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## STRUCTURING PROCESS AND EVALUATION OF GROUP WORK BY PROSPECTIVE PRE-SCHOOL TEACHERS

*Research Article*

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### Abstract

In this study, it was aimed to examine the prospective teachers' preferences regarding group work, the process of structuring the group work, and assessment of their performance within the group. In the research, case study design was used. The participants of the study consisted of 62 prospective teachers studying in the Department of Early Childhood Education at a state university in 2017-2018 Spring Term. The data of the study were collected with the "Group Work Questionnaire". While frequency analysis of descriptive statistics was used in the analysis of the quantitative data obtained from the questionnaire, descriptive analysis was used in the analysis of the qualitative data. As a result of the research, it was seen that the internal reasons were determinant in deciding the groupmate and tasks were shared by taking equal distribution of responsibilities and skills of the members into consideration. During the group work, problems such as time management, disagreements among members and social loafing were encountered. As to assessment of the performance within the group, it was determined that the group members found themselves competent and that the majority could prefer group work in future studies.

*Keywords:* group work, ingroup performance, prospective teachers, social interaction, social loafing

### 1. Introduction

Creating an effective learning environment in the classroom is one of the most important educational policies (UNESCO, 2008). Social interaction in the classroom has become more important in the realization of effective learning, with the understanding of the importance of learner's constructing the knowledge rather than the direct lecturing of the teacher and spending time more on learning rather than teaching (Fung & Howe, 2014; Koç-Erdamar & Demirel, 2010). Most teachers include group work to create an interactive learning environment in the classroom and increase students' academic success and motivation (Adams & Hamm, 1994; Williams, Guy, & Shore, 2019).

In educational process, interest in group work is increasing gradually. One of the reasons for this increase is that business and projects in the business world in the 21st century require a complex skill set (Lavy, 2016) and therefore the business world demands people who can solve problems in harmony and cooperation by combining their own ideas and efforts with the ideas and efforts of other group members (Johnson & Johnson 2003; OECD, 2017). It is expected for individuals to gain effective group work skills in their educational life before they

start working life. The education model used in higher education aims to make individuals gain competencies they need so as to overcome their responsibilities in their future business lives effectively (Díaz Pareja, Cámara Estrella, Muñoz Galiano, & Ortega-Tudela, 2017). This situation reveals the need for higher education institutions to develop students' group work skills (Graen, Hui, & Taylor 2006) and leads to an increase in the use of group work (Mamas, 2017; Takeda & Homberg, 2014). Another reason is the criticism of educational processes based on individual work and rivalry, and conducting research that reveals the benefits of group work (Fung & Howe, 2014; Johnson & Johnson, 2009). In the studies conducted (Chang & Brickman, 2018; Çakmak, 2014; Forslund Frykedal & Hammar Chiriac, 2018; Koç-Erdamar & Demirel, 2010; Mamas, 2017; Volkov & Volkov 2015; Yanpar-Yelken, 2009; Yasul & Samancı, 2015) it was seen that the group work was effective in the development of cognitive skills, affective characteristics, social interaction, collaboration and communication skills and in the increase of academic success and meaningful learning. The increase in the importance given to group work in education brings along the problems experienced in group work. Not sharing responsibilities fairly among group members as a result of task dividing, poor task descriptions, not determining a work plan and group rules, giving the members the responsibility they do not want to take, failure in fulfilling responsibilities and showing social loafing, students' not sharing what they know with other group members, studying individually after dividing tasks, group members' getting the same performance score despite different efforts, ingroup communication problems, unsuitable personality traits of students for group work and some students' affecting others negatively to be in the forefront are the main reasons preventing group work (Arslan, Taşkın, & Kirman-Bilgin, 2015; Çakmak, 2014; Koç-Erdamar & Demirel, 2010; OECD, 2017; Takeda & Homberg, 2014). These problems cause group members to underperform, loss of time, decrease in their productivity; and lead students prefer to work individually in their next studies (Koç-Erdamar & Demirel, 2010; OECD, 2017; Piezon & Ferree, 2008). Turkey is located in the top rankings in students' preferences of working individually rather than in groups.

According to the results of PISA 2015 collaborative problem-solving tasks carried out by OECD, while Singapore ranked first with 561 scores, Turkey ranked last among OECD countries with 422 scores and ranked 48<sup>th</sup> among 51 countries whose performance results evaluated. Through group work only one-third of students in Turkey were able to overcome their individual performance. More than half of the students in only two of the countries included in PISA application stated that they preferred individual work over group work. Turkey was one of them. Every six of ten students in Turkey remained at the lowest level in collaborative problem-solving skills and more than 93 percent showed a poor performance in collaborative problem solving (OECD, 2017). According to the report published by OECD (2017), students' perception of group work is shaped significantly by teachers. It was emphasized that teachers could make a difference in group work and that they needed classroom environments that would support group work. In group work, teachers are expected to guide the formation of the work plan of the group, sharing responsibilities among the group members, peer evaluations, and ensuring effective communication among students (Chang & Brickman, 2018; Chiriac & Granström, 2012). In order for teachers to create a positive perception for students in group work, they need to have a positive perception about group work first. The positive perception and competence of prospective teachers who will raise the teachers of the future regarding group work is important in terms of both conducting effective group work and helping students to gain competencies for group work (Díaz Pareja et al., 2017). It is also crucial for the teacher to know the ease and difficulties in applying a method through his own experience in order to use it effectively in his class. The most important factor which plays a role in the emergence of this study is that the researchers desired to examine the situation in detail as a result of the fact that they observed that there were problems in the

application of methods based on group work in their classes and that the prospective teachers had different preferences for working in groups. Depending on these important points and observations of the researchers, the purpose of this study is to examine the prospective teachers' preferences for group work, the process of structuring the group work, and their assessment of their ingroup performances. Within the framework of this general purpose, answers to the following questions were sought:

1. What are the experiences and preferences of prospective teachers regarding group work?
2. What influences did prospective teachers have in the process of structuring group work?
3. What influences did prospective teachers have in the process of conducting group work?
4. What are the prospective teachers' evaluations for group work?

Examining the preferences and practices of prospective teachers for group work is important in determining their needs related to group work, providing a basis for the trainings to be conducted on this subject and helping to monitor the progress in this subject area. Additionally, the results of this study are expected to improve the group work processes conducted.

### **1.1. Theoretical Framework**

Group work is a time-limited form of learning or working, consisting of two or more individuals who gather for a common purpose and interact with each other (Li & Campbell, 2008; Susskind & Borchgrevink, 1999). The main purpose of group work is to enable students to think together, generate ideas, discuss and solve problems (Demirel, 2011).

Social interdependence theory, developed by Johnson and Johnson (2009), helps form the theoretical framework of group work by explaining the five main variables that mediate the motivational, social and cognitive dimensions of interdependence required for group work. The first variable is positive interdependence. Positive interdependence occurs only when individuals believe that they can achieve their goals by working in cooperation with other individuals and support each other's efforts. The second variable is individual accountability. This responsibility means that the individual performs his duties in group work and facilitates the work of other members. The third variable is promotive interactions. Individuals carry out promotive interaction by sharing resources, helping each other, motivating others through bringing new perspectives to group members' ideas and facilitating their work. The fourth variable is the appropriate use of social skills. These skills include the ability of individuals to know and trust each other, to communicate, to support each other and to resolve conflicts that arise. Lastly, group work should provide a mechanism to manage the process. This mechanism involves students' setting common goals, evaluating positive and negative group interactions, and providing feedback to group members. In situations where these five variables exist, effective group work can take place (Chang & Brickman, 2018; Forslund Frykedal & Hammar Chiriack, 2018; Johnson & Johnson, 2009).

### **1.2. Research on Group Work**

Research on group work has been conducted with teachers and students at all educational levels (Çakmak, 2014). Whereas some studies have focused on the effect of group work on academic success and the development of critical thinking (Arslan, Taşkın, & Kirman-Bilgin, 2018; Fung & Howe, 2014); some studies have focused on inclusive processes in group work and the examination of students' cooperation (Forslund Frykedal & Hammar Chiriack, 2018). In studies carried out on university students, the preferences and expectations of students with high and low academic success towards group work (Chang & Brickman, 2018; Williams,

Guy, & Shore, 2019); the relations between group work and various variables (Mamas, 2018); the effect of personality traits on benefiting from group work (Lavy, 2016); group work dynamics of students from different cultures (Mittelmeier, Rienties, Tempelaar, & Whitelock, 2018); the effects of groups having differences depending on ethnicity, gender and culture and opinions of students about this difference (Moore & Hampton, 2015; Takeda & Homberg, 2014); important factors for effective group work (Butt, 2018); social loafing behaviors that students observe (Büyükgöze & Demirkasımoğlu, 2018) were examined. In the study of which the participants were consisted of teachers (Yasul & Samancı, 2015), the opinions of the classroom teachers about the group work and the problems they encountered were tried to be determined. In studies conducted on prospective teachers, the effect of group work on learning and performance (Akgün & Aydın, 2009; Delice & Taşova, 2011; Yanpar-Yelken, 2009); perceptions of prospective teachers regarding group work (Çakmak, 2014; Koç-Erdamar & Demirel, 2010) and the effect of group work on proficiency gain (Diaz-Pareja, et al., 2017) were examined.

Çakmak (2014) stated that it would be important to carry out research examining group studies in teacher training. In the literature, a study which includes prospective teachers' preferences for group work, structuring group work and evaluating their performance within the group could not be encountered. This study is significant in terms of eliminating this gap in the subject area with reference to the suggestions of previous research. The difference of this research from other studies is that the opinions of prospective teachers were received immediately after they experienced group work. For this reason, the answers given by prospective teachers are thought to be in line with their experiences rather than being ambiguous or directed towards group work conducted in any period. The other situations specific to this research are that group work proceeded over a course period and included both in-class and out-of-class practices.

## **2. Method**

In this research, case study design was used. Case study is a holistic analysis and definition of a current phenomenon in its real-life environment, natural conditions (Yin, 2018) in a limited time period (Merriam, 2015). The case examined within the scope of this study is 'group work'. Prospective teachers participated in group work process during a course period and thus, the case was tried to be examined in its natural conditions, based on the real-life environment. The most important characteristic of case studies is that the factors regarding a situation (environment, individuals, events, process, etc.) focus on how they affect the related situation and how they are affected by the related situation (Yıldırım & Simsek, 2008). In this study, it was tried to examine how the preferences of the participants for group work affect the group work and the effect of the group work on the participants' performances and their preferences of whether to work in groups in future studies.

### **2.1. Study Group**

The participants of the study consisted of 62 prospective teachers studying in the freshman year in the Faculty of Education, Department of Early Childhood Education at a state university in 2017-2018 Spring Term. Information regarding the study group was presented in Table 1.

Table 1. *Demographic information of the study group*

Variable	Level	%
Gender	Female	85.5
	Male	14.5
Age	18	6.9
	19	41.4
	20	32.8
	21	15.5
	22+	3.4
Graduated high school type	Anatolian High School	50.8
	Vocational High School	24.6
	Imam Hatip High School	13.1
	Basic High School	4.9
	Other (Anatolian Teacher Training High School, Science High School, Open Education High School)	6.4

When the characteristics of the working group are examined, it is seen that the majority of the participants are female. Most of prospective teachers in education faculties and preschool education consist of women (Çevik & Yiğit, 2009; Erkan, et al., 2002). Most of the participants are between the ages of 19-21 and approximately half of them are Anatolian High School graduates.

## 2.2. Process of Research

The study took place during the Instructional Technologies and Material Development course carried out by the first researcher. During this course, prospective teachers were asked to develop concrete teaching materials for the determined outcomes and it was stated that the material development process would be performed through group work. It was also stated that the materials prepared by the groups would be presented in a preschool education institution through an instructional design was among the requirements of the course. Information about the course process and features for the materials to be developed were described in detail.

When students choose their own groups, student satisfaction for group work is higher (Chapman, Meuter, Toy & Wright, 2006). Therefore, participants were not intervened during the process of forming their groups; who and how many students would be in the groups and planning for group work were left to the preferences of the participants.

The group work process started with the creation of the groups in the third week of the Spring semester and continued until the end of the semester for 11 weeks. Group work was conducted in the classroom as well as outside the classroom. The researchers followed up the studies of the groups every week regularly and gave feedback. The groups presented the materials they prepared in a pre-determined preschool educational environment where students and teachers existed through the instructional design.

### **2.3. Data Collection and Data Collection Tool**

At the beginning of the research, it was planned to conduct individual interviews with some students who participated in group work and accordingly, a semi-structured interview form was prepared. However, since it was thought that it would be more meaningful for this research to get the opinions of all students participating in the group study based on their experiences, it was decided to collect the data through a questionnaire. Questionnaires are data collection tools that provide relative speed and economy in reaching a large number of views with different perspectives (Hohmann & Mamas, 2015).

The data of the research were collected through the "Group Work Questionnaire" prepared by the researchers. The data collection tool consisted of four parts. There were questions about the personal information in the first part; the experience, preference and structuring process of group work in the second part; the conduct of group work in the third part; and the evaluation of group work in the fourth part. In studies where case study design is used, data collection generally requires the use of a wide variety of sources of questions, which can include both quantitative and qualitative data (Teddlie & Tashakkori, 2015). The questionnaire included two-choice questions (e.g., "Did you participate in a group work before the Instructional Technologies and Material Design course?"), short-answer questions (e.g., "How many people did you integrate in groups, including yourself?"), multiple-choice questions (e.g., "How did group work affect your success in the course of Instructional Technologies and Material Design?" A) I think group work led to a decrease in my pass mark. B) I think group work did not lead to any change in my pass mark. C) I think group work led to an increase my pass mark.), open-ended questions (e.g., "What were the determinants when selecting your groupmates?"), and graded questions (e.g., "Evaluate your rapport within the group (Very low- 1, 2, 3, 4, 5- Very high).

The opinions of three experts working in the Faculty of Education were received to ensure the content validity of the prepared questionnaire. In accordance with the expert opinion, questions and options for some questions were re-grouped and the questionnaire consisting of 30 questions was finalized. The Group Work Questionnaire was organized on Google Forms and sent to the e-mail addresses of prospective teachers after the course process was over and students were given grades for the course. The questionnaire was responded with the voluntary participation of the student, and there was no information to introduce the student in the questionnaire.

### **2.4. Data Analysis**

Frequency analysis of descriptive statistics was used in the analysis of the quantitative data obtained from the questionnaire. Qualitative data were analyzed using descriptive analysis. In the descriptive analysis, open-ended questions included in the questionnaire were evaluated as themes. During the descriptive analysis, the two researchers came together and coded the first fifteen questionnaires together. In this process, categories and sub-categories were written under the themes determined. The researchers coded the remaining questionnaires individually, considering the categories and subcategories they wrote together, and then examined each other's codes. Fourteen codes were changed and clarified as a result of the researchers' negotiations. In the study, 11 categories and 75 sub-categories emerged. The analyzed data were presented in tables. The views of the participants regarding the most repeated or remarkable sub-categories in each category were stated through direct quotations. Interrater reliability (Miles & Huberman, 1994) was calculated as 90.35. Miles and Huberman (1994) recommend an agreement of 80% to ensure consensus among coders. It can be said that the research is consistent according to the interrater reliability score obtained.

### 3. Results

In this section, findings regarding the prospective teachers' experiences, preferences, structuring, conducting and evaluation of group work were presented with frequency values; and the opinions of prospective teachers were supported with direct quotations.

#### 3.1. Experiences and Preferences of Prospective Teachers Regarding Group Work

Under this heading, information about prospective teachers' participation in group work, the number of people in the groups formed within the scope of the research and the gender distribution of the groups are presented.

Table 2. *Experiences and preferences for group work*

Variables	f
Participation in group work before	
Yes	48
No	14
Number of people in the group	
3	37
2	17
4	8
Gender distribution of the group	
Females	48
Both females and males	8
Males	6

When Table 2 is examined, it is seen that 48 of the prospective teachers participated in the group work before; and 14 of them did not participate in the group work before. When the number of people in the groups that the prospective teachers participated in is examined, it is determined that 37 people were in the groups of 3 people; 17 people were in the groups of 2 people; and 8 people were in the groups of 4 people. When the gender distribution of the groups is examined, it is seen that the group in which 48 people participated consisted of only females; the group in which 8 people participated consisted of both females and males; and the group in which 6 people participated consisted of only males.

#### 3.2. Prospective Teachers' Structuring Process of Group Work

Under this heading, information about the reasons that are decisive in the selection of the groupmate, the planning and division of tasks related to group work, the determining factors in sharing tasks and the frequency of group members coming together are presented.

Table 3. *Decisive reasons in the selection of group mate*

Reasons	f	Opinions of Prospective Teachers
Internal	47	
Being close friends	21	<i>"His/her being my close friend."</i>
Getting along well	17	
Sincerity	9	
External	15	
Seeing out of school	3	<i>"Probability of meeting outside of school. The closeness of the dormitories we stay in."</i>
Being responsible	2	
Hand skills	2	
Rapport	2	

Working style	1
Cooperation	1
Practical Intelligence	1
Trust	1

When Table 3 is examined, the reasons that were decisive in the prospective teachers' selection of the groupmate were considered internally and externally; and it was determined that internal reasons ( $f=47$ ) were more effective in choosing groupmates. The internal reasons that were effective in the selection of prospective teachers' group mates were respectively being close friends ( $f=21$ ), getting along well ( $f=17$ ) and sincerity ( $f=9$ ). The external reasons that were effective in the selection of prospective teachers' group mates were respectively seeing out of school ( $f=3$ ), being responsible ( $f=2$ ), hand skills ( $f=2$ ), rapport ( $f=2$ ), working style ( $f=1$ ), cooperation ( $f=1$ ), practical intelligence ( $f=1$ ) and trust (1).

Table 4. *Planning and division of tasks before group work*

Variables	f
Planning	
Yes	53
No	9
Division of tasks	
Yes	52
No	9

When prospective teachers' planning and division of tasks before group work are examined in Table 4, it is seen that 53 of the prospective teachers stated that they planned before the group work, while 9 of them stated that they did not. As to the division of tasks, 52 of the prospective teachers stated that they divided the tasks, while 9 of them stated they did not.

Table 5. *Factors determining the division of tasks before group work*

Factors	f	Opinions of Prospective Teachers
Individual interests, skills and abilities	38	<i>"Everyone worked on the areas that they were talented. 3 materials were prepared, everyone completed the main features of one material individually and finally we finished them together."</i>
Equality	22	
Not done	2	

When prospective teachers' opinions regarding the factors determining the division of tasks before group work in Table 5 are examined, it is seen that individual interests, skills and abilities ( $f=38$ ) came first, followed by equality ( $f=22$ ); and 2 prospective teachers stated that they did not divide the tasks.

Table 6. *Frequency of group members coming together*

Weekly time	f
1 day	9
2-3 days	31
4-5 days	3
7 days	13

When the frequency of group members coming together in Table 6 is examined, it is seen that 9 of the prospective teachers stated they came together once a week; 31 of them stated two or three days a week; 3 of them stated four or five days a week and 13 of them stated 7 days a week.

### 3.3. Prospective Teachers' Conducting Process of Group Work

Under this heading, information about the problems faced by prospective teachers in the group work process and the solutions generated for these problems, the effects of the unsolved problems on the group members and the work are presented.

Table 7. *Problems encountered during group work*

Problems	f	Opinions of Prospective Teachers
Inability to make a mutual decision	17	<i>"We couldn't decide what kind of material to create."</i>
Inability to find a common time	11	
Disagreement among group members	9	<i>"Since we two were closer, we had some problems with our other friend. She changed the decisions we made together at the beginning, without asking us."</i>
Social loafing	4	

When Table 7 is examined, it is determined that 17 of the prospective teachers evaluated having problems in making mutual decisions during the group work, 11 of them evaluated having problems in finding common time, 9 of them evaluated having disagreements within the group and 4 of them evaluated social loafing as the problems encountered.

Table 8. *Solutions generated for the problems encountered*

Solutions	f	Opinions of Prospective Teachers
Doing research	13	<i>"We did a lot of research. We got help from the internet and teachers, and we brainstormed."</i>
Talking, exchanging ideas	11	
Spending more time	7	
Inability to find a solution	6	
Cooperation and task division	5	

When prospective teachers' solutions to the problems they encountered in Table 8 are examined, it is seen that 13 of the prospective teachers stated they did a lot research, 11 of them talked and exchanged ideas, 7 of them spent more time and 5 of them cooperated and shared tasks in order to generate solutions. 6 of the prospective teachers stated that they could not find a solution.

Table 9. *Effects of unsolved problems on group members and work*

Evaluations	f	Opinions of Prospective Teachers
Experiencing negative emotions	5	<i>“There were quarrels and I took line with the least resistance. It affected me negatively.”</i>
Decrease in working efficiency	2	
Dissatisfaction with the work done	2	

When effects of unsolved problems on group members and work in Table 9 are examined, it is seen that 5 of the prospective teachers experienced negative emotions; 2 of them experienced a decrease in their working efficiency; and 2 of them were dissatisfied with the work they had done.

### 3.4. Prospective Evaluations of Prospective Teachers Regarding Group Work

Under this heading, information about the prospective teachers' opinions regarding the advantages and disadvantages of group work, preference and reasons for choosing group work in the future, evaluations about their friends after group work, opinions about getting the same pass mark with group members, their self-evaluations about pass marks, the feelings caused by group work and their group performance evaluations are presented.

Table 10. *Advantages of group work*

Advantages	f	Opinions of Prospective Teachers
The emergence of different ideas	22	
Collaboration	18	<i>“It teaches us to collaborate and helps us get to know each other better. We learn to say ‘we’ rather than ‘I’; and I think we get a better result thanks to mutual interaction.”</i>
Cooperation and sharing	12	
Saving time	10	
Creative and pleasant products	9	
Gaining awareness of responsibility	7	<i>“It enabled us to behave in accordance with the awareness of the responsibility given to us.”</i>
Better understanding and knowing of friends	7	
Less workload	4	
Learning new things from your friends	4	<i>“Thanks to group work, we learned not only from homework but also from our friends.”</i>
Socializing	2	

When prospective teachers' opinions about the advantages of group work in Table 9 are examined, it is seen that 22 of the prospective teachers considered the emergence of different ideas, 18 of them considered collaboration, 12 of them considered cooperation and sharing, 10 of them considered saving time, 9 of them considered creative and pleasant products, 7 of them considered responsibility, 7 of them considered better understanding and knowing of friends, 4 of them considered less workload, 4 of them considered learning new things from friends, and 2 of them considered socializing as the advantages of group work.

Table 11. *Disadvantages of group work*

Disadvantages	f	Opinions of Prospective Teachers
Social loafing	15	<i>"Not everyone works with the same workload, someone gets more work. Responsibility is imposed on the person who is slightly better than others."</i>
Difficulty in coming together	15	
Emergence of disagreements	14	
Experiencing conflicts	7	
Unfair task division	7	
Decrease in group performance	2	
Common assessment	2	
Being tiring and wearing	1	

When prospective teachers' opinions about the disadvantages of group work in Table 11 are examined, it is seen that 15 of the prospective teachers considered social loafing, 15 of them considered difficulty in coming together, 14 of them considered emergence of disagreements, 7 of them considered experiencing conflicts, 7 of them considered unfair task division, 2 of them considered decrease in group performance, 2 of them considered common assessment and 1 of them considered being tiring and wearing as the disadvantages of group work.

Table 12. *The way of studying to be preferred in the next processes and its reasons*

The way of studying	f	Opinions of Prospective Teachers
Group work	33	
More efficient studies	17	<i>"Group work, because I believe working with the group instead of doing something alone will bring better results."</i>
More cooperation	5	
More fun	4	
Less workload	3	
Improving friendship relationships	3	
Individual work	25	
Applying your own ideas	14	<i>"My preference is individuality because I think I can easily reflect my own ideas to my work."</i>
Irresponsible behaviors of group members	5	
More comfortable studying	5	
More effective use of time	4	
Individual assessment	2	<i>"I do it myself, and I get my own assessment in return for my effort. I do not prefer anybody to be assessed with my individual effort."</i>
Both	2	
Depends on the assignment or the project	2	<i>"I prefer both, because we cannot do every activity with groups."</i>

When the ways of studying which prospective teachers will prefer in the next process in Table 12 are examined, it is indicated that 33 of the prospective teachers would prefer group work and 25 of them would prefer to study individually. It was seen that 17 of the prospective teachers stated they would prefer group work in the next process because it was more efficient;

5 of them would prefer it because there was more cooperation; 4 of them would prefer it because it was more fun; 3 of them would prefer it because there was less workload; and 3 of them would prefer it because it helped improve friendship relationships. It was seen that 14 of the prospective teachers stated they would prefer studying individually in the next process because of applying their own ideas; 5 of them would prefer it because of irresponsible behaviors of group members; 5 of them would prefer it because of studying more comfortably; 4 of them would prefer it because of using time more effectively; and 2 of them would prefer it because of getting assessed individually. 2 of the prospective teachers stated that they could prefer both ways of studying, depending on the assignment or project.

Table 13. *Evaluations about friends after group work*

Evaluations	f	Opinions of Prospective Teachers
Not changed	22	<i>"There was no change because we were intimate friends before."</i>
Changed	12	
Thinking differently about them	5	<i>"My opinion about only one person changed. It is because he/she took individual decisions though we were a group; thus I got a negative impression."</i>
Getting to know your friends better	4	
Thinking that responsibilities are not discharged	3	
Deciding not to be in the same group with some people	2	
No more talking to some people	2	
Enjoying working together	1	

When prospective teachers' evaluations about their friends after group work in Table 13 are examined, it is seen that 22 of the prospective teachers stated that there were no changes in their friendship and 12 of them stated there were changes. 5 of the prospective teachers who thought that they had a change in their friendship stated that they thought differently about their friends; 4 of them stated that they knew their friends better; 3 of them stated that they did not discharge their responsibilities; 2 of them stated that they decided not to be in the same group with some people; 2 of them stated that they did not prefer to talk to some people anymore; and 1 of them stated that they enjoyed working together.

Table 14. *Opinions about group members' getting the same pass mark*

Evaluations	f	Opinions of Prospective Teachers
Appropriate	39	
Fair	25	<i>"I think it's fair because we're all making the same material and making the same effort."</i>
Equal	10	
Logical	4	
Not appropriate	25	
Unfair	20	<i>"I think it's unfair because everyone doesn't make the same effort."</i>
Unjust	5	

When Table 14 is examined, it is seen that 39 of the prospective teachers thought that it was appropriate for the group members to get the same pass mark; and 30 of the prospective teachers thought that it was not appropriate. 25 of the prospective teachers who thought that it was appropriate for the group members to get the same pass mark stated that this was fair; 10 of them stated it was equal; and 4 of them stated it was logical. 20 of the prospective teachers who thought that it was not appropriate for the group members to get the same pass mark stated that it was unfair and 5 of them stated it was unjust.

Table 15. *Self-evaluation on the pass mark*

Opinions	f
I think group work led to an increase in my pass mark	30
I think group work did not lead to any change in my pass mark.	20
I think group work led to a decrease in my pass mark.	12

When Table 15 is examined, it is determined that 30 of the prospective teachers thought that group work led to an increase in their pass mark; 20 of the prospective teachers thought that the group work did not lead to any change in their pass mark; and 10 of the prospective teachers thought that the group work led to a decrease in their pass mark.

Table 16. *The emotions caused by group work*

Emotions	f	Opinions of Prospective Teachers
Positive	73	
Happiness	25	<i>"In some moments, I got my group friends' ideas and help, which made me happy."</i>
Belief in collaboration	21	
Self-reliance	14	
Excitement	10	
Pride	2	
Sincerity	1	
Negative	10	
Sadness	5	<i>"Group work is always tiring. It is very exhausting that people do not spare the time you do and judge what you do by finding excuses."</i>
Anger	3	
Anxiety	2	

When Table 16 is examined, it is determined that prospective teachers felt more positive emotions ( $f=73$ ) in group work; while 10 of the prospective teachers stated that they felt negative emotions. Happiness ( $f=25$ ) took the first place among positive emotions, followed respectively by belief in collaboration ( $f=21$ ), self-reliance ( $f=14$ ), excitement ( $f=10$ ), pride ( $f=2$ ) and sincerity ( $f=1$ ). When negative emotions are examined, first sadness ( $f=5$ ), then respectively anger ( $f=3$ ) and anxiety ( $f=2$ ) were among the emotions that prospective teachers felt in group work.

Table 17. *Evaluation on group performance*

Criteria	Very Low	Low	Medium	High	Very High
	f	f	f	f	f
Ingroup rapport	2	1	6	22	31
Ingroup creativity	1	4	9	25	23
Ingroup responsibility	3	4	4	10	41
Effective use of time	2	6	8	10	36
Ingroup communication	2	2	6	15	37

When the evaluations on group performance of prospective teachers are examined in Table 17, it is determined that as regards to ingroup rapport, majority of the prospective teachers considered themselves in a very high harmony; as to ingroup creativity, 25 of them defined their creativity was at a high level; as to ingroup responsibility, 41 of them considered themselves quite responsible; as to effective use of time, 36 of them considered themselves at a very high level; and as to ingroup communication, 37 of them stated that their communication in the group was very high.

#### 4. Conclusion, Discussion and Suggestion

The majority of the participants preferred to work in groups of three people and only in groups consisted of people of the same gender. However, studies have revealed that mixed-gender groups perform better (Orlitzky & Benjamin, 2003) and exhibit enhanced collaboration compared to single-gender groups. Mixed gender groups can create different interactions and lead to mutual support and compatibility (Takeda & Homberg, 2014). For group work, it may be suggested to form heterogeneous groups in terms of gender.

Internal reasons such as sincerity, being close friend and getting along well were more effective determinants in the participants' selection of their groupmates. This result is in line with other research results (Kalaycı, 2008; Mamas, 2018; Williams, Guy, & Shore, 2019). In this regard, it can be said that leaving the choice of the groups to the preference of prospective teachers has a positive effect on the group work process.

At the beginning of the group work, the majority of the participants stated that they did planning regarding time and task division. In contrast to this result, in the study conducted by Kalaycı (2008), it was observed that the groups did not prepare a time schedule and did not immediately divide the tasks with the idea that they would not stick to the schedule.

While dividing tasks in group work, the skills and abilities of the group members and the equal and fair distribution of responsibilities were taken into account. In the study of Kalaycı (2008), the abilities of the group members, the desires of the members for the work and the closeness of the students who would perform the same task were effective in dividing the tasks. When the results of these studies are evaluated together, it can be said that group members adopt a task-oriented and equity-based strategy of task division.

The majority of the participants came together two or three days a week for group work. It is seen that timing is important in group formation and planning, and it is taken into consideration by prospective teachers in group work. In the study of Koç-Erdamar and Demirel (2010), it was revealed that the group members had difficulties in finding time to come together outside the class. Based on these results, it can be said that time management is crucial in group work and prospective teachers need to work more planned in this regard.

The main problems encountered during group work were decision-making problems, inability to manage time, disagreements between group members and social loafing. The main

problems encountered in the previous research carried out on group work were social loafing, the shy students' remaining in the background as a result of the fact that the students who were active affected the others negatively, in-group disputes and not sharing information within the group (Arslan, Taşkın & Kirman-Bilgin, 2015; Büyükgöze & Demirkasımoğlu, 2018; Koç-Erdamar & Demirel, 2010; Mello, 1993). Failure to solve such problems causes the group to perform less efficient (Piezon & Ferree, 2008). Although the members of the group considered the factors such as researching, exchanging ideas, and helping each other in the solution of the problems encountered, some problems remained unsolved. That the problems encountered in the group work process are solved by the students enables them to improve their ability to cope with the problems; however, it is also important that educators should not be out of the process. So as to reduce the likelihood of problems occurring in group work, it can be recommended that educators guide the formation of groups and group rules, planning for time and division of tasks, effective communication, decision making in a democratic way and problem solving, discussing ideas rather than individuals, and evidence-based reasoning.

Cooperation, emergence of different ideas, saving time, decreased workload, emergence of creative products, learning from each other, development of group consciousness and increased interaction were seen as the benefits of group work by participants. The cognitive and affective positive effects of group work on students are similarly emphasized by many studies (Butt, 2018; Çakmak, 2014; Delice & Taşova, 2011; Diaz-Pareja, et al., 2017; Fung & Howe, 2012; Koç-Erdamar & Demirel, 2010 Volkov & Volkov 2015; Yanpar-Yelken, 2009; Yasul & Samancı, 2015). The development of such features / skills is crucial in terms of preparing prospective teachers for their professional lives.

Social loafing, disagreements, not fulfilling responsibilities, slow down each other, disputes among group members, decreased group performance, and the inability of the members to get the scores they deserve were evaluated as the negative sides of the group work. Failures experienced in group work are often caused by social loafing behaviors (Takeda & Homberg, 2014). In the research of McCorkle, Reardon, Alexander, Kling, Harris, and Iyer (1999), more than 65 percent of students stated that they experienced social loafing in their groups. As the group size increases, individual productivity may decrease and students' indifference may trigger social loafing (Chidambaram & Tung, 2005). Additionally, the self-perception and experiences of a group member can cause social loafing behavior and have a negative effect on the performance of the other group members (Büyükgöze & Demirkasımoğlu, 2018). As the number of people in a group increases, one can think that the effect of him will not be noticeable and he can make less effort. In the experiment of rope pulling carried out by Max Ringelmann in 1883, it was observed that the performance of the group members decreased as the number of people in the group increased. Assuming that the performance of individuals was 100% when they were alone, their performance decreased to 93% when there were two people, to 85% when there were three people, and to 49% when there were 8 people. The fact that as the number of people in the group increases, the performance of group members decreases is called the Ringelmann effect today (Ingham, Levinger, Graves, & Peckham, 1974). Peer assessment is suggested by studies (Baker, 2008; Cheng & Warren, 2000) to deal with social loafing behavior in group work and it is shown to be effective in group work (Brooks & Ammons, 2003; Chapman & van Auken, 2001; Cheng & Warren, 2000). In addition to this suggestion, it can be offered for the educator to conduct individual interviews with students for formal evaluation during the group work process.

Most of the participants stated that they would prefer group work in their future studies; whereas, nearly half of the participants stated that they would prefer studying individually. The fact that participants have negative group work experience is effective in their preference of individual studying rather than group work in their future lives (Chapman & van Auken, 2001;

Koç-Erdamar & Demirel, 2010; OECD, 2017; Piezon & Ferree, 2008). There are also cases where group work may not be suitable for all students. Personality traits (introversion, extraversion) and attachment styles play a role in individuals' group work preferences and the effectiveness of group work (Lavy, 2017; Rom & Mikulincer, 2003). People experiencing anxious attachment can feel themselves worthless, helpless and vulnerable in group work and have problems in effectively demonstrating their performance in group work, and even see group work as a source of stress (Rom & Mikulincer, 2003). Therefore, although students should be encouraged to participate in group work, it can be suggested that students should not be forced and group work should not be shown as the only option in education. Sander, Stevenson, King & Coates (2000) stated that students' expectations and preferences will provide a basis for evaluating the results of the next lesson or study and that students should be provided with the opportunity to do so.

After group work, problems occurred in friendship relationships of about one-fifth of the participants due to group work. In the study of Koç-Erdamar and Demirel (2010), it was stated that there were conflicts among the group members and that situation caused problems in the group. Disagreements between group members and problems in friend relations cause their desire of studying to decrease and this situation reflects unqualifiedly on the resulting products. When the problems in friendship relations are not resolved, prospective teachers move away from each other emotionally and feel that they are not understood. According to the result of the study conducted by Spalding, Ferguson, Garrigan & Stewart (1999), one of the important problems in group work was the social integrity of the groups; it was emphasized that where this worked, students developed learning experiences without being deprived of an effective learning experience. According to the result of the study carried out by Makewa, Gitonga, Ngussa, Njoroge & Kuboja (2014), many problems occurred because of the attitudes of the students towards learning and previous experience; it was revealed that students who were independent and expected to work at their own pace had difficulties in collaborating with their friends who had different priorities and working habits, and they experienced disappointment. The necessary sense of group integrity can be gained by successfully negotiating these conflicts between group members and bringing them under control for further development. It is important that the individual reaches a point where he experiences himself as a unique entity within the group, he can contribute to the group without having to be proponent or opponent and does not feel threatened (Cartney & Rouse, 2006). Preparing the student for collaboration through the teaching and development of the social and group skills necessary to work effectively in a group will positively affect group work. Therefore, educators may be advised to take time to motivate group members to interact with each other during group work.

While most of the prospective teachers thought that getting the same pass mark with the group members as a result of the group work was fair, some of them stated that it was not fair. Parsons & Drew (2006) stated in their study that shifting the balance of power to students in determining the structure and organization of the groups and controlling the assessment affected the group performance. In the study of Salomon and Globerson's (1989), it was revealed that some students who did not contribute to the group in any way received a good grade because they were found to be successful in the group; and that successful students did not want to continue their group studies. Similarly, in the study conducted by Koç-Erdamar and Demirel (2010), it was determined that prospective teachers considered getting the same grade with the group members as one of the important problems of group work; and they were not satisfied with getting the same score with the whole group. In this regard, it seems very crucial to make the group members feel better and to appreciate the knowledge and skills they possess and acquire in the process through different evaluation methods. However, more

studies can be carried out to understand the impact of ingroup evaluations on group members' work on individualization and how they can affect the distrust that occurs during the process.

Group work can help students achieve specific learning and social interaction goals in structured groups when used properly as a teaching strategy. It can also promote social interaction to facilitate knowledge building (Makewa et al., 2014). Research shows that social contact among students is important for learning experiences (Longhurst, 1999; Sander, Stevenson, King & Coates, 2000). When group work is carefully and appropriately designed and monitored, learning within the group is a valuable experience; and collaboration of students can increase their achievements more than traditional learning methods (Livingstone & Lynch, 2002; Makewa et al., 2014). Therefore, it is recommended to include group work in different classes in order for the correct use of group works, which contribute to the development of solidarity, responsibility, interaction, social skills and the ability to manage the process, by the prospective teachers who will be the future teachers.

### **5. Conflict of Interest**

The authors declare that there is no conflict of interest.

### **6. Ethics Committee Approval**

The authors confirm that the study does not need ethics committee approval according to the research integrity rules in their country.

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