (T9, T14, T21, T24)	4
	Alternative	Participation can be voluntary: (T14)	1
		Students who can get along can be grouped together: (T6)	1
	Other	Tasks containing games can be given: (T2, T4, T25)	3
		Brain storming can be done: (T22)	1

Table 6 showed teachers' point of views were categorized in two categories as "precaution" and "concordance". "Precaution" category included "attendance control" and "equality" themes, "concordance" category included "appropriate", "alternative" and "other" themes. The expression with the highest frequency is in the theme of Attendance control. The expression with the lowest frequency is in the themes of A democratic task distribution can be made, Equal right to speak can be given to students, Participation can be voluntary and Students who can get along can be grouped together. Problem scenario can be visualized, Cooperative learning method can be used, Prejudice can be avoided and Self-confidence can be improved

The quotations obtained from the teachers' point of views regarding this finding were presented below.

Researcher: "How is it possible for students to contribute equally to the given task (all students participate) in a CL environment?"

T (1): "It can be provided by assigning tasks appropriate to the student's interests and abilities." (Sample view from appropriate theme).

T (8): "It can be emphasized that everyone has a right to say his/her point of view. It can be checked whether everyone's opinion is taken in the process. Students who are found not to have contributed can be identified and motivated and supported to participate." (Sample view from attendance control theme).

Teachers' point of views about studies in order to improve students' CPS skills were given in Table 7.

Table 7. Teachers' point of views about doing studies to improve students' CPS skills

Do you have any practices in your lessons to improve your students' CPS skills? If you do, what kind of practices are they?

Category	Theme	Sample Expressions	f
Favorable	Partially Used	I do not have CPS practices, but I have activities for cooperative learning: (T3, T8, T9, T12, T13, T15, T16, T17, T18, T20, T23)	11
		In math class, I have problem solving activities in groups: (T1, T4, T5, T6, T7, T10)	6
		I have CPS activities in the community service practices and environmental cleaning: (T4)	1
		It is used in Traffic Safety - School Crossing lessons: (T10)	1
	Similarly Used	I want the groups to solve problems with the case method: (T21, T22)	2
		I assign projects to groups: (T14)	1
Unfavorable	Not Used	I do not do activities to develop CPS skills: (T2, T11, T19, T24, T25)	5

Table 7 showed that teachers' point of views were categorized in two categories as "favourable" and "unfavourable". "Favourable" category included "partially used" and "similarly used" themes, "unfavourable" category included "not used" theme. The quotations obtained from teachers' point of views regarding this finding were presented below.

Researcher: "Do you have any practices in your lessons to improve your students' CPS skills? If you do, what kind of practices are they?"

T (14): "I am trying to organize pair work activities in the class I use these activities most and, in a way, that students can do their projects and performance assignments outside the class." (Sample view from partially used theme).

T (3): "In this direction, I do group work, I divide students into groups and I want them to work together." (Sample view from partially used theme).

Teachers' point of views about what should be done to improve students' CPS skills are given in Table 8.

Table 8. Teachers' point of views about what should be done to improve students' CPS skills

What can be done to develop a student's CPS skills?			
Category	Theme	Sample Expressions	f
Guidance	Group Work	Group training can be done: (T1, T3, T4, T6, T7, T9, T10, T12, T14, T15, T18, T20, T21, T23)	14
		Group work studies can be done: (T2)	1
	Process	Pair-work studies can be done: (T8)	1
		Project works can be done: (T11, T22)	2
		Groups can be trained with the game: (T13)	1
Supporting	Discussion	Activities where students can make joint decisions can be prepared: (T5)	1
		Discussion environment can be created: (T25)	1
	Social Structure	Friendship relationships can be strengthened: (T16, T17, T24)	3
		Social environment can be created outside the school: (T19)	1

Table 8 showed that teachers' point of views are categorized in two categories as "guidance" and "supporting". "Guidance" category included two themes; "group work" and "process". "Supporting" category included also two themes as "discussion" and "social structure". The quotations obtained from teachers' point of views regarding this finding were presented below.

Researcher: "What can be done to develop a student's CPS skills?"

T (9): "Group works can be done, children games, drama activities can be done in younger age groups"(Sample view from group work theme).

T (22): "Project tasks can be given, for example, practices such as solving sample problems should be practiced frequently and students can be supported in this way." (Sample view from process theme).

DISCUSSION

Findings indicated teachers had positive views about CPS, emphasized CPS help students express themselves better, upgrade their ability to respect others, give a sense of togetherness, contribute to help their friends. Similarly, Gömleksiz and Özdaş (2013), examined teachers' views, and found social environment is a structure that enables students to express themselves more comfortably and connect them to school. Yasul and Samancı (2015) found that teachers think in group work, students' feelings of help and share improve, their academic success increase, they socialize, and get help from their group friends. Helping is beneficial not only for unsuccessful student, but also for a successful student. Thinking how a student can tell subject to his friend, enhances his thinking skills, however, students should help each other at the right time, communication should be in detail, understandable and consistent (Blumenfeld, Marx, Soloway & Krajcik, 1996).

Similarly, in Çakmak's study (2014) teachers think that group work is beneficial for the socialization of students. Erden (2000) also states that group work increases interaction within the group, enables students work together, students enjoy lesson more and trust themselves. According to UNESCO / APC (2013), students develop mutual understanding, respect in CPS. Ragaf (1998) states that activities in which students share views with their

peers are very crucial for their cognitive development. When they interact with their peers, students learn new skills, motivate each other to take risks, encourage their friends to use their potential skills, CPS offers all these possibilities.

Findings revealed teachers frequently emphasized self-confidence and social skills. In self-confidence category, students' speaking and listening skills improve, in social skills category, students can choose the right friends and gain team spirit in learning environment, comply with the group rules and control their behaviour. In the study conducted by Ocak, Akgül & Yıldız (2010), teachers think cooperative environments are influential for the socialization of the student. Similarly, Şimşek, Örten, Topkaya and Yıllar (2014) states pre-service teachers think that cooperative studies both increase academic success and are socially and psychologically beneficial.

Wooldridge and Jennings (1999) also stated that CPS is a social communication process. In CPS students work together and communicate to achieve a common goal. Group needs to communicate, the group members should be socially active and take part in activities. In addition, believing that group members will benefit from their cooperation and supporting each other will provide a successful solution. As part of the self-confidence theme, Carlan, Rubin and Mogan (2005) state that with CPS, student will take responsibility of his own learning, become aware of learning process, and see themselves more adequate, and increase the student's self-confidence and motivation.

Teachers stated there was no practices in existing school curricula to promote students' CPS skills, but there are cooperative learning practices, which are a sub-component of CPS. The existence of such activities in some courses is another finding of the study. In some studies, the views of teachers about the deficiencies of curriculum also supported this finding (Güven, 2011; Merter & Şan, 2012; Tuncer & Berkant, 2012).

Ünsal (2006) stated cooperative learning teams increase academic success of pre-service teachers, affect them positively and enable them to make positive evaluations about the problem solving method. Heick (2018) emphasized three basic elements; knowing, valuing and acting in classroom environment and going beyond traditional classroom environment. However, he stated communication and cooperation and problem solving skills are involved in the acting in modern classroom environment. Development of CPS skills and their involvement in educational curricula are viewed as essential in learning environment of 21st century.

Teachers stated that to develop problem solving skill, which is a sub-element of CPS, students can explain how they plan to solve the problem, teachers may offer students diversity in problem scenarios and visualize problem situation. In addition, teachers emphasized importance of developing the reasoning skill and stimulating a sense of curiosity to develop students' problem solving skills and giving feedback to the solution of the problem will develop the problem solving skill of the student. Similarly, in the literature, some studies claimed that the problem solving skills of the students should be enhanced. (Semerci, 2000; Erdem & Yazıcıoğlu, 2015; Brown & Campione, 1996; Gök & Sılay, 2009). Mc Guire (2001) defines problem solving as a skill. It means that it can be learned or the existing problem solving skill can be advanced. Developing problem solving skills is based on cognitive effort and continuous practice and activities of problem solving.

Education should enable students to be happy and successful in their daily lives. For this purpose, attention should also be given to developing problem-solving skills. Only in this way, can students gain skills to solve problems they may encounter in daily life (Genç & Şahin, 2013). Qin, Johnson and Johnson (1995) stated problem solving consists of four stages. These; understanding the problem and determining steps to be taken, planning solution, implementing this plan and evaluating results. Improvement of problem solving skills depends on the fact that students' being in a problem solving environment in the classroom and participating in education and training activities in this direction. In addition, it is important to establish a connection between new knowledge and previous knowledge of student during learning activities and to select problems that will attract the attention of student. Therefore, student is required to participate in problem solving activities (Johnston, Johnston & Markle, 1986).

Findings also showed, keeping participation records of students and assigning students to groups according to their interests and abilities are crucial. In a CPS environment, students are presented with problem scenarios that

they can solve by working together. Students are expected to understand information given about problem scenario, interpret this information and use it for solution purposes. For this purpose, all students should be encouraged to participate in these activities in classroom. Students should be encouraged to speak in groups so that they gain the ability to express themselves, defend their thought and communicate. In addition, the researcher's observations and student checklists can be effective. To communicate within group, student tries to find solutions to the problem and to reach the result through trial and error. Teachers' point of views about the necessity of all students to participate in the group studies in the CPS process are also expressed in the literature. Cohen, Lotan, Abram, Scarloss, and Schultz (2002) expressed the benefits of group work as helping students work together, learning from each other, encouraging the participation of all students, respecting each other's strengths and weaknesses. Koç, Erdamar and Demirel (2010) stated that, in group work some students work and others do not. Yasul and Samacı (2015) also stated that some students did not participate in group work and they tried to transfer their duties to other friends. The important point in the problem solving process with the group is to benefit from the opinions of everyone, in order to reach the result in a short time, members should not abstain from expressing their opinions. As a group, spending time and energy sharing, listening, and building ideas by linking together result in success (Beatty & Scott, 2004). Dolmans, Wolfhagen, Van Der Vleuten and Wijnen (2001) stated that some students do not participate in group work intentionally. CPS refers to group work, knowledge of the group and analysis of the communication process, common understanding and evaluation of the group (Greiff, Holt & Funke, 2013). In CPS, members experience the sense of equality, see the conditions of compromise clearly, and adhere to the agreed decision (UNESCO/ APC (2013).

Findings also indicate that peer assessment forms can be used in the CPS process in order to control the participation of all students. Studies in the literature express the positive effect of peer assessment on participation. In a study by Handayani and Genisa (2019), peer assessment showed that students increase their performance in group discussions and improve interpersonal skills, group work and problem solving skills. In the same study, peer assessment reduces students' laziness, dominant students reduce their dominance over group friends, ensures that all group members take equal responsibility and equal distribution of tasks, and all individuals participate in the group discussion. In the study conducted by Falchikov (1993), self and peer evaluation is a simple and effective method that can be used in the evaluation process of group work. However, some negative aspects of peer review are also expressed in literature. Akpınar and Kranda (2016) cited the lack of objective evaluation by peers as the most important negative aspect of peer evaluation. They also stated that the students were worried about whether they made an accurate assessment when evaluating their friends and about their reactions to the assessment result.

Teachers' point of views about the activities in their lessons to enhance students' CPS skills showed most teachers do not engage CPS activities in their lessons but do activities for cooperative learning. Some teachers expressed they had similar activities in Mathematics, Society Community Service and Environmental Cleaning and Traffic courses. On the other hand, some teachers expressed they wanted students to solve problems with the case study method in the theme of group work or they gave the students a project tasks. Gök and Sılay (2009) stated that a cooperative method can be used to develop problem solving skills. With cooperative learning, students learn sharing, solidarity, and to comprehend the importance of group work, see their own shortcomings and learn how and when to use problem solving strategies. For this reason, teachers should include CPS activities in the classroom. Şimşek and Topkaya (2013) stated that teachers encounter some difficulties in cooperative learning practices. Erbil and Kocabaş (2019) also stated that teachers have some misconceptions about cooperative learning, while Yeşilyurt (2013) states that cooperative learning method is the least used method by teachers.

In literature the positive effects of cooperative learning and problem solving are stated frequently. Artut (2016) found that the prospective teachers mentioned positive effects of working on non-routine problems in a cooperative learning group. However, despite its positive effects Birgili, Kiziltepe and Seggie (2016) found that teachers mostly prefer direct instruction; group work is the second preference; and while teachers are implementing the cooperative method, they implement activities and projects at all levels. Cooperative problem solving provides an authentic learning environment for students. In his study Şekerci (2020) states that students and teacher had positive views on

using authentic learning in the social studies course. In addition to that, students also thought that the process of authentic learning contributed to them in developing several skills and qualities. Cooperative learning and problem solving can be combined with different methods. For instance, Zorlu and Sezek (2020) found that modeling based teaching method made positive contributions to the cooperative learning model. It should be applied together with MBT with different methods of cooperative learning model in science education. Moreover, cooperative learning improves students thinking skills also, Erdoğan (2019) states that cooperative learning supported by reflective thinking activities can be said to have a positive effect on students' critical thinking skills. Similarly, some studies focus on positive effects of cooperative learning environments, problem based learning and enriched learning environments (Artut and Bal, 2018; Çukurbaşı and Kıyıcı, 2018; Zengin and Tatar, 2017; Erdem and Soylu, 2020; Bahar and Aksut, 2020).

CONCLUSION

CPS is decisive in social environments, student's gaining CPS skill will make life easier for them both in terms of social relations and cognitive problem solving skills. The development of the student's problem solving skill increases creativity, self-confidence and sense of responsibility. When teachers' suggestions for developing students' CPS skills were examined, findings showed they emphasized that it is significant to give group tasks and projects. These activities will strengthen friendship relations of the students and contribute to creating social environments outside the school. Educators and teachers have a great responsibility in solving problems in the school environment, to achieve a result without conflict, mutual understanding and compromise. CPS is an effort to seek results for all members' opinions and suggestions, which requires all group members to actively participate in problem solving process. For this reason, educators can use CPS to create a social and democratic classroom environment. This study is limited to the views of participants. For further research from different grades and from different fields more teachers can be included. Considering the teachers' views on cooperative problem solving, experimental studies can be conducted to support these views in future studies. Activities to develop CPS skills can be conducted in different lessons. By examining the effects of these activities on students, contribution can be made to the literature according to the results obtained.

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