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Views of Gifted Secondary School Students on the "Matter and its Nature" Courses Taught through the EPTS (Education Program for Talented Students) Curriculum Model*

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ABSTRACT

The study aimed to determine the views of gifted students on "Matter and Its Nature" using the Education Program for Talented Students (EPTS) Curriculum Model. The data was collected from four gifted 6th graders. Semi-structured interviews and diaries were analyzed thematically. They stated that the lessons were taught with modeling, experimentation, and computer-assisted simulation. They enjoyed learning these lessons. The students stated that they did not like the traditional education system in formal education, but they found the lessons taught in this context interesting. The fact that the students found the science courses created using this model effective and enjoyable. It shows that the stakeholders can teach science concepts more effectively and permanently by using this model. teachers should use this model in their lessons, and researchers should also carry out studies where they can adapt the curriculum model to other units.

Keywords: Differentiated instruction, giftedness, science education, the education programs for talented students (EPTS) curriculum model.

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INTRODUCTION

In our country, the education of gifted individuals has become crucial in recent years. Considering both the increase in academic studies on this subject in recent years and the publications of the Ministry of National Education (MEB, 2006, 2013), it is clear that this subject is becoming more prevalent day after day. A child who is diagnosed as gifted must receive special education in order to realize his / her potential (Ataman, 2012). Thus, he/ she can be useful to the society and one of the prominent people of the future (Andersen & Ward, 2014). In addition, one of the reasons for the change in education policies for gifted students who have better mental skills compared to their peers and the increasing importance given to gifted students, is the emergence of a field where different disciplines such as STEAM (science, technology, engineering, art, math) that requires the use of thinking skills are combined (Çepni, 2018). For gifted students, who are expected to receive a different education from their peers, more substantial and more efficient programs aiming to fulfil their potential are developed by using educational strategies and curriculum (education programs) models.

The use of various educational strategies during the schooling years, individuals develop their thinking skills and make learning more meaningful (Schunk & Zimmerman, 2003). In the education of gifted students, on the other hand, some teaching strategies have been developed considering their learning capacities, learning profiles, learning needs and the methods in which they can express themselves unreservedly. The teaching strategies that will be focused on in this study are acceleration and enrichment.

The acceleration has emerged since the gifted students have faster learning characteristics compared to their peers. Due to these special characteristics of gifted students, more advanced, complex and in-depth teaching is offered than the subject/outcomes of their currently existing grade level (Kanlı, 2011). The acceleration teaching strategy, which allows the gifted students, who are likely to know the subjects taught at their existing grade level, not to become bored and spend their time with relatively new (unfamiliar) subjects, is included in many framework curriculum (education programs) models. Integrated Curriculum Model (VanTassel-Baska, 1986), Grid Model (Kaplan, 2009) and EPTS Curriculum Model (Sak, 2011) include the acceleration teaching strategy.

Another educational strategy for gifted students is enrichment. In this strategy, depending on the needs and characteristics of the students, there are differences such as deepening/expanding the course topics, changing the teaching methods and/or learning environment, (Schiever & Maker, 2003; Sak, 2017). The Maker Model (Maker, 1982), Curriculum Narrowing Model (Reis & Renzulli, 1978), Integrated Curriculum Model (Van Tassel-Baska 1986), Grid Model (Kaplan, 2009) and EPTS Curriculum Model (Sak, 2011) utilize the enrichment strategy.

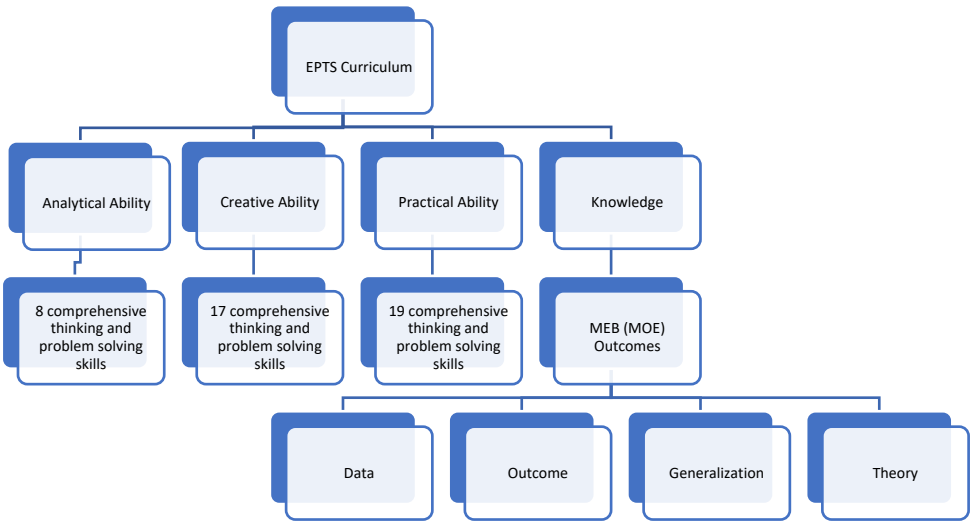
The curriculum models enable the planning and development of lessons by offering a theoretical framework for the teaching practices of the target audience in dimensions such as content, process, product and learning environment (Sak, 2017). The teacher prepares lesson plans by adopting the theoretical framework presented by the curriculum model s/he

uses. By this means, students are supported and enabled to reveal their potential. Maker Model (Maker, 1982) Parallel Curriculum Model (Tomlinson, Kaplan, Renzulli, Leppien, Burns & Purcell 2002), Curriculum Narrowing Model (Reis & Renzulli, 1978), Integrated Curriculum Model (Van Tassel-Baska 1986), Grid Model (Kaplan, 2009) and EPTS Curriculum Model (Sak, 2017) are among the curriculum models created for gifted students.

Among these curriculum models, the Gifted Education Programs (ÜYEP/EPTS) Curriculum Model, which includes both enrichment and acceleration strategies, draws attention. This curriculum model was created as a program at Anadolu University and entered into service in 2014 as an application and research center (Sak, 2017). The objective of the institution is to identify the gifted students, to teach and evaluate them with the program they have created. EPTS, in addition to providing after-school education to gifted students, aims to accelerate and enrich the teaching of curricula. The Gifted Education Program consists of components including diagnosis, curriculum, program format, teaching, assessment and teacher training; the EPTS Curriculum Model, on the other hand, proposes a mix of acceleration and enrichment.

There are various components in the curriculum dimension of this model. These components are illustrated in Figure 1. While preparing the EPTS Units, the national outcomes from the target group's own grade level and the following grade levels are integrated with the skills under the headings of analytical ability, practical ability, and creative ability. The outcomes of the following level's outcomes in the unit provide the acceleration, and the inclusion of EPTS skills provides enrichment (Sak, 2017). The EPTS unit is finally completed when the teaching method techniques are identified in accordance with the learning outcomes and the teaching materials are prepared.

Figure 1. EPTS Curriculum Model Components (Sak, 2017, p.192)



EPTS has adopted a university-based education and implements its education activities in the campus of Eskişehir Anadolu University. Before, during and after these education

activities, diagnosis, curriculum, program format, teaching, teacher training dimensions and evaluation are all conducted in the same institution. The purpose of the present study is to evaluate the Curriculum dimension, independent from other dimensions, through the eyes of gifted students studying in different institutions.

The purpose of the study

It is a known fact that there is no single educational program that will appeal to every student. However, the more the characteristics of the sample to which the program will be applied are known, the higher the probability that the program will reach its goal. The EPTS (Education Program for Talented Students) Curriculum Model, which was developed by considering the characteristics of the gifted, is currently being prepared and implemented at the EPTS Education and Research Center.

In this research, "What are the opinions of gifted students about the EPTS Unit prepared by the researcher and the lessons taught in this unit?" An attempt was made to find an answer to the question. In order to answer this question, semi-structured interview questions and reflective diaries filled by students were used and analyzed.

The limited number of studies in the literature in which in-depth views are taken and the use of data collection tools mostly in the context of academic development; makes it difficult to look at the situation from the perspective of the sample. This study aims to reveal how gifted students perceive the EPTS Unit, which is prepared on science/matter and heat, by examining in-depth how students perceive it.

METHODOLOGY

Research Method

In the present study, four gifted students who received post-school education at the Potential Gifted Association (PÜYED) in Bursa were asked to express their views clearly about the courses they received in line with the EPTS curriculum model, and in an attempt to implement a more in-depth study, a qualitative research method was adopted and the case study design was utilized. The case study design, enables the researcher to delve into the cause-effect relationship and details of a special situation related to a group (Çepni, 2014). According to Creswell (2013), it is essential to utilize more than one data collection tool in this research design. Semi-structured interviews and reflective diaries were used as data collection tools since this study aimed to develop a deep understanding of the subject and reflect the experience/event from the perspectives of the students.

Research Sample

The participants in this study were 6th grade students who received after-school education at PÜYED in the 2018-2019 Spring semester. Before the study was applied, necessary permissions were obtained from the parents of the students and students were given code names.

Table 1. Participants

STUDENT CODE NAME	GENDER	SCHOOL TYPE	INTELLIGENCE TEST
S1	M	Private school	WISC-R
S2	M	Private school	CAS
S3	F	Public School	CAS
S4	F	Public School	WISC-R

Table 1 illustrates the students' code name, gender, the type of school they attend, and the intelligence test they have taken when being identified.

Data Collection Tools and Process

Semi-structured interviews (Interview)

Interviews can be defined as an oral interview technique in which the in-depth view of the specified target audience on the subject/subjects is sought. In interview types, there is a semi-structured interview technique, which has benefits such as making changes in predetermined questions, creating a wide discussion environment and providing flexibility in order to make the answers more explanatory (Çepni, 2014).

In the present study, semi-structured interview technique was utilized due to the flexibility it offered. The researcher prepared the questions in advance, but during the interview, he had room for flexibility in the questions in accordance with the changing or developing conditions. The researcher conducted two interviews with each student because of the intermittent block lessons. The interview consisted of a total of sixteen open-ended questions;

Table 2. The interview questions

Question number	Question
1	What do you think about the lesson we taught today? Was it different from other lessons? What was the difference?
2	In today's lesson, you did the activities in order. What do you think about the activities in the lesson?
3	If I ask you to comment individually for each activity, what would you say?
4	Which activity do you think was more effective? Why?
5	Was there a topic that you had trouble understanding? Why?
6	Do you think you understand the activities in the lesson?
7	Science courses; How did teaching with the method of using different teaching practices (model, simulation, experimentation) affect your learning / comprehension of the subject? Can you explain?
8	Would you like us to teach our next lessons with these methods again? Why?
9	What do you think is the most effective method for learning a subject?
10	Did you use any equipment while doing the experiment today? Do you think there are more effective ways to learn a subject?
11	Before doing the activity, we did a brain exercise to get into the subject. Do you think this was effective?
12	What do you think is the role of the teacher while doing the activity? Or what was the teacher's role in this lesson?
13	What do you like most in a lesson? Do interesting and fun activities grab your attention?

14	What other activities can we do to learn about the atom? What do you think is the best way to learn about this topic?
15	How much of the lessons given here or in your normal education can you use/do you use in your daily life? Can you to evaluate them individually?
16	What would you do differently if you did the activities here again? Or would there be an activity you would like to change?

The general purpose of these questions was to consult the views of the participants about the content, process, product and learning environments of the lessons taught in compliance with the EPTS Curriculum Model.

Diaries

Student diaries, which provide a reference point about the experiences of the participants during their education, according to Unrau (2008), enable the understanding of how the learning activities develop from the perspective of the participants. Walker (2003) is of the opinion that this data collection tool also enables the participants to get to know themselves. In addition, the diaries written by students have benefits such as being aware of what has been learned (Moon, 2009), facilitating the development of high-level mental skills (Gorlewski & Greene, 2011), and being a learning method that encourages writing (Farah, 2012) (cited in Girgin, 2020).

The participant/student diaries used in this study consist of four blocks. The blocks are What I Know, What I Observed, What I Learned, and My Questions, respectively. The gifted students who made up the participants started to write these diaries from the beginning of the lesson. The researcher collected the diaries at the end of the lesson.

Data Analysis

The semi-structured audio-recorded interviews were transcribed. The most emphasized themes/categories were obtained from these digital texts, and these were created as tables in the results section. The semi-structured interviews conducted after the EPTS Unit was taught were decoded and subjected to thematic analysis.

In the analysis of the diaries, on the other hand, the answers produced by the participants to the sections in the diaries were examined and variables such as whether they were consistent with the semi-structured interview data and their level of comprehension of the subjects, they learned in practice were examined. In this study, which aimed to tap into the views of the participants about the application of this study, the diaries emphasized whether the answers were realistic and sincere. For instance, an issue that the participant said s/he understood in the interview could be evaluated by analyzing the diaries.

Ethical Considerations:

In this study, "Parent Approval Document" was used because we worked with young children. Before the implementation phase of the study, the students' parents were informed and voluntary approval was obtained from them. The confidentiality of the data was ensured by using the code name instead of the real names of the students and a written

commitment was made that the audio-visual media files of the students would not at all be used during the study period.

Validity and reliability

In this study, it was aimed to increase the data diversification. Therefore, two types of data (semi-structured audio-recorded interview questions and students' diaries) were collected. Lincoln and Guba (1985) used the "trustworthiness" of a study as the naturalist's equivalent for internal validation, external validation, reliability, and objectivity. The questions of semi-structured audio-recorded interview questions were written by the first author of this paper. The correctness of these questions was validated by three people. One of them was the experienced vice-principal of the Potential Gifted Association (PÜYED) in Bursa. She also has been working with gifted children at this association for years. The second one was a faculty member who had just completed her doctorate on gifted students. The last expert has been working as an associate professor in the faculty of education having a strong science background. These three experts in the field checked the interview questions created by the first author for clarity and made the questions that they thought incomprehensible more understandable in order to increase the internal validity (Whittemore, Chase, & Mandle, 2001) of these questions.

Reliability in qualitative research refers to the stability of responses to multiple coders of data sets (Strauss, & Corbin, 1990). In this research, the first and the second author of this paper coded the interview data independently. They did read the answers of the open ended questions independently, wrote the themes and categories, and students' views, discussed their analyses, and then, continued this process until they agreed on the questions' analysis. It was thought that having two independent coders for interview questions should also be increased the reliability of the current study. In the end, the findings obtained from semi-structured interviews and the students' diaries were compared (Lincoln & Guba, 1985) by the authors.

RESULTS

The findings were gathered under the sub-themes of using the modelling method in science, using the simulation method, using the experimentation method, using what has been learned in daily life, and comparing the lessons taught using the EPTS Curriculum Model with the formal education lessons, finding the lessons interesting and enjoyable and the role of the teacher. Furthermore, the data obtained from the diaries are also included in this section.

Modelling method was used in two lessons taught. The atomic model in one lesson and molecule model in another lesson were prepared by the participants. The students answered the questions asked in the semi-structured interviews as directly quoted in Table 3 below.

Table 3. The categories of the use of modelling method and students' views

Theme	Categories	Students' Views
Use of the Modelling Method	Learning process, use of materials, method.	*"I think it's effective. At least you see what it is, what it looks like." (S4)* *"Yes. We can't see it in real life, but it's better understood when you show it." (S2)* *"We end up learning it. The practice makes it more memorable." (S4)* *"We attended to it touching and feeling in a more three-dimensional way than we attended to it at this computer. It was good." (S3)* *"I like to design and model what I see.." (S3)*

In the answers given by the participants directly or indirectly to the questions about how the modeling method was used in the lessons taught, they emphasized that this method was enjoyable, understandable and effective. These emphases included the dimensions of process, product and learning environment, which were related to the curriculum dimensions in the relevant lessons.

In the semi-structured interview, the students were asked the following questions; "What are the effects of computer-assisted simulation method on learning?" and "How did you find the method of using computer-assisted simulation?" The findings obtained from the answers given by the students to this question are illustrated in Table 4 below.

Table 4. The categories of the theme of the use of simulation method and student views

Theme	Categories	Students' Views
Use of simulation method	Process diversification, teaching speed, exploratory learning, product/evaluation	*"I mean, I think it is more memorable by demonstrating it, rather than saying "when you go home, memorize these and memorize those" (S4)* *"I didn't know before, but I have learnt now, a lot more." (S2)* *"It was quite good. I already like doing things on the computer." (S1)* *"It is better now. We have seen them visually and heard aurally as well. we tried them out." (S3)* *"I think they should not act like our teacher. I mean, for instance, the teacher explains something, then gets us to write it down, then s/he makes us take an oral exam. Then, when we fail, he gives low mark, 40 or does the same thing to those student who are unruly. I don't think this is what it should be like. We can understand better by experimenting." (S4)*

As far as the results in Table 4 are concerned, the students stated that they found the simulation activity visually rich, instructive and catchy. The student coded S2 stated that the lesson they learned and liked the most was "the lesson conducted using simulation". In fact, in another interview where there was no simulation activity, the student coded S3 suggested that "atomic modeling activity can also be learned better with simulation". Moreover, one of the students referred to some of the situations he experienced in the

educational institution he attended full-time, saying that learning by experimentation enables him/her to understand the subject matter better.

Heat conduction, thermos construction, density and mixtures experiments were conducted in four of the courses designed according to the EPTS Curriculum Model. Gifted students carried out experiments in line with the lesson plan in these experiments and obtained some certain results. In the semi-structured interviews with the students, "What do you think is the most effective way to learn a subject in a Science class?" and "What do you think about the Science course taught through experimentation?" questions were asked. In line with these questions, the answers given by the gifted students are illustrated in Table 5 below:

Table 5. The theme of the use of the experiment method, its categories and students' views

Theme	Categories	Students' Views
Use of the experiment method	Learning method, process, learning environment, student centeredness	*"Mr./Mrs., doing it yourself. Not watching it, not reading it. doing it yourself." (S1)* *"Lecturing the subject visually and by testing it and working on it." (S3)* *"Doing experiment. If we are lectured first and then do the experiment, we learn it both practically and theoretically; Those students who are good at it can easily understand when they are lectured. But for those with visual intelligence, I think doing experiment is also very plausible." (S4)* *"…. Since you have done it before, you know what you're doing. You remember it saying, "Wow, I already did that." (S4)* *"It was nice and enjoyable. We have learnt which materials are better heat conductors and insulators." (S3)* *"Doing experiment is enjoyable and memorable. At our school, they converted the science lab into a classroom. In fact, there were so many other available venues they could convert..." (S4)*

In Table 5, the answers obtained from the students were analyzed in the form of direct quotations and divided into various categories of curriculum dimensions. Some of the participants examined the advantages of the learning by the experiment method from their perspective, and the student coded S4 stated that the laboratory in the school where she continued her formal education was converted into a classroom.

Table 6 illustrates the students' Views on using the information they obtained related to daily life from the lessons they studied within the scope of the study.

Table 6. The theme of using what has been learned in daily life, its categories and student Views

Theme	Categories	Students' Views
Use of what has been learned in daily life	Being able to transfer what they have learned to daily life, real life problems	*"I can give examples to my classmates. I can also do my project assignments based on what I have learned here." (S3)* *"For instance, if I accidentally confuse the mixtures, I can easily break them down." (S3)* *"For instance, when there is something about atoms next year, I can be 1 step ahead of everyone." (S3)* *"I can use it." (S4)* *"Sometimes when I was a kid, for instance, I didn't use it much, but now sometimes I come across it. I think as I get older I'll come across it more often." (S1)*

The students coded S4 and S1 stated that they did not know how to use the knowledge and skills they acquired within the scope of the study in daily life and that what was learned in the lessons was not often encountered in daily life. S4, on the other hand, stated that when she had a problem with mixtures in daily life, he could easily break them down based on a lesson taught.

The students were asked the following questions; "Is the Science lesson you have learnt here any different from the Science lesson at your school? If so, what is it?" and "Would you like to be taught the following Science lessons with these methods? Why?" and the results obtained from the responses provided by the students to this question are illustrated in Table 7 below.

Table 7. The theme of comparing the courses taught using the EPTS curriculum model with the formal education courses, its categories and students' Views

Theme	Categories	Students' Views
Comparison of the courses taught using the EPTS curriculum model with the formal education courses	Learning method, learning process, interest, diversity	*"…In our normal education, we sit around for forty minutes in class, but we can model and behave freely in these lessons." (S3)* *"I think the activities were good. It is because usually they plainly teach the things that such scientists have achieved. Teachers say 'memorize them, read them, I will make you all take an oral exam'. Even there is oral exam, teachers say 'read it and I will ask you to tell it again'. This is so unnecessary. The lesson is no longer pleasurable this way. Having to memorize it. I just memorize the subjects I love just by taking notes like this. Other than that, it doesn't work for me when teachers say at school 'just memorize it'." (S4)* *"I would want it." (S2)*

The students stated that they constantly sat around and did memorization in the Science classes at their schools and were not satisfied with the teaching style of their teachers. Nevertheless, they were of the opinion that this new lesson style, which included differentiated instruction, was more effective. For this, they indicated the reasons such as flexibility in the lesson and teaching method of the lesson (experimenting, practicing, modeling).

The responses to such questions as "How did you find the lessons you learnt today?" and "Do you find the lessons you learn interesting, enjoyable or pleasant? Why?" are illustrated in Table 8.

Table 8. The theme of finding the lessons interesting and enjoyable, its categories and students' Views

Theme	Categories	Students' Views
Finding the lessons interesting and enjoyable	Interest and attitude, learning methods, content, process, specific expressions	*"It was good Sir/Ma'am., it was fun." (S1)* *"It was pretty good. I already like doing things on the computer." (S1)* *"Si/Ma'am, modeling in 3D was good." (Ö1)* *"They were good lessons. I got informed." (S3)* *"It was a good activity lesson. We've learnt better." (S3)* *"İt was good fine, enjoyable. We learnt which materials were better heat conductors and insulators." (S3)* *"The lessons were fun. They were educationally beneficial." (S2)* *"It is nice to reinforce your learning by doing activities." (S3)* *"Doing experiments is nice and memorable." (S4)* *"The lessons were fun. We learned about density. We learned about the people who discovered the atom." (S3)*

As is clear in Table 8 above, the students expressed their Views about the courses by "giving reasons". During the interviews, the student coded S4 said, "…*For instance, if the lesson is fun, everybody wants to come and join it.*" emphasizing the "importance of the science lesson being fun and interesting". Furthermore, the students generally answered the question 'whether they found the lesson interesting or good' "positively". Specific to the lesson taught, to questions like "……. How did you find your lesson?", the students stated that they found the teaching methods and techniques of density, three-dimensional modeling, computer-based teaching and experimentation effective, enjoyable or interesting.

The students were asked such questions as “What do you think is the role of the teacher in a Science class?” and “What do you think the role of the teacher should be in a Science class?” and the answers obtained were listed. Table 9 below illustrates the theme, categories related to this subject and the responses of the gifted students presented by direct quotation.

Table 9. The theme of the teacher's role, its categories and students' Views

Theme	Categories	Students’ Views
Teacher's role	Content, process, product/assessment, learning environment	*“The teacher lectured on the subject first. Later, he conducted activities to make it more memorable.” (S3)* *“Each student should be dealt with individually. A student should not lag left behind about a subject so that they can cooperate together. I mean they all have to do it together at the same time. All of them need to learn well. This was the role of the teacher in this lesson..” (S4)* *“For instance, the teacher, I think, should be fun. S/he should teach with more activities.” (S1)* *“Lecturing in a way that students can easily understand” (S2)* *“I mean, the teacher teaches the lesson and then helps with the experiment.” (S4)* *“First, the teacher should explain what s/he will do, then teach the subject, and finally the conduct the activity.” (S3)* *“Making the activity fun and informative.” (S1)*

According to a gifted student coded S3, the teacher should ensure that the students are informed about the subject matter and then get the students do activities so that the information is memorable. Another student, S4 said that the teacher should attend to the students and make sure that the students do not leg behind in the lesson, adding that this is the role of the teacher in this lesson. Furthermore, such the responses as ‘the teacher should be fun and get the students to do experiments/activities’ are those given by the students.

The data obtained from the diaries consisting of what I know, what I have observed and what I have learned sections and of the texts written by the students in these sections are illustrated in Table 10.

Table 10. Findings from diaries

Diary Section	Sample Text Written by the Students
what I know	*S4: Matter consists of particles.* *S1: Substances other than gas cannot be compressed.* *S3: Solid vibration, liquid and gas substances perform all the movements.* *S2: Substances can melt, freeze, sublimate, condense.*
what I have observed	*S4: I think the practice activity is enjoyable and It will be easily memorable (I have learned molecules in the other 3D activity).* *S3: Molecule making game is just like Subway Surf game. We are trying hard.* *S1: (The student did not write anything here).* *S2: I have mixed oil with water, put play dough in it. I think it will sink. The play dough sank.*
what I have learned	*S4: Atoms are made up of neutrons, electrons and protons.* *S3: Representation of molecules* *S1: Elements combine to form molecules.* *S2: I have learned the symbols and models of some elements.*

It was observed that the gifted students who participated in the study wrote down, grade independently of the study, the knowledge and information they had learned in the sixth in the "What I Know" section of the diary. In the "what I have observed" section, on the other hand, in the practice activity implemented within the scope of the study, the student coded S3 mentioned that he tried very hard in the activity; the student coded S2, on the other hand, expressed his predictions and results while he was doing the experiment. Finally, it was apparent that the students talked about the seventh-grade topics and concepts added to the unit within the scope of acceleration in the "What I have Learnt" section.

DISCUSSION AND CONCLUSION

As far as the semi-structured interview findings are concerned, the gifted students though positively about using the methods of doing experiments, simulation and modeling. They concluded that the use of these methods affected learning positively and that it was good to participate actively by doing practice. Furthermore, they stated that such activities appealed to their visual and intelligence, and that such activities were not used at their own schools. Johnson, Boyce, and VanTassel-Baska (2013) stated that it can be more instructive for students to be personally involved in the work by doing and living in the lesson. Similarly, transforming, arranging or recreating the materials used in the lessons into a new product by the students also serve this purpose. It is possible to say that the courses enriched by the inclusion of Practical Ability skills (using experience effectively, planning the workload, concentration, aiming at a goal, taking responsibility, etc.), which are among the EPTS Curriculum Components, into the EPTS Unit, as a result of identifying the teaching methods suitable for these skills, increases the satisfaction, in-class activities, attitudes towards learning and motivation of the gifted students, who are the target audience. In such courses, which are aimed at gaining skills such as practical, analytical and creative abilities, there are similar studies that show that the lessons taught create a positive attitude towards the field/course in students and that this attitude may continue in the future (Stake & Mares, 2001; Tyler-Wood, 2000; Waiyarod, 2007). It is possible to say that the gifted students who took part in the study found the lessons they learnt regarding content, process,

product/assessment and learning environments, which were among the curriculum dimensions (Maker, 1982), successful.

In the 2018 science curriculum of the Ministry of National Education, there is the acquisition of "…investigating, criticizing, questioning, curious, identifying problems and looking for creative solutions to them like a scientist in their own lives…". This acquisition envisages the use of the learned information in daily life. With regards to the theme of putting what has been learned into practice in daily life, one of the gifted students said that s/he could easily break down the mixtures in daily life, referring to the lesson s/he took on the subject of "mixtures" within the scope of the study. Some of the other gifted students also said that they could use what they had learned in their exams and project assignments. Similar to this research, in the study that Girgin (2020) conducted, learning experiences of the gifted children through project-based learning approach were determined via reflective journals. The findings of the research indicated that gifted children have an advanced level reflective writing ability. In the same study, it was also observed that participants grounded their projects with real-life problems and made inter-disciplinary connections in their reflections. However, despite the limited responses, it turns out that clearly the students were unable to foresee how they will transfer what they have learnt to daily life. The reason for this can be attributed to the fact that the study consisted of subjects that we could not experience in real life, such as the movements of atoms, molecules and matter particles within the scope of the subject area of "Matter and Heat".

Another theme transpired as the comparison of the lesson taught using the EPTS Curriculum Model with the school the students attended within the scope of formal education. The gifted participants referred to their dissatisfaction with the learning process, product/assessment, learning environment (laboratory), and content dimensions in the schools where they attended for their formal education. Nevertheless, they made positive comments about the lessons taught within the scope of the study. From this point of view, it is possible to conclude that the reason for these particular results was that no lesson plans were prepared for the educational needs of the gifted students in the institutions where they continued their formal education and the evaluation of these students did not address their different intelligence types. As far as the content and presenting this content was concerned, a student's complaint that the existing teaching method was based on rote learning supports this argument. Furthermore, even though the semi-structured interview findings were divided into themes, it is a noteworthy result that the students stated that they found the lessons taught within the scope of the study in almost every theme interesting and enjoyable. These particular findings may be justified by the reasons that the analytical, practical and creative ability components of the EPTS curriculum enriched the teaching, thus increasing gifted students' motivation and provided them with educational satisfaction with the inclusion of advanced subjects.

There are studies (Ryu, Lee, Kim, Goundar, Lee, & Jung, 2021) in other countries that have similar findings with the current research. For example, in the book chapter cited above, the current status of STEAM education for gifted students in South Korea is presented. In addition, there are studies that investigates positive relationships between gifted education and STEAM education (An & Yoo, 2015). Specifically, in this chapter, the journey of how

South Korea has incorporated STEAM education within gifted education was explained in detail. The same researchers highlighted that gifted education has seen significant investment in the further expansion and development of specialised programs and curriculum of the STEAM education model. In their study conducted in 2015, Gündüz and Akın expressed many problems regarding the education of special education students, such as the lack of appropriate environments in public schools.

The teacher dimension, which was one of the components of EPTS, was one of the themes that transpired as a result of the transfer of the Views of gifted students. The gifted students who participated in the study expressed their Views that the teacher was the person responsible for the learning of all students, that s/he should be fun, that the lessons should be planned with appropriate teaching methods, and finally stating that this was the very role of the teacher in the sample lesson within the scope of this study as well. The findings of the research conducted by Kanlı (2011) show that accelerating in the field of science causes positive reflections on gifted students. Similarly, in Sak (2011)'s study, which found the social validity of the EPTS to be high, the fifth "Courses taught in the EPTS are interesting." and the sixth item, “The EPTS, courses are taught in different ways.” coincides with their propositions. Despite the fact that only the curriculum model was used without using the other components of the Gifted Education Program, similar results show how important the curriculum dimension is.

The possible results that can be deduced are that the teacher should be more effective in managing such processes as a requirement of the lessons taught according to the EPTS Curriculum Model, and if this came true, the students were satisfied with this situation. Furthermore, the fact that the student coded S4 made a comparison with the teacher at her own school in Table 7 can illustrates that she was sensitive about this issue.

The EPTS Evaluation Scale (EPTSES) is utilized in order to reveal the Views of gifted students participating in the EPTS program model after they were included in the program and identify whether they were satisfied with being included in the program (Sak, 2011a, 2013). While creating the items in the EPTSES, the United States National Association of Gifted Children (NAGC, 2010) standards were used and it consisted of items that included the content, process, product/assessment, learning environment and teacher dimensions of the curriculum (Sak, 2017, cited in; Avcı,2015). From this point of view, it would be useful, within the context of EPTSES, to discuss the students' Views on the EPTS Unit, which was prepared according to the EPTS Curriculum Model in the subject area of "Matter and Heat" in the Science course.

In a study his study he conducted with 84 gifted sixth grade students attending EPTS program the scope of after school, in an attempt identify the social validity of the Education Program for Gifted students, Sak (2011) found that the social validity of the EPTS model was high. In this study (Sak, 2011), in which 12-item EPTSES was used as a measurement tool, the items such as (4) The knowledge and skills learned in this program, to this effect, were also useful in daily life. (5) The courses taught in this program were interesting. (6) In this program, lessons were taught by different methods. (7) The teaching staff working in this program consisted of people who were qualified to teach gifted students.” were the

items support the results of the present study. As far as the direct quotations from the semi-structured interviews are concerned, it is obvious that the students expressed this clearly.

Among the findings obtained from diaries, which was another data collection tool, the fact that the student coded S3 explicated one part of the lesson as *"The game of making molecules is just like the game of Subway Surf. We are trying hard"* can be an indication of the fact that there was abstractness and complexity of the EPTS Unit prepared within the scope of this study in terms of content dimension and, it possessed the exploratory learning and reasoning sub-dimensions for the student in question regarding the process dimension. Similarly, in the 'What I observe' section, the that the fact that the student coded S3 noted down the predictions and results of the experiments she conducted is likely to resulted from the inclusion of EPTS analytical skills in the relevant unit and the efforts to teach the students the required skills. It is clearly observed that the concepts or subjects that the gifted students took notes of in the "what I have learned" section of the diary consisted of seventh grade subjects included in the unit within the scope of acceleration; It is possible to conclude that the acceleration method attained its objective.

SUGGESTIONS

The fact that the number of participants in the study was small and the study was carried out in a single subject area from the field of science course in a limited period of time can be mentioned as the limitations of the present study. Despite these limitations, the emerging results of this study supported those of similar studies in the relevant literature and it was found that the students had positive views on the subjects such as learning process, learning method, product/evaluation and motivation/interest about the lessons taught according to the EPTS Curriculum Model. In this respect, it is recommended that the teachers who teach the science classes of gifted students develop a lesson/unit plan based on the EPTS Curriculum Model and use it in their lessons. Furthermore, due to the time and student limitations in this study, future researchers are recommended to conduct studies with more students, in longer time periods and in different subject areas of the science course.

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