



## Research Article

# Investigation of the relationship between gifted students' attitudes to collaborative learning and their perfectionist structure<sup>1</sup>

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### Abstract

The aim of this study is to examine the relationship between gifted students' attitudes towards cooperative learning and their perfectionist structures and to investigate the views of gifted students on perfectionism and cooperative learning. This research is a mixed method research. Relational survey design was used in the quantitative part of the study. The relationship between the perfectionism levels of gifted students and their participation in cooperative learning environments was examined. In the qualitative part of the study, case study was used. By making more detailed examinations with semi-structured interview questions, it is aimed to touch on the perfectionist structures of gifted students and the reasons underlying the basic thoughts that affect whether they want to participate in cooperative learning environments or not. The sample of the research consists of 5th grade 242 gifted students studying at Science and Art Centers in Istanbul. In data collection, the Attitude Scale of Gifted Students towards Cooperative Learning and the Compatible-Incompatible Perfectionism Scale to determine their level of perfectionism. As a result of the research, it can be stated that students' attitudes towards cooperative learning are high, adaptive perfectionism is high, and maladaptive perfectionism is low. In the study, it was determined that there was a weak, positive and significant relationship between students' adaptive perfectionism and their attitudes towards avoidance and cooperative learning. It was determined that there was a moderate, positive and significant relationship between students' adaptive perfectionism and disposition. Accordingly, it can be said that as adaptive perfectionism increases, attitudes towards avoidance, disposition and cooperative learning increase. It was determined that adaptive perfectionism was a significant predictor of students' attitudes towards cooperative learning scale avoidance and disposition sub-dimension and attitude scores towards cooperative learning. According to this result, it can be said that the avoidance sub-dimension scores in their attitudes towards cooperative learning can be predicted by examining the adaptive perfectionism scores or situations of the students. Findings obtained semi-structured interview questions show that students have positive and negative attitudes towards cooperative learning and perfectionism. In line with the findings, suggestions are presented.

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## Introduction

Throughout history, one of the most important skills that humanity has used to find solutions to problems and meet

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their needs is undoubtedly working in cooperation. Among the elements that have not changed in the development processes of civilizations, it is seen that the habit of human beings to cooperate has not changed. It is not possible for a human being to meet all his/her needs alone. In primitive times, people acted in cooperation even to meet their food needs. As technology developed and the world changed, they continued to work in cooperation to meet their different needs. This is actually the basis for the formation of professions. The development of societies has again paved the way for the emergence of needs. This has further increased the importance of cooperation.

Individuals who work collaboratively put their knowledge, skills and experience to work together for a common goal. During collaborative work, important trials such as becoming a member of the group in cooperation and solidarity and becoming aware of it are experienced (Johnson & Johnson, 1987). Among these individuals who work together for the same purpose, individuals who have different perspectives, are solution-oriented, think differently and impose their leadership on the group come to the forefront. This is because these individuals have different foresights, perspectives and abilities and they make you feel that they are different. Students who think differently, question, offer different solutions to problems, produce and grow up with the importance of development are of great importance for societies (Tanık Önal & Büyük, 2020). Talent is the performances exhibited in mental, musical, artistic, physical and social fields. It is observed that talented individuals are successful in their field. It is also observed that individuals with high IQ levels have high levels of talent. Therefore, it has been observed that individuals with high levels of talent also have high IQs. Based on this understanding, the discourses of "giftedness" and "giftedness" have been gathered under a single heading as "giftedness" (Bıçakçı, 2021). A gifted individual is someone who learns more quickly than his/her peers of the same age, has artistic, creative and leadership qualities, has academic talent in his/her field of interest, likes to act individually and independently, and performs at a high level (Ministry of National Education [MoNE], 2017). From pre-school to high school level, they are children who are intellectual, creative, have leadership qualities, and are highly talented in visual and applied fields (Bildiren, 2013: 22).

Contributing to the cognitive, affective, social and psychological development of gifted students by providing them with the necessary education is undoubtedly one of the goals of educators. When we look at developed societies, it is seen that future leaders, scientists, artists and athletes are formed by giving gifted students the opportunity to receive the necessary education (Grand National Assembly of Turkey [TBMM], 2013). Students who think differently, question, offer different solutions to problems, produce and grow up with the importance of development are of great importance for societies (Tanık Önal & Büyük, 2020). The fact that future generations are strong, highly educated and well-equipped will make a great contribution to the development of the country in technological, economic, political and military terms. These individuals, whom we define as gifted individuals, have always been remarkable within the group. However, if this difference is present in more than one member of the group, can the collaborative working environment really continue in accordance with its purpose? The expectation of this gifted individual, who stands out with his/her differences, to do a perfect job may create an environment of unrest in the group by facing the disapproval of the ideas of other individuals. Gifted students, who have a perfectionist structure, confuse the concept of being perfect with the effort to do their best. While trying to achieve their goals, they may exhibit behaviors such as withdrawing themselves, giving up, and not participating in the environment at all with the thought of "if I cannot achieve the desired result" (Davis, 2006). Anxiety about being perfect in the work to be done may cause an emotional burden on the person and a state of being closed to different ideas. Or, thinking that other members of the group have a more perfect structure than him/her may cause the gifted individual to stay away from these environments. As a result of all these, the group dynamics may be negatively affected.

Science and Art Centers (SAC [Bilim Sanat Merkezi-BILSEM]) affiliated to the Ministry of National Education (MoNE) are special education institutions where gifted students who perform at a higher level than their peers in intelligence, creativity, art, leadership and other academic fields receive education in line with their abilities and needs. The centers were established in 1992 by the General Directorate of Special Education, Guidance and Counseling Services of MoNE (Baykoç Dönmez, 2004). One of the aims of the institution is to increase students' creativity, scientific work discipline, interdisciplinary thinking skills, questioning and the capacity to offer solutions for needs, and to enable

them to participate in project production and development activities. Activity programs prepared by taking interdisciplinary approaches into account are presented to students in an enriched form. In order for the student to actively participate in the process, learning by doing and experiencing is taken as a basis. The activities are based on project generation and development activities. There are also workshops where students can choose and receive training according to their interests and abilities (Science and Art Center Directive, 2019). One of the most important advantages of SACs is that it allows students to receive education in SACs outside of school without leaving their friends at school (Science and Art Center Directive, 2019).

The individual who opens his/her eyes to life at birth is exposed to constant, endless warnings by the adults around him/her in order to be ready for life and to stand on his/her own feet. The effort to teach the good and the right by parents in early childhood and by teachers in school may cause some individuals to raise their standards too high. It may cause the individual to strive to be perfect, sometimes under the influence of his/her parents and social environment, and sometimes as a result of the evolution of his/her own personal characteristics in that direction. As can be understood from the definition of this concept called perfectionism, individuals with perfectionist attitudes have goals that are difficult to achieve. If they fail to achieve these goals, they may have to cope with negative emotions such as guilt, insecurity, feeling of failure, and anxiety (Gökkaya, 2016; Leana Taşçılar et al., 2014).

Cooperative learning can be defined as a method of learning a subject by dividing students into small groups and working together for a common purpose in order to solve a problem or fulfill a task (Demirel, 2002). In cooperative learning environments, students try to solve the same problem by helping each other or getting help. They strive to produce a common product. Each individual has a responsibility in cooperative learning environments. Each individual tries to do his/her best to contribute to the group. During cooperative work, important trials such as helping a groupmate, learning from friends, and the pleasure of belonging to a group are experienced (Johnson & Johnson, 1987). Students in cooperative learning environments enjoy working together for a common goal. Students who realize that learning with their groupmates, completing their deficiencies, helping others, and being united will be able to gain the habit of supporting others or working by accepting the contribution of others in their future lives. "Strength comes from unity." With this understanding, they will gain the ability to fight against the difficulties they face in life.

In order for gifted students, who stand out more than their peers in every sense, to be in cooperative learning environments and to exhibit effective studies in this environment, the measures that can be taken against the problems they experience in cooperative learning environments should be among the main objectives of education and teaching. It should be ensured that they receive the necessary support against the difficulties and pressures they experience under the anxiety of being perfect. In order to direct students to cooperative learning environments, emotional and psychological guidance should be provided and educational environments should be organized according to their needs.

### **Importance of Research**

Perfectionism is a way of thinking that wears the individual out with its "all or nothing" way of thinking. Individuals with this mindset tend to have high standards. In the perfectionism found in gifted students, they attach more importance to every situation than necessary with the obsession of doing the best in their work and responding to the expectations of their social environment at the highest level. This situation creates anxiety in the individual. When this anxiety reaches a high level, it is inevitable to encounter some negative situations. Unfortunately, this excess can sometimes manifest itself in the form of failure or not starting the work that needs to be done or not being present in that environment. Because there is no such thing as an individual being perfect all the time. A gifted child who works at a high level to be the best in everything they do may give up trying and working as soon as they realize that they cannot always be perfect as a result of this effort (Davis, 2006).

Cooperative learning is defined as a method of learning a subject by students who are divided into small groups to solve a problem situation or fulfill a task, working together for the same purpose (Demirel, 2002). There is group work in cooperative learning. Students work in interaction with each other by distributing tasks and taking responsibility. Thanks to group dynamics, students can share this burden as a group instead of facing the positive or negative consequences of their work alone. As students work by doing-living and communicating, learning becomes effective

and enjoyable. Using the cooperative learning method, which is so important, in the educational environment is a very preferable method for us teachers.

In this direction, the participation of gifted students in collaborative learning environments and their perfectionist structures have been examined in national and international literature.

Within the framework of the studies, it is seen that the focus is on the perfectionist structures of gifted students (Kahraman & Pedük, 2014; Leana Taşçılar et al., 2014). There are no examples in the literature on whether the perfectionist structures of gifted students affect collaborative learning.

In the context of this information and the gap in the literature, examining the relationship between the perfectionist structures of gifted students and their attitudes towards collaborative learning environments and finding out how perfectionist structures predict their attitudes towards collaborative learning will pave the way for the organization of the educational environments of gifted students and planning to ensure that they receive support in this direction.

In addition to contributing to the literature as a different study, it will pave the way for SAC teachers to organize trainings on ways of coping with perfectionism and ensuring the participation of gifted students in collaborative learning environments while planning seminars and in-service trainings.

The purpose of this study is to examine the relationship between gifted students' attitudes towards cooperative learning and their perfectionist constructs, and the views of gifted students towards cooperative learning and perfectionism.

### **Studies in the Literature**

In this part of the study, national and international studies on gifted students, cooperative learning and the perception of perfectionism in gifted students are included.

#### **National Studies**

In this part of the study, national studies on gifted students, cooperative learning and perfectionism in gifted students are presented in chronological order.

#### **National research on gifted students**

In the study titled "Special Talented Student Workshop" (Akbüer et al., 2019), the problems of specially talented students were discussed and what can be done to find solutions to these problems were discussed. 168 Science and Art Center' students from 48 provinces participated in the study. At the end of the workshop, it was seen that gifted students were able to offer solutions to their own problems. In this way, it was concluded that these workshops for gifted students can be used as a method in academic studies.

Ünal and Sak (2020) study titled "The Extraordinary Ones: Lonely Adolescents with Special Talents", the study focused on the reactions of gifted students in the educational environment and in their classrooms and whether these reactions push them to loneliness. At the end of the research, it was shown that gifted students are exposed to reactions such as jealousy and exclusion by their peers because they think differently from their peers, have higher level skills, and are more successful and talented. As a solution to this problem, it was concluded that gifted students should be brought together with other gifted individuals on a full-time or part-time basis to provide more opportunities for socialization.

In their study conducted by Epçaçan and Oral (2019) investigated the issue of "Opinions of Gifted Students on Teaching Practices in Bilsem". 56 gifted students participated in the study. As a result of the research, it was concluded that the education students received from SACs improved their self-confidence, increased their problem-solving skills, and contributed to their desire to research and discover.

Çetin and Ünsal's (2020) study titled "Understanding the Gifted Student" is a case study. Observation, interview and document analysis methods were used in the study data. The study focused on the identification process of a gifted student, his/her characteristics, the reflection of these characteristics on education and what the teacher can do for his/her development. At the end of the study, it was observed that gifted students learn faster and easier than their peers, ask more questions, are more curious and inquisitive, and have higher level cognitive skills. They were also found to be environmentally sensitive, attentive, responsible and rule-abiding students. Differently, it was concluded that they

overreacted to failures and were ambitious. In the educational environment, it was concluded that they competed for power with their teachers, led their friends, tried to direct them, and were the students who attracted attention and were envied in the classroom. It was concluded that the teacher should make the student feel valuable with questions and activities that will attract his/her interest in the educational environment.

In their study conducted, Ataş and Sirem (2020) examined the peer relations of gifted students in terms of teacher views. Eight teachers teaching at SACs in 2019-2020 participated in the study. Semi-structured interview questions were used as data collection tools in the study. As a result of the research, it was concluded that gifted students are in the ambition to win, spoiled, adherence to rules, leadership, desire to be understood, and desire to be the best in friendship relationships. It was found that female students were more active in social relationships than male students.

Nacaroğlu (2020) conducted a study titled "Investigation of 21st Century Skills of Students with Special Talents and Normal Development". 201 gifted and 300 normally developing students participated in the study. "Multidimensional 21st Century Skills Scale" was used in the research conducted with quantitative research method. At the end of the study, it was concluded that 21st century skills were higher in gifted students compared to children with normal development.

### **National studies on cooperative learning**

Bilgin and Gelici (2011) conducted a research study on "Introduction of Cooperative Learning Techniques and Investigation of Student Opinions" with 116 7<sup>th</sup> grade students. Activities related to cooperative learning techniques were organized throughout the research. At the end of the research, open-ended questions were asked to get the opinions of the students and used as a data collection tool. As a result of the research, the students concluded that the lessons taught with cooperative learning techniques were more enjoyable, facilitated learning, improved their social skills more and that cooperative learning techniques should be applied in all lessons.

Kaya (2013) conducted a research titled "The Effects of Cooperative Learning and Peer Assessment on Academic Achievement, Metacognitive Ability and Helping Behaviors". 64 6<sup>th</sup> and 7<sup>th</sup> grade students attending a primary school in 2011-2012 academic year participated in the study. At the end of the research, it was seen that cooperative learning practices positively affected students' course achievement. It was also concluded that peer assessment had a positive effect on metacognitive ability in the activities in which peer assessment supported cooperative learning method was used. In addition, peer assessment did not have a positive or negative effect on expressing help expectations in cooperative learning method. Apart from peer assessment, cooperative learning environments are also considered useful because they provide students with the opportunity to ask for help.

Bilgin, Aktaş and Çetin (2014) conducted a study on "A Comparative Investigation of Teacher and Student Views on Cooperative Learning Techniques". The sample of the study consisted of 191 5<sup>th</sup> grade students and 6 classroom teachers. Student and teacher opinion forms were used as data collection tools. At the end of the study, it was concluded that cooperative learning environments increase students' achievement, motivation, attitude towards the lesson, social skills and self-confidence.

Genç and Şahin (2012) conducted a study on "The Effect of Cooperative Learning on Achievement and Attitude". The study group of the research consisted of 74 8<sup>th</sup> grade students. The students to whom activities and questionnaires were applied were divided into experimental and control groups. At the end of the research, while the effect of cooperative learning on academic achievement created a significant difference, there was no significant difference in attitude towards the course.

The study on "The Effect of Cooperative Learning Method on Scientific and Social Skills" was conducted by Arslan and Zengin (2016). In the study, the traditional method and cooperative learning method were compared in order to observe the development of scientific and social skills in the science teaching laboratory course to university students consisting of a group of 99 students. A pretest-posttest control group experimental design was used in the study. Data were collected through observation forms and semi-structured interview questions. At the end of the study, it was determined that the cooperative learning technique had a positive effect on social skills and scientific skills.

In the study titled "The Effect of Problem Solving Strategies Used with Cooperative Learning on Student Achievement" conducted by Yazlık and Erdoğan (2016), an experimental and control group of 71 9<sup>th</sup> grade students

were formed. In the experimental group, the subject of "Problems" was taught in a cooperative learning environment. In the control group, the same subject was taught with the traditional method. As a result of the study, it was concluded that cooperative learning environments have positive effects on mathematics course and problem solving.

### **National studies on perfectionism**

In a study conducted to evaluate the perfectionism dimension in gifted and talented children (Leana Taşçılar et al., 2014), gifted students between the ages of 10-13 were included in the study. While collecting the data, "Personal Information Form" was applied to determine the extent to which the children found themselves, their teachers and their parents to be perfectionists. In addition, the study was completed with the "Child Adolescent Perfectionism Scale" in order to determine the level of perfectionism. As a result of the study, it was observed that male students have higher scores than female students in the social-based sub-dimension. It was also concluded that the students found themselves and their families perfectionist.

A research study was conducted by Kahraman and Pedük (2014) to determine the perfectionism levels of 6th, 7th and 8th grade students. 181 students participated in the study. As a result of the study in which Positive and Negative Perfectionism Scale and Personal Information Form were used, it was concluded that the positive perfectionism level of female students was higher. In addition, it was observed that positive perfectionism increased as age and grade level decreased and negative perfectionism increased as age and grade level increased. Finally, it was seen that the education level of the father, but not the mother, did not affect the level of positive perfectionism.

Kaçmaz and Yıldız Demirtaş (2020) conducted a study to investigate to what extent self-regulated learning and self-efficacy affect adaptive perfectionism in gifted students. 187 gifted children participated in the study. As a result of the research using relational survey model, it was seen that self-regulated learning and self-efficacy significantly affected adaptive perfectionism.

Tamul (2019) investigated whether there is a relationship between perfectionism in gifted students and the attitudes of parents while raising children. Parenting Attitudes Scale and Multidimensional Perfectionism Scale were used in the study. As a result of the research, it was concluded that the perception of the father's acceptance/affection attitude decreased the level of perfectionism in the child, while the perception of the mother's excessive control and strict supervision attitude increased the level of perfectionism in the child.

Akgül and Nuhoglu (2020) investigated whether perfectionism levels affect the math anxiety of gifted students. A total of 121 students attending the 3rd and 4th grades of primary school participated in the study. As a result of the research conducted with quantitative research method, it was concluded that sensitivity to errors and conditional self-esteem, which are sub-dimensions of perfectionism, significantly affect anxiety towards mathematics course, which has a very important place in our lives.

### **International Studies**

#### **International research on gifted students**

Jeong (2010) conducted a research study on teachers' prominent perceptions and misconceptions about gifted children and the differences between these misconceptions. 119 teachers participated in the study. A 25-question questionnaire was used as a data collection tool. The results of the study showed that most teachers had correct understanding of the perceptions about gifted students. However, it was concluded that teachers had uncertainties about misconceptions. It was concluded that professional development should be continuous in order to eliminate misconceptions and understand research-based practices in gifted education.

Mofield and Peters (2019) investigated to what extent the characteristics of gifted and talented successful and unsuccessful students in terms of achievement attitudes, mindsets and dimensions of perfectionism are effective in their success. The sample of the study consisted of 264 gifted middle school students. As a result of the study, it was found that unsuccessful gifted students did not make efforts to achieve their goals and lacked self-regulation. On the other hand, it was concluded that both successful and unsuccessful students had confidence in their abilities. When they looked at the dimensions of perfectionism, it was seen that unsuccessful students had lower Positive Striving Perfectionism.

### **International research on cooperative learning**

Gull and Shehzad (2015) investigated the effects of cooperative learning on students' academic achievement. The sample of the study consisted of 63 female students attending 12th grade. As a result of the research, it was concluded that cooperative learning increased students' academic achievement at a positive level.

Teacher training in cooperative learning and its impact on inclusive education (Munoz-Martinez et al., 2020) conducted research on educators' perceptions of cooperative learning. 29 teachers and two counselors participated in the study. Data were collected using discussion groups, interview questions, questionnaires and documents. At the end of the study, it was concluded that the cooperative learning method positively affected individuals' emotional intelligence and social relationships.

### **International research on perfectionism**

Fletcher and Speirs Neumeister (2012) conducted a study on how perfectionism in gifted students affects their academic achievement. As a result of the research, it was concluded that perfectionism causes feelings such as anxiety, depression, worry about mistakes and fear of failure in gifted students. Wang, Chu-Chun, and Rice (2012) studied the relationship between perfectionistic dissonance and academic achievement and life satisfaction in gifted students. The sample of the study consisted of 144 gifted individuals attending 6th through 12th grades. As a result of the study, it was concluded that having high learning goals positively affected academic achievement.

Christopher and Shewmaker (2010) examined perfectionism in terms of affective variables in gifted students. As a result of the study, it was found that perfectionism may cause a tendency towards depression. It was concluded that it can cause problems such as loss of energy, insomnia, appetite problems and anxiety. It was suggested that teachers should receive different trainings in order to support the emotional development of gifted students.

In conclusion, when we look at the national and international literature on "giftedness", "cooperative learning" and "perfectionism", we see that gifted students' high level of perfectionism and their negative perfectionism attitudes increase as they grow older, causing them to face problems such as anxiety, stress and depression. In addition, the fact that gifted students, who think differently from their peers and have more talent, attract attention in their environment and have higher level achievements causes them to be envied and excluded by their peers. It is seen in the research results that the cooperative learning method facilitates learning in the educational environment and is a very useful method to strengthen social relations between students.

### **Research Question**

What is the relationship between gifted students' attitudes towards cooperative learning and their perfectionist structure and what are their views on cooperative learning and perfectionist structure?

Based on this main research question, the following sub-research questions were included.

### **Sub-questions**

- At what level are gifted students' attitudes towards cooperative learning and their congruent-incongruent perfectionism?
- Do the congruent-incongruent perfectionism scores of gifted students differ significantly according to gender?
- Do the attitude scores of gifted students towards cooperative learning differ significantly according to gender?
- Does adaptive- maladaptive perfectionism significantly predict gifted students' attitudes towards cooperative learning?
- Is there a relationship between gifted students' attitudes towards cooperative learning and their maladaptive perfectionism?
- Does adaptive- maladaptive perfectionism significantly predict gifted students' attitudes towards cooperative learning?
- What are the views of gifted students towards perfectionism and collaborative learning according to their attitude scores towards collaborative learning?
- What are the views of gifted students towards perfectionism and collaborative learning according to their congruent-incongruent perfectionism scores?

## Method

### Research Design

This study, which examines the relationship between gifted students' attitudes towards cooperative learning and their perfectionist constructs, is a mixed methods research. Mixed methods research is defined as combining qualitative and quantitative methods, approaches and concepts and using them together (Creswell, 2003; Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 1998). In this study, explanatory sequential design from mixed method research was used. When using explanatory sequential design, the aim is to strengthen or explain the data collected by quantitative method with the data collected by qualitative method (Yıldırım & Şimşek, 2013). The research was carried out in two stages and quantitative data were collected in the first stage and then qualitative data were obtained with the participant group selected using quantitative data.

In the quantitative part of the study, the relational survey design was utilized. Relational survey model is used to determine the existence and level of relationship between more than one variable (Karasar, 2016). The relationship between the perfectionism levels of gifted students and their attitudes towards participating in cooperative learning environments was examined. In the qualitative part, case study was used. According to Gerring (2007), a case study is an in-depth study of an existing situation in order to explain the situation in more detail. In the research, semi-structured interview questions were used to examine in more detail and the basic problems underlying the psychology of the student that affect the perfectionist attitudes of gifted students and their willingness to participate in cooperative learning environments were addressed. It is important to support the quantitative data obtained with qualitative data in order to support in-depth exploration of student views.

### Study Group

The population of the study consists of 5<sup>th</sup> grade gifted students who continue their education in Istanbul in the 2022-2023 academic year. The sample of the study consists of 5<sup>th</sup> grade gifted students studying in Science and Art Centers in Istanbul. While determining the sample of the study, the *convenience sampling method* was adopted. In cases where it is difficult to use other sampling methods, the *convenience sampling method* can be used (Fraenkel and Wallen, 2009). Since this study was conducted with a special group, 5<sup>th</sup> grade students studying at Science and Art Centers in Istanbul were selected as the sample.

Based on the quantitative data, qualitative data were collected by using the interview method with the students selected with the maximum diversity sampling method, which is one of the purposeful sampling methods. The aim of maximum diversity sampling is to create a relatively small sample and to reflect the diversity of individuals who may be a party to the problem situation being studied at a high level (Yıldırım & Şimşek, 2013).

### Participants

The distribution of the students to whom the scales were applied to obtain the quantitative data of the study according to gender and school type is given in Table 1.

**Table 1.** Characteristics of the students who participated in the study

Features		N	%
<b>Gender</b>	Female	117	48.35
	Male	125	51.65
<b>School Type</b>	State	101	41.74
	Special	141	58.26
<b>Total</b>		242	100

When Table 1 is analyzed, it is seen that 117 (48.35%) of the students are female (48.35%), 125 (51.65%) are male (51.65%), 101 (41.74%) continue their education in public schools and 141 (58.26%) in private schools.

The gender distribution of the students who were identified using the quantitative data obtained from the scale according to the maximum diversity sampling method within the framework of purposeful sampling used in qualitative research methods is given in Table 2.

**Table 2.** Characteristics of the students who participated in the qualitative data analysis

Levels	Gender	Low	Middle	High	Total
<b>Scales-Level</b>					
<b>Compatible</b>	Female	-	-	S4	1
<b>Perfectionism Scale</b>	Male	S6	S5	-	2
<b>Maladaptive Perfectionism</b>	Female	S9	S8	S7	3
<b>Scale</b>	Male	-	-	-	0
<b>Collaborative Learning</b>	Female	-	S2	S1	2
<b>Attitude Towards Attitudes Scale</b>	Male	S3	-	-	1
<b>Total</b>		3	3	3	9

Three students with high, medium and low attitudes according to the results of the IPSAS scores were named as T1, T2, T3. According to the results of the scores obtained from the NPTS, the 3 students with high, medium and low scores with compatible perfectionism were named as T4, T5, T6 and the 3 students with high, medium and low scores with incompatible perfectionism were named as T7, T8 and T9.

When Table 2 is examined, semi-structured interviews were conducted with a total of 9 gifted students, three of whom were at the lowest, middle and highest levels according to the results of quantitative measurements of the scores of compatible perfectionism and maladaptive perfectionism, attitudes towards cooperative learning scale, which are among the substructures of the NQS. Qualitative data were collected from 6 female and 3 male students. Each student was coded as shown in the table.

### Data Collection Tools

In the data collection process in this study, two different types of data collection, qualitative and quantitative, were used. The Attitudes of Gifted Students towards Cooperative Learning Scale and the Agree-Disagree Perfectionism Scale were used to collect quantitative data. Semi-structured interview questions were used to collect qualitative data.

### Attitude Scale Towards Cooperative Learning (AGSCLS)

The Attitudes of Gifted Students towards Cooperative Learning Scale (AGSCLS) was developed by Güler and Doğan (2022). The scale was developed to determine the attitudes of gifted students at the 4<sup>th</sup> and 5<sup>th</sup> grade level towards cooperative learning. The scale was developed in Likert type. This scale consists of a total of 23 items, 10 and 13 items in total, consisting of predisposition and avoidance sub-dimensions, respectively. The scale has no negative items. For the original scale, Cronbach's Alpha internal consistency coefficient was 0.89 for the total scale, 0.87 for the 1<sup>st</sup> Factor and 0.84 for the 2<sup>nd</sup> Factor. The lowest score that can be obtained from the AGSCLS is 23 and the highest score is 115. The Cronbach's alpha coefficient calculated for the predisposition and avoidance sub-factors are 0.86 and 0.89, respectively. The reliability coefficient of the whole scale was calculated as 0.93. This coefficient means that the measurements obtained from the scale have a high degree of reliability.

The subscales, scale numbers and sample items from the scale developed by Güler and Doğan (2022) are presented in Table 3.

**Table 3.** Subscales, scale numbers and sample scale items of the AGSCLS

AGSCLS	Subscales	Scale Numbers	Sample Articles
	<b>Predisposition</b>	1-2-3-4-10-15-17-18-20-22	Article 3 It is easy to work in a cooperative learning environment
	<b>Avoidance</b>	5-6-7-8-9-11-12-13-14-16-19-21-23	Article 9 Cooperative learning is boring

### Agree-Disagree Perfectionism Scale (ADPS)

This scale, which consists of obsessive behavior, conditioned self, sensitivity to errors and need for approval sub-factors, consists of a total of 25 items, 6, 6, 9 and 4 items respectively. Consisting of 2 sub-dimensions, the sub-dimensions of the scale are named as congruent and incongruent perfectionism. While the sub-factors of adaptive perfectionism are

obsessive behavior and conditional self-esteem, the sub-factors of maladaptive perfectionism are sensitivity to errors and need for approval. The lowest score that can be obtained from the adaptive perfectionism construct is 12, while the highest score is 48. The lowest score that can be obtained from the maladaptive perfectionism construct is 13 and the highest score is 52. In this 4-point Likert-type scale, the ratings are 1.00- Completely Different from Me, 2.00- Not Very Similar to Me, 3.00- Somewhat Similar to Me and 4.00- Completely Similar to Me. The reliability coefficients for the congruent and incongruent perfectionism constructs were calculated as 0.70 and 0.79, respectively. The results of the calculations prove that the scale has a good level of reliability.

According to the NPTS, it is pointed out that the sub-dimensions of sensitivity to errors and need for approval reflect the negative aspects of perfectionism, while the sub-dimensions of obsessive behavior and conditional self-esteem reflect the partially positive aspects of perfectionism (Rice, Ashby & Preusser, 2002). Stoeber and Rambov (2007) state that the concept of adaptive perfectionism is associated with positive characteristics and outcomes in individuals who strive to be perfect.

The subscales, scale numbers, and sample items from the scale adapted by Baş (2010) are presented in Table 4.

**Table 4.** Subscales, scale numbers and sample items from the NTSS

ADPS	Subscales	Scale Numbers	Sample Articles
<b>Compatible M.</b>	<b>Obsessive behavior</b>	3-6-9-13-21-23	Article 3 I like things to be always in order
	<b>Conditional self-esteem</b>	1-7-10-17-20-25	Article 7 I am satisfied when I do something well
	<b>Sensitivity to errors</b>	2-5-8-12-14-16-19-22-24	Article 2 I am afraid of making mistakes
<b>Misfit M.</b>	<b>Approval requirement</b>	4-11-15-18	Article 4 I like to be praised for what I do because then other people want to be like me.

### Semi-structured Interview Form

In this part of the study, qualitative research method was used to obtain in-depth information. Data were collected through semi-structured interview questions. In semi-structured interview questions, the researcher prepares the questions he/she plans to ask in advance. During the interview, the researcher can ask sub-questions in order to get clearer answers from the questions by sticking to the flow. He/she can ensure that the participant gives detailed answers. In the semi-structured interview technique, the fact that the researcher has prepared the questions in advance ensures that the interview continues in a systematic order. This is one of the conveniences offered by this technique (Yıldırım & Şimşek, 1999).

Semi-structured interview questions were prepared to collect qualitative data. The interview questions were prepared in order to examine the relationship between cooperative learning and perfectionism more deeply. During the preparation of the questions, the opinions of two academicians who are experts in their fields were utilized. As a result of the feedback received, the questions were finalized and applied to the students. The interviews were conducted away from external stimuli and noise, in environments where students could focus, and after obtaining the consent of the students.

### Process

Before starting the research process, ethics committee from the university and legal permissions from the relevant National Education Directorate were obtained. The scales were administered by the researcher in the Science and Art Center where the students were located under the supervision of school administrators and teachers. The necessary explanations about the scales were given to the students verbally and in writing. The application of the scales took

approximately 15 minutes. In order for the data obtained to be unbiased, the names of the students were not included in the scale, and a coding and pseudonym system was used. The gender of the students was taken as demographic information. Semi-structured interview questions were audio-recorded and each student's interview lasted approximately 6 minutes. The audio recordings were then transcribed into written form.

## Data Analysis

### Quantitative Data Analysis

The quantitative data of the study were analyzed in SPSS 25.0 program. Descriptive analysis, independent samples t test, simple correlation and simple linear regression analysis were used to analyze the quantitative data. In the descriptive analysis, the arithmetic mean obtained from the Attitudes Towards Cooperative Learning Scale, which was applied in 5-point Likert type, was calculated as 1.00-1.79 very low, 1.80-2.59 low, 2.60-3.39 medium, 3.40-4.19 high, 4.20-5.00 very high, and the arithmetic mean obtained from the 4-point Likert-type Agree-Disagree Perfectionism Scale was interpreted as 1.00-1.74 very low, 1.75-2.49 low, 2.50-3.24 high, 3.25-4.00 very high. Independent samples t test was used to determine whether the scale scores differed according to gender. The assumptions for this test were checked and it was determined that the normality of the data was ensured. Simple correlation and simple linear regression were used to determine the relationships between students' scale scores. For simple correlation analysis, the normal distribution of the two continuous variables was tested and Pearson product-moment correlation coefficient was used. In simple linear regression analysis, the normal distribution of continuous variables measured on an equal interval scale was tested and assumptions were met. In the correlation analysis, the correlation coefficient was interpreted according to the values suggested by Hopkins (1997). These values are as follows. .00-.10 is negligible; .10-.30 is small; .30-.50 is medium; .50-.70 is high; .70-.90 is very high; .90-1.00 is excellent. The values suggested by Cohen (1988) were used to interpret the regression coefficient as effect size. These values are as follows. Regression coefficient value .0196 was interpreted as small, .1300 as medium and .2600 as large effect size. Analyses were conducted at  $p=0.05$  significance level and interpreted accordingly.

### Qualitative Data Analysis

In this part of the study, the qualitative data obtained as a result of the interviews with the students were analyzed by categorical analysis, one of the types of content analysis. The main purpose of content analysis is to reach concepts and relationships that can explain the collected data (Yıldırım & Şimşek, 2013). A systematic grouping method for determining the codes and categories of the written documents is called content analysis (Karasar, 2009). Categorical analysis is the grouping of the response first into units and then into categories according to predetermined criteria (Tavşancıl & Aslan, 2001).

According to the results of the IPSAS scores, the 3 students with high, medium and low attitudes were named as T1, T2, T3. According to the results of the scores obtained from the NIMS, 3 students with high, medium and low scores with compatible perfectionism were named as T4, T5, T6 and 3 students with high, medium and low scores with incompatible perfectionism were named as T7, T8 and T9. All of the data collected by recording from a total of 9 gifted students were transcribed. The transcribed data were read repeatedly and possible codes were tried to be determined. The codes were meaningfully classified under the categories determined by considering the interview questions. As a result of the categories, tables were obtained in which the opinions of each student could be analyzed separately.

## Findings

### Findings Related to Quantitative Data

#### Findings Related to the First Research Question

The arithmetic mean and standard deviation scores of the students according to their responses to the Attitude Scales for Congruent-Discordant Perfectionist and Attitudes Towards Cooperative Learning are presented in Table 5.

**Table 5.** Descriptive statistics of the attitudes towards congruent-discordant perfectionist and cooperative learning scales

Scales	Sub Dimensions	S	S
Adaptive Perfectionist	Obsessive Behavior	2.43	0.57
	Conditional Self-respect	3.24	0.55
Maladaptive Perfectionist	Sensitivity to errors	2,15	0.62
	Approval Requirement	2.36	0.83
Towards Cooperative Learning Attitude	Predisposition	3.94	0.67
	Avoidance	4.04	0.66
Compliant Perfectionist		2.84	0.46
Maladaptive Perfectionist		2.21	0.56
Towards Cooperative Learning Attitude		4.00	0.63

When Table 5 is examined, it can be stated that students' attitudes towards cooperative learning are at high level, their congruent perfectionism is at high level and their maladaptive perfectionism is at low level. When the variability in scale scores was examined, it was determined that the least variability was found in adaptive perfectionism and the most variability was found in attitude towards cooperative learning scores. In addition, when the sub-factors of the scales are examined, it is seen that students' obsessive behavior, sensitivity to errors and need for approval scores are low, conditional self-esteem scores are high, and predisposition and avoidance scores are high. In addition, when the variability in the scores of the students was examined, the sub-factor with the highest variability was determined as need for approval and the sub-factor with the lowest variability was determined as conditional self-esteem.

#### Findings Related to the Second Research Question

T-test results of students' compatible and maladaptive perfectionism scores according to gender are given in Table 6.

**Table 6.** T-test results of agree-disagree perfectionism scale scores according to gender

Sub Factor	Gender	N	$\bar{X}$	S	Sd	t	p
Adaptive Perfectionism	Female	117	34.69	5.40	240	1.836	0.068
	Male	125	33.39	5.61			
Maladaptive Perfectionism	Female	117	29.53	7.97	240	1.571	0.117
	Male	125	28.06	6.52			

According to Table 6, students' congruent perfectionism and maladaptive perfectionism scores do not differ significantly by gender,  $t(240)=0.836$  and  $t(249)=1.571$ ,  $p>.05$ . Female students' congruent ( $X=34.69$ ) and maladaptive ( $X=29.53$ ) perfectionism scores are higher than male students' congruent ( $X=33.39$ ) and maladaptive ( $X=28.06$ ) perfectionism scores.

#### Findings Related to the Third Research Question

The t-test results of students' attitude scores towards cooperative learning according to gender are given in Table 7.

**Table 7.** T-test Results of attitude towards cooperative learning scale scale scores according to gender

Gender	N	$\bar{X}$	S	Sd	t	p
Female	117	91.23	15.20	240	0.690	0.491
Male	125	92.52	13.88			

According to Table 7, students' attitude scores towards cooperative learning did not differ significantly according to gender,  $t(249)=1.690$ ,  $p>.05$ . Male students ( $X=91.23$ ) had higher attitude scores towards cooperative learning than female students ( $X 92.52$ ).

#### Findings Related to the Fourth Research Question

'Is there a relationship between the attitudes of gifted students towards cooperative learning and their congruent and incongruent perfectionism?' The results of the correlation analysis of Attitude Towards Cooperative Learning, the attitude towards cooperative learning scale sub-dimensions of predisposition and avoidance, and congruent and incongruent perfectionism are given in Table 8.

**Table 8.** Correlation between attitude towards cooperative learning, disposition, avoidance and congruent and maladaptive perfectionism

		Avoidance	Predisposition	Cooperative Learning Attitude Towards
Compatible Perfectionism	Pearson Correlation	,235**	,336**	,294**
	p	,000	,000	,000
	N	242	242	242
Incompatible Perfectionism	Pearson Correlation	-,173**	-,056	-,129*
	p	,007	,386	,046
	N	242	242	242

Table 8 shows that there is a weak, positive and significant relationship between students' adaptive perfectionism and their attitudes towards avoidance and cooperative learning ( $r=0.235$ ,  $r=0.294$ ,  $p<.05$ ). In addition, there is moderate, positive and significant relationship between adaptive perfectionism and predisposition ( $r=0.336$ ,  $p<.05$ ). It was determined that the highest to the lowest relationship with adaptive perfectionism was predisposition, attitude towards cooperative learning and avoidance, respectively. Accordingly, it can be said that as adaptive perfectionism increases, avoidance, predisposition and attitude towards cooperative learning increase. When the coefficients of determination were analyzed ( $r=0.06$ ,  $r=0.11$ ,  $r=0.09$ ), it can be said that 6%, 11% and 9% of the total variance in avoidance, predisposition and attitude towards cooperative learning, respectively, were caused by adaptive perfectionism.

There is a negligible, negative relationship between students' maladaptive perfectionism and predisposition ( $r=-0.056$ ,  $p<.05$ ). There is also a small, negative and significant relationship between students' maladaptive perfectionism and avoidance and attitude towards cooperative learning ( $r=-0.173$ ,  $r=-0.129$ ,  $p<.05$ ).

Does adaptive- maladaptive perfectionism significantly predict gifted students' attitudes towards cooperative learning? The results of regression analysis related to the prediction of adaptive perfectionism on attitude towards cooperative learning are presented in Table 9.

**Table 9.** Regression analysis results of adaptive perfectionism predicting attitude towards cooperative learning

Model	Standard scores	Standardized Points			
	B	SH	BETA	t	p
Fixed	65.639	5.580		11.764	.000
Compatible Perfectionism	.772	.162	.294	4.767	.000

Dependent Variable: Attitude towards Cooperative Learning,  $R^2 = 0.09$ ,  $F=22.729$  When Table 9 is analyzed, it is seen that adaptive perfectionism is a significant predictor of students' attitude towards cooperative learning, [ $r=0.294$ ,  $r=0.09$ ,  $F(1,240)=22.729$ ,  $p<.05$ ]. It can be stated that 9% of the total variance related to the attitude towards cooperative learning is explained by the students' adaptive perfectionist structure. According to the calculated regression coefficient value, it can be said that the effect size obtained is close to the medium level. According to the results of the regression analysis, the regression equation or mathematical model for predicting the attitude towards cooperative learning is given below.

$$\text{Attitude Towards Cooperative Learning} = 65.639 + 0.772 \cdot \text{adaptive perfectionism}$$

According to this model, it can be said that a 1-point change in students' adaptive perfectionism sub-dimension causes a 0.772 point change in their attitudes towards cooperative learning.

The results of the regression analysis related to the prediction of adaptive perfectionism's prediction of the attitude towards cooperative learning scale sub-dimension avoidance are given in Table 10.

**Table 10.** Regression analysis results of adaptive perfectionism predicting avoidance subscale of attitude towards cooperative learning scale

Model	Standard scores		Standardized Points		
	B	SH	BETA	t	p
Fixed	40.065	3.368		11.894	.000
Compatible Perfectionism	.367	.098	.235	3.754	.000

Dependent Variable: Attitudes Toward Cooperative Learning Scale Avoidance Subscale,  $R^2=0.06$ ,  $F=14.090$

When Table 10 is examined, it is seen that adaptive perfectionism is a significant predictor of the avoidance sub-dimension of the students' attitude towards cooperative learning scale, [ $r=0.235$ ,  $r=0.06$ ,  $F(1,240)=14.090$ ,  $p<.05$ ]. It can be stated that 6% of the total variance related to the avoidance sub-dimension of the attitude scale towards cooperative learning is explained by the students' adaptive perfectionist structure. According to the calculated regression coefficient value, it can be said that the effect size obtained is between small and medium level.

According to the results of the regression analysis, the regression equation or mathematical model for predicting the avoidance sub-dimension of the attitude towards cooperative learning scale is given below.

Attitudes Toward Cooperative Learning Scale Avoidance Subscale =  $40.065 + 0.367$  adaptive perfectionism.

According to this model, it can be said that a 1-point change in the adaptive perfectionism sub-dimension of the students causes a score change of 0.367 in the avoidance sub-dimension of the attitude towards cooperative learning scale.

The results of the regression analysis related to the prediction of adaptive perfectionism's prediction of the predisposition of the attitude towards cooperative learning scale sub-dimension are presented in Table 11.

**Table 11.** Regression analysis results regarding the prediction of adaptive perfectionism on the attitude scale towards cooperative learning subscale predicting disposition

Model	Standard scores		Standardized Points		
	B	SH	BETA	t	p
Fixed	25.575	2.525		10.129	.000
Compatible Perfectionism	.405	.073	.336	5.528	.000

Dependent Variable: Attitudes Toward Cooperative Learning Scale Disposition Subscale,  $R^2=0.11$ ,  $F=30.555$

When Table 11 is examined, it is seen that adaptive perfectionism is a significant predictor of the predisposition sub-dimension of the students' attitude towards cooperative learning scale,  $r=0.336$ ,  $r=0.11$ ,  $F(1,240)=30.555$ ,  $p<.05$ . It can be stated that 11% of the total variance related to the predisposition sub-dimension of the attitude towards cooperative learning scale is explained by the students' adaptive perfectionist structure. According to the calculated regression coefficient value, it can be said that the effect size obtained is close to the medium level.

According to the results of the regression analysis, the regression equation or mathematical model for predicting the predisposition sub-dimension of the attitude towards cooperative learning scale is given below.

Attitudes Towards Cooperative Learning Scale Disposition Subdimension =  $25.575 + 0.405$  . adaptive perfectionism

According to this model, it can be said that a 1-point change in students' adaptive perfectionism sub-dimension causes a score change of 0.405 in the predisposition sub-dimension of the attitude towards cooperative learning scale.

### Findings Related to Qualitative Data

#### Findings Related to the Fifth and Sixth Research Questions

In this section, the analysis of the answers given to the interview questions are presented in tables respectively.

#### Question 1: "How would you define a perfectionist?"

Participants' responses to Question 1 are presented in Table 12.

**Table 12 .** Analysis results of participants' responses for question 1

Theme	Code	Frequency
Detail oriented	The desire to achieve the best	5
	Willingness to do it completely	5
Superiority	Self-righteousness	3
	Criticizer	7
Stressed	Repetitive work	3
	Constantly fixing bugs	2
Helpful	Helping others	2
Successful	Admired	2
	Receiving praise	2

\* One student used more than one definition in his/her explanation.

When gifted students were asked about the characteristics of perfectionist individuals, their answers were combined under 5 themes: detail-oriented, superiority, stressful, helpful and successful. When the answers are checked, it is seen that there are different definitions under each theme heading.

Some of the answers given under the themes on how they define a perfectionist person are as follows:

*Detail oriented:*

*"He does his job correctly by thinking about all the details. He plans everything by thinking." (S5)*

*"He keeps his work at a very high level, sets high level limits." (S3)*

*"He always strives for the best." (T1)*

*"They are people who always want their work to be complete and thorough." (S4) Self-Complacent:*

*"He wants to do everything his way. He always values his own ideas."*

*"He does not care much about the opinions of his teammates." (S1)*

*"He says things like 'Oh, you did it like this, you could never do it. He considers his own superior.'" (T1)*

*"They may constantly criticize and dislike the work of others." (S4)*

*"Since they do everything very well, they may not like the work of others even if it is good." (S9)*

*"I would describe a perfectionist as arrogant. Because not everyone is as perfectionist as he/she is. He thinks he is the best." (S2)*

*Stressful:*

*"... are people who try to do the work they cannot do over and over again." (S3)*

*"They stress themselves at the slightest mistake and aim to never make mistakes." (S7) "They are the people who immediately correct even the slightest mistake they make." (S4) Helpful:*

*"Perfectionist people give positive feedback to other people to give them hope. They help those who ask for help" (S5)*

*"They motivate their friends." (S6) Successful:*

*"Everything is perfect." (S9)*

*"He gets praise where he is. He has high ranks. He is good at what he does." (S6)*

*"I respect perfectionist people." (S3)*

**Question 2: "Do you consider yourself a perfectionist, can you explain?"**

Participants' answers to Question 2 are presented in Table 13.

**Table 13.** Analysis Results of Participants' Responses for Question 2

Theme	Code	Frequency
I am a perfectionist	Check again and again	1
	Willingness to do it completely	2
	Attention to detail	2
	Stress	1
I am not a perfectionist	There are no perfect people	3

\* One student used more than one definition in his/her explanation

Some of the answers given under the themes about whether gifted students find themselves excellent or not are as follows:

*I am a perfectionist:*

*"I am interested in many arts. I try to do it very carefully. When I make mistakes, I try to correct them and look at them again and again." (S9)*

*"I get stressed while doing my homework. I think it should be complete and not incomplete. When it is incomplete, I get very stressed and tire myself a lot." (S4)*

*"I want everything to be complete, if it's incomplete or incomplete I get upset for a few days.*

*I would be very happy if I do it in the expected capacity." (T1)*

*"Getting even one question wrong in the exams would make me very unhappy." (S7)*

*I am not a perfectionist:*

*"No human being is perfect or flawless. I just do the best I can do. I don't see myself as perfect." (S6)*

*"Perfection is the friend of beauty, but if you try to be perfect, you will not find time for anything. Making something perfect is not a great achievement." (S2)*

### Question 3: "What are the benefits of being a perfectionist?"

Participants' responses to Question 3 are presented in Table 14.

**Table 14.** Analysis Results of participants' responses for question 3

Theme	Code	Frequency
Success	Good work	6
	Being in the first rows	2
	Pride	2

\* One student used more than one definition in his/her explanation.

As a result of the answers given by the participants regarding the benefits of being a perfectionist, it is seen that they are united under a single theme. Some of the answers given are as follows:

*"The benefits are many. They can come to good places, have good friends. They can be in the first places in some places." (S6)*

*"They can do everything very well and above expectations. They have a lot of responsibility, but they do everything well. This is a positive thing." (T1)*

*"Their work goes well because they do most things well." (Ö8)*

*"In some important jobs, in competitions, doing everything in detail, dealing with details brings you better results. Making it perfect makes you proud." (S2)*

**Question 4: "What are the challenges of being a perfectionist?"**

Participants' responses to Question 4 are presented in Table 15.

**Table 15** Analysis Results of Participants' Responses for Question 4

Theme	Code	Frequency
Exhausting	Failure to meet deadlines	2
	Don't get stressed	2
	Print	2
Social relations	Exclusion	2
	Self-esteem	2

\* One student used more than one definition in his/her explanation.

As a result of the answers given by the participants about the difficulties of being a perfectionist, they were combined under the themes of exhausting and social relationships. Some of the answers given are as follows:

*Tiring:*

*"For example, I am doing a project assignment, time is tight and I need to finish it. When it is incomplete, I get stressed. I tire myself a lot." (S4)*

*"You are perfect, everyone knows you, they don't leave you to do what you want. This creates pressure on the person." (Ö5)*

*"One has to make mistakes. You get angry when you can't do something. You act as if you should never fall below that limit. This is very tiring." (S7)*

*Social relations:*

*"Since perfectionist people see themselves as superior and different from others, this can cause them trouble." (S8)*

*"Perfectionist people boast too much about themselves and this creates problems in friendship relationships." (S9).*

*"He is ostracized by his friends because he always cares about his own ideas and does not like the ideas of others." (S1)*

**Question 5: "How do you feel when you are in cooperative learning environments?"**

Participants' answers to Question 5 are presented in Table 16.

**Table 16.** Analysis Results of Participants' Responses for Question 5

Theme	Code	Frequency
Belonging	Being part of a group	2
	Task sharing	3
	Enjoyable	5
	At ease	2
Anxious	Seeing mistakes	1

\* One student used more than one definition in his/her explanation.

Some of the answers given under the themes that emerged about how the participants felt when they were in cooperative learning environments are as follows:

*Belonging:*

*"I feel happy to be a part of the group." (S1)*

*"I like cooperative learning environments very much, I feel comfortable, working with people I like makes me happy. We share the responsibility." (S4)*

*"Cooperative learning environments are very fun for me, I feel very enjoyable in those environments." (S2)*

*"I like being with my friends very much." (S6)*

*"Cooperative learning environments are easier for me because I don't have to do anything on my own. Also,*

*when I work with my groupmates, I feel closer to them." (S9)*

*"Cooperative learning environments are good, there is no pressure, I feel more comfortable." (S8)*

Concerned:

*"I feel anxious in cooperative learning environments. Everyone looking at me gives me stress. The fact that my mistakes are seen by everyone makes me anxious. The fact that people may not forget that mistake afterwards stresses me." (S5)*

### Question 6: "Do you prefer group work or individual work when studying a certain topic? Why?"

Participants' responses to Question 6 are presented in Table 17.

**Table 17.** Analysis results of participants' responses for question 6

Theme	Code	Frequency
Group Work	Sharing responsibility	4
	Completing the shortcomings	4
	Socializing	2
	Different ideas	2
	Better business	3
Individual Study	Disrupting work	1
	Interference in your work	1

\* One student used more than one definition in his/her explanation.

Some of the answers given under the themes regarding whether the participants prefer group work or individual work are as follows:

#### Group work

*"It would be better to do group work if we can meet at a common point. They can give ideas that I cannot give and better works can emerge." (S7)*

*"I mean, if we work individually, no one can interfere with you, you can do anything you want, but your job will be difficult. In a collaborative environment, we can share ideas and socialize. You have control over a part of it, but your friends have control over a large part, you share ideas, I prefer group work more." (S5)*

*"We can complete each other's deficiencies in this way." (S3)*

*"I don't like to be in a large group because there is not enough division of labor. I like working in small groups." (Ö1)*

Individual work:

*"I prefer to work alone because I don't want others to mess up very important jobs." (S6)*

### Question 7: "How does it make you feel when your colleagues you work in collaboration with are missing or make mistakes during the work?"

Participants' responses to Question 7 are presented in Table 18.

**Table 18.** Analysis Results of Participants' Responses to Question 7

Theme	Code	Frequency
Being stressed	Irritation	2
	Don't complain	1
	Warning	7
Sadness	Providing assistance	2
	Correction	1

\* One student used more than one definition in his/her explanation.

The emotions that the participants felt about their colleagues' shortcomings or mistakes during the study were combined under the themes of being stressed and being upset. Some of the answers given are as follows:

*Being stressed*

"If he/she doesn't do it, sometimes I get angry inside myself, I try not to show it outwardly as long as the other person doesn't exaggerate." (S1)

"I feel bad, I warn my friend first because this work is not only his/her work." (S2)

"I warn them and ask them to do better next time." (S3)

"I give warnings, if I cannot, I get angry." (S7)

"If he/she does not pay attention to my warnings, I will complain to the person who gave the work." (S6)

"I get very stressed because we cannot do it completely." (S4)

*To be sad:*

"I tell my friend 'you should also contribute here'. If there is something she cannot do, I help her." (T1)

"I explain myself to my friends, I get upset if what I say is not taken into consideration." (S9)

"I feel sorry for my friends who make mistakes in such situations. They can also make mistakes." (S5)

"We can correct it if we have time to correct it." (S4)

**Question 8: "As a result of cooperative learning, group success is at the forefront. Do you prefer group success or individual success?"**

Participants' responses to Question 8 are presented in Table 19.

**Table 19.** Analysis results of participants' responses for question 8

Theme	Code	Frequency
Group success	Socialization	3
	Support	3
	Enjoyment	2
	Undeserved reward	3
Individual success	Sense of self	3
	Feeling special	1

\* One student used more than one definition in his/her explanation.

It is seen that there are different definitions under the themes regarding whether the participants prefer group success or individual success. Some of the answers given are as follows:

*Group success:*

"A common award received at the end of a work that you all work together makes the person happier. It is much more beautiful to have a friend next to you to throw your arm than to be alone in an award photo." (S2)

"I like cooperation and being together more." (S3)

"In individual work, all the work belongs to you, in group work, different people also contribute. Your friendship ties develop." (S5)

"I prefer group work if everyone works in the same way." (S6)

"I prefer the success of a small group. In groups of many people, some people may try to stand out because I tried the hardest. In small groups, it becomes clear who is working and who is not." (S1)

*Individual success:*

"In group work, even those who don't really work hard are considered successful because they are in the group. If I am alone, it is my success." (Ö4)

"Individual success makes you feel special." (S9) "I would be happier if they just congratulated me." (Ö7)

### Conclusion and Discussion

In the data analysis of the first sub-research question of the study, which was the attitudes of gifted students towards cooperative learning and the level of their congruent and incongruent perfectionism, it was concluded that students' attitudes towards cooperative learning and their congruent perfectionism were at a high level, while their incongruent perfectionism was at a low level. Considering that the concept of adaptive perfectionism is a positive characteristic (Stoeber & Rambow, 2007), the fact that the gifted student has the drive to succeed, aims for high standards, and approaches his/her studies with an understanding of quality and excellence supports Renzulli's findings that are effective in determining the characteristics of gifted individuals (Özkan, 2013). The fact that there are studies in the literature (Chan, 2007; LoCicero & Ashby, 2000; Schuler, 2000) showing that congruent perfectionism scores are high supports this view.

Parker (2000), in his experimental studies on the perfectionism levels of gifted students, concluded that, contrary to popular belief, gifted students have low levels of negative perfectionism tendencies. This is a study that supports the low level of maladaptive perfectionism tendencies. It was concluded that the effort to be perfect in gifted students is a force that encourages success (Parker, 2000). The high level of attitudes towards cooperative learning shows that there are studies that support the result of the research with the statement that both success and friendship relations are positively affected in classes where cooperative learning method is used (Baş, 2012; Doymuş, Şimşek, & Karaçöp, 2009; Doymuş, Şimşek, & Bayrakçeken, 2004).

It can be stated that students' obsessive behavior scores, which are sub-dimensions of adaptive perfectionism, are low, conditional self-esteem scores are high, sensitivity to errors and need for approval scores, which are sub-dimensions of maladaptive perfectionism, are low, and predisposition and avoidance scores, which are sub-dimensions of attitude towards cooperation, are high. The high level of conditional self-esteem, which includes task performance and self-evaluation, supports students' setting high standards in their studies and striving to be perfect (LoCicero & Ashby, 2000). Similarly, the high level of students' predisposition and avoidance scores towards cooperative learning may sometimes show differences in the reasons why students want to be in cooperative learning environments. The use of talented and successful students as locomotives in cooperative learning environments emphasizes the view that students learn best while teaching. The thesis that highly talented students learn better in cooperative learning environments with the role of teacher (Açıkgöz, 2002).

In the study, it was determined that there was a weak, positive and significant relationship between students' adaptive perfectionism and their attitudes towards avoidance and cooperative learning. There was a moderate, positive and significant relationship between adaptive perfectionism and disposition. The highest to the lowest relationship with adaptive perfectionism was found to be predisposition, attitude towards cooperative learning and avoidance, respectively. It can be said that 6%, 11% and 9% of the total variance in avoidance, disposition and attitude towards cooperative learning, respectively, is caused by adaptive perfectionism. It can be stated that predisposition sub-dimension has a large effect, while the avoidance sub-dimension and attitude towards cooperative learning have a medium effect.

It was determined that adaptive perfectionism was a significant predictor of students' attitude towards cooperative learning scale avoidance and predisposition sub-dimension and attitude towards cooperative learning scores. According to this result, it can be said that students' avoidance and predisposition sub-dimension scores in their attitudes towards cooperative learning can be predicted by examining their adaptive perfectionism scores or situations. Based on these results, it is thought that determining the compatible perfectionism levels of gifted students can provide information about their attitudes towards participating in cooperative learning environments. It was determined that there was a negligible, negative relationship between students' maladaptive perfectionism and predisposition.

The responses of gifted students to the question "How would you define a perfectionist?" were grouped under five themes: detail-oriented, superiority, stressful, helpful and successful. They defined perfectionists as individuals who strive for everything to be the best, always care about their own ideas, criticize other people, are stressed, cannot tolerate making mistakes, and try to be successful by constantly receiving praise. In the interviews, six out of nine students

defined themselves as perfectionists, saying that they paid too much attention to details, were stressed, and wanted to do everything completely. These data support obsessive behavior and conditional self-esteem, which are sub-dimensions of adaptive perfectionism. Three of the nine students expressed the idea that there is no perfect person, every person has deficiencies.

The gifted students, who stated that being a perfectionist has more harms than benefits, identified as a positive characteristic that perfectionism brings success as a result of the work done. As for the negative characteristics of perfectionism, they think that it is tiring and disrupts social relations, that they are excluded by their friends, and that they are under pressure from the social environment where they feel that they have to do everything in the best way.

The fact that gifted students who feel happy and belong to the relevant group in cooperative learning environments argue that being part of the group, sharing responsibilities, being in closer communication with their friends, and having less stress in task distribution support the predisposition sub-dimension of the attitude towards cooperative learning. The fact that students who feel anxious in cooperative learning environments think that their mistakes will be noticed immediately in the group and that these mistakes will not be forgotten supports the sensitivity to mistakes sub-dimension in the maladaptive perfectionism scale.

When students were asked which they would prefer between group work and individual work, the majority of students preferred group work. Easier completion of deficiencies, high responsibility sharing, and more socialization are among the reasons why gifted students prefer cooperative learning environments. This data also supports their attitudes towards cooperative learning environments. On the other hand, students who preferred individual work stated that they could disrupt the work of their groupmates, that they could not do it the way they wanted, and that they did not like being interfered with. From this discourse, it can be said that the perfectionist structure negatively affects the participation in cooperative learning environments, albeit to a lesser extent.

When the students were asked how they felt as a result of their groupmates' mistakes or deficiencies during the collaborative work, seven of the nine students stated that they were stressed, angry and made warnings. Two students said that they felt sorry for their friends and helped them to correct their mistakes. Based on this data, it is seen that gifted students support the sensitivity to errors sub-dimension of maladaptive perfectionism. According to the results of the scale, it can be said that the data (It was determined that there was a negative relationship between students' maladaptive perfectionism and predisposition at a negligible level) is at a level that cannot be ignored.

When the students were asked whether they preferred group success or individual success as a result of collaborative work, six out of nine students preferred group success and three students preferred individual success. The students who preferred group success stated that they enjoyed receiving awards with their friends, that they socialized, and that it was a good feeling to support each other. On the other hand, the students who preferred individual achievement stated that some of their friends in the group might receive an award even though they did not deserve it, that some of them wanted to stand out, and that they would be happier if they received an award on their own. This data supports the need for approval sub-dimension in the maladaptive perfectionism scale.

### **Recommendations**

In this study, the relationship between gifted students' attitudes towards cooperative learning and their perfectionism and their views on cooperative learning and perfectionism were examined. In this part of the study, the discussion of the results obtained and the suggestions that emerged are given.

- It is suggested that considering these characteristics of gifted students with high cooperative learning and adaptive perfectionism scores and organizing educational environments accordingly may be beneficial for the academic and psychological development of students.
- Considering the advantages of the cooperative learning method in education and training environments, it is suggested that enabling these students, who have the same characteristics as their peers, to carry out collaborative work by combining different areas of talent will pave the way for the emergence of good works.
- It is suggested that combining the high level of adaptive perfectionism of gifted students with collaborative

learning environments will create opportunities for the development of the country and the discovery of inventions.

- It is suggested that students with high avoidance attitudes towards cooperative learning can develop solutions to this problem by determining the reasons underlying this attitude.
- It is suggested that individual therapies can be applied to students with high maladaptive perfectionism scores from the school guidance and psychological counseling department for the ways of thinking and living.
- It is suggested that it may be useful to include more activities in which cooperative learning method will be used in the curricula in BİLSEMs where gifted students are educated.
- It is suggested that it may be useful to organize practical trainings about cooperative learning techniques and cooperative learning activities for teachers working in BİLSEMs.
- Since there is no study investigating the relationship between the perfectionist structures of gifted students and cooperative learning in the literature, it is suggested that it may be useful to increase the number of schools where project-based and cooperative teaching methods can be used to develop these students' perfectionist structures in a positive way.
- It is thought that the fact that gifted students, who mostly define themselves as perfectionists, say that perfectionism is more harmful than beneficial and that being a perfectionist is a stressful and pressurizing situation negatively affects their lifestyles. It is suggested that taking these situations of the students into consideration and developing solutions for them would be beneficial for the personality development of the students.

### Limitations of the Study

- In this study, 242 5<sup>th</sup> grade gifted students who receive education in BİLSEMs in Ataşehir district of Istanbul province in Turkey participated in the study and the results obtained as a result of the study can be generalised to individuals with the same characteristics.
- This research is limited to the applications of the Attitude Scale towards Cooperative Learning, Adaptive-Defiant Perfectionism Scale and Semi-Structured Interview Questions of Gifted Students.

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