

Problems Experienced by Science and Art Center Teachers in the Project Consultancy Process and Suggestions for Solutions: A Phenomenological Research

Emin Yaşar¹

¹ Institute of Educational Sciences, Dicle University, Diyarbakır, Turkey

Correspondence: Emin Yaşar, Institute of Educational Sciences, Dicle University, 21280 Sur, Diyarbakır, Turkey.

Received: November 21, 2021

Accepted: December 31, 2021

Online Published: March 22, 2022

doi:10.5539/ies.v15n2p191

URL: <https://doi.org/10.5539/ies.v15n2p191>

Abstract

In this research, the problems experienced by the teachers in Science and Art Centers (BILSEM) during their consultancy processes of projects and the suggestions for these problems were examined. 15 teachers working in Nuray Tuncay Kara and Şahinbey Municipality BILSEMs Gaziantep Province participated in this study, which was designed in the qualitative research method and case study pattern. Criterion sampling, maximum variation sampling and easily accessible sampling were used together to determine the participants of the study. The research data were gathered with a semi-structured interview form prepared by the research group and the gathered data were analyzed through content analysis and descriptive analysis. According to the results of the research, a significant part of the participants stated that the project consultancy process provides maximum job satisfaction, that financial and cooperation problems are experienced mostly in the process in which colleague support is important in solving the problems, that a budget for projects should be planned. The findings of the research were discussed regarding the relevant literature and some suggestions were made based on the research results.

Keywords: phenomenology, problems, project consulting, Science and Art Centers, solutions

1. Introduction

Experimental studies on the education of gifted individuals who are regarded as the mines of societies started in the early twentieth century under the leadership of the United States and Germany (Enç, 2004). The institutions for the education of special talents in our country were called as “Gulamhane” during the Seljuk period (TBMM, 2012) and “Enderun” during the Ottoman period (Akkutay, 2004). The foundations of Science and Art Centers (BILSEM), which undertake the education of gifted individuals, were laid with the “Additional Course Application Schools” opened as pilots in Ankara, Istanbul, Izmir, Bayburt and Denizli (Baykoç Dönmez, 2005).

According to the Science and Art Centers Directive published by the Ministry of National Education in 2016 (Bilim ve Sanat Merkezi Yönergesi), BILSEMs are opened “in order to enable gifted students in pre-school, primary, secondary and high school to be aware of their individual abilities and to develop their capacities and use them at the highest level” (Bilim ve Sanat Merkezi Yönergesi, 2016). BILSEMs are the centers that provide special education support according to the out-of-school support education model started by the Ministry of National Education, General Directorate of Special Education and Guidance Services. They are independent special education institutions that have been established in order to ensure that gifted students attending primary and secondary education institutions are aware of their individual talents without disrupting their education in formal education institutions and that they can use their capacities at the highest level by developing them (Baykoç Dönmez, 2004). The first institution opened under the name of BILSEM is Yasemin Karakaya BILSEM, which was opened in Ankara in 1995. As of May 25, 2021, there are 191 BILSEMs in 81 provinces in our country (MEB, 2021).

In line with the general objectives and basic principles of Turkish national education, BILSEMs aim to help gifted students gain the discipline of scientific study, think interdisciplinary, solve problems and meet determined needs in line with their special abilities by means of the educational services offered at BILSEM. Furthermore, project production and development studies are based on all activities carried out at BILSEM (Bilim ve Sanat Merkezi Yönergesi, 2019).

Project production and management program, which is the last step of the five basic programs (Integration

Program, Support Program, BYF-Program, ÖYG Program and Project Program) carried out in BILSEMs refers to the training program that is carried out in accordance with the interests, wishes and abilities of the students and that students perform individually or with a group under the guidance of a consultant teacher. When the application principles of this program are examined; the student in the project production and management program is obliged to prepare at least one project in each academic year within the subject of the project determined under the guidance of the advisor teacher. The subject of the project may be primarily from the field of education in the ÖYG Program, or it may be from other fields. In this process the advisor teacher directs the student-based project rather than conveying information. Additionally, the advisor teacher prepares the project proposal form, a minimum project progress report and the completed project report in the BILSEM Module. If the student is not able to produce a project, the advisor teacher presents the reasons for the situation to the teachers' board in a written report (Bilim ve Sanat Merkezi Yönergesi, 2019).

The ability of students to deal with real life problems depends on their observing carefully the environment they live in and concluding the events developing in their environment by making sense of them by establishing cause-effect relationships. In this context, priority should be given to raising creative individuals who think, scrutinize and access information. Therefore, it should be aimed for individuals to gain skills such as making decisions, applying knowledge and skills, transferring knowledge and skills, sharing knowledge and thoughts, asking new questions, developing products and suggesting ideas (Demirhan, 2002).

In order for students to acquire the mentioned skills, more importance is given to project studies in educational institutions. It is very crucial for students to undertake individual learning responsibilities during the project development process and to be able to solve a problem concerning the project goals or to obtain a product at the end of the project in terms of gaining self-confidence. Teachers who play an active role in project management by advising students are encouraged to develop individual projects in addition to this practice. As a result of the effect of the modern change in education and training services on the expectation in the perspective of teachers; it is inevitable that students should be individuals who have entrepreneurial, critical and creative thinking and inquisitive approach skills. Thus, teachers prepare various projects in order to increase their professional competencies and meet modern expectations or they manage their projects by consulting student projects (Arabacı & Akıllı, 2019).

Abernathy and Vineyard (2001) and Grote (1995a, 1995b) defined project competitions as places where students interact with academic scientists, peers, teachers and people who are different in terms of socialization, discuss their projects and other projects and share their knowledge. Participation in project competitions contributes to learning in a constructivist framework. Students learn permanently by acquiring and using new information through reading, observation and experiments. Collaborative interactions with peers, counselors, parents, and teachers also enhance the experience (Balas, 1998).

Project competitions are carried out in the classroom among several classes within the school, at the district or provincial level, that is, at the local level, as well as at the national and international level. When national-scale project competitions are examined, it is seen that these competitions are organized by schools, district or provincial directorates, municipalities, ministries, associations, non-governmental organizations, private companies and other public institutions. Most of the project competitions are organized for once only. Furthermore, project competitions are traditionally organized by private and public institutions (Güncel Eğitim, 2020).

There are some principles necessary to ensure the effectiveness of project work. These can be listed as follows (Saban, 2000):

- The subject of the project should be checked and approved by the advisor teacher.
- The subject of the project should be suitable for the cognitive, physical and social level of the students.
- Tools and equipment to be used in the project process should be obtained and students should be able to use them appropriately and safely.
- Project topics should be focused on revealing and developing their talents in accordance with the interests of the students.
- Projects should be flexible and applicable so that students can complete them outside of school as well as at school.

Fisanick (2010) listed the expectations from the teachers during the project consultancy process as follows:

Teachers:

- They should provide the necessary pedagogical support for students to cope with the stress they feel and to

achieve success.

- They should provide the necessary support to meet the needs that will arise at the level of resources, expertise and guidance in order for students to gain success and experience.
- They should support interdisciplinary studies in projects and enable them to find a holistic solution to the problem.
- They should enable students to participate in various project competitions.
- In order for various institutions and organizations to support the project as stakeholders, studies should be carried out to establish partnerships.
- They should provide the necessary support at the point of participation of a produced project on different platforms.

1.1 The Aim of the Study

The aim of this research is to determine the problems experienced by BILSEMs during the project consultancy process and the suggestions for these problems. Thus, the answers to the following questions were searched in this study:

- 1) What is your general assessment of the project consultancy process?
- 2) What are the problems you experience during the project consultancy process?
- 3) How did you find solutions to the problems you experienced during the project consultancy process?
- 4) What are your suggestions for solutions to the problems in order to make the project consultancy process more efficient and effective?
- 5) What are the contributions of the experiences you gained during the project consultancy process to your professional and personal life?

2. Method

2.1 Study Design

This study was carried out in qualitative research method and phenomenology design. In the phenomenology design, it is tried to determine what the experiences of individuals regarding any phenomenon are and how they make sense of these experiences (Creswell, 2007). One of the strongest aspects of phenomenological study is that it offers the researchers the opportunity to understand and make sense of an experience lived by the individual. In spite of this opportunity; the limitations of the phenomenological design are the unsuitability of the generalization of the findings, the difficulty of determining the appropriate participants, and the difficulty of determining the researcher bias (Giorgi, 1997). In this study, it was found suitable to use the phenomenology pattern, as it focused on how 15 teachers working in Nuray Tuncay Kara and Şahinbey Municipality BILSEMs in Gaziantep Province as of the 2020-2021 academic year, made sense of their project consultancy experiences. As a result, the problems experienced by the teachers working in BILSEMs during the project consultancy processes and the solution proposals they produced for these problems were tried to be revealed in the perspective of their own explanations.

2.2 Participants

This study consists of 15 teachers working in Nuray Tuncay Kara and Şahinbey Municipality BILSEMs in Gaziantep Province as of the 2020-2021 academic year. The participants of the study were determined by means of purposive sampling method. Criterion sampling, maximum variation sampling and easily accessible sampling, which are among the purposive sampling methods, were used respectively to determine the participants. Criterion sampling is the study of all situations that meet a predetermined set of criteria. The criterion is created by the researcher or a previously prepared criteria list can be used (Marshall & Rossman, 2014). Criterion sampling is a useful method in selecting the most suitable participants for the situation examined in the research (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2009). For this reason, criterion sampling was used primarily in order to collect more in-depth data in the research. The sampling process started with the determination of participation criteria. Accordingly, the criterion for participation in the research is to be a teacher who works as a permanent teacher in the BILSEMs in Gaziantep and carries out project consultancy. In the process of determining the participants, the attention was given to the fact that the teachers were in different branches, and the maximum diversity sampling was carried out. Finally, 15 teachers were interviewed by using the easily accessible sampling method for the teachers who were suitable for the mentioned participation criteria.

The participating teachers work in 11 different branches in Nuray Tuncay Kara and Şahinbey Municipality

BILSEMs in the center of Gaziantep. In conclusion, 15 BILSEM teachers, from whom the research data were gathered, were determined by means of the easily accessible sampling method, considering the application possibilities for the teachers who were suitable for the determined criteria.

2.3 Data Collection Tools

Based on the fact that it is not possible to observe every behavior of individuals, interview is a form of data collection that is mostly used in social science studies to decide how they reveal their feelings, thoughts and behaviors (Merriam, 2009). Accordingly, in this study, a semi-structured interview form was developed in order to determine the problems faced by the teachers who carry out the project consultancy task and what their suggestions for the solution of these problems are. Before the form was developed, the relevant literature was scanned in detail and the studies on the research topic were examined. There are 5 questions regarding the research problem in the semi-structured interview form. These questions were prepared and asked in order to determine how the participants evaluated the project consultancy process in general, what problems they had in this process, how they found solutions to these problems, what their suggestions were for the project consultancy task to be carried out more effectively, and how the experiences gained by the teachers during the project consultancy period contributed to their professional and personal lives.

The development of the data collection tool was carried out in a five-stage process. Accordingly, first of all, as mentioned above, the literature on the research problem was scanned in detail, similar studies were examined and a draft interview form was developed. In the second stage, the draft form was presented to the expert opinion. "Having worked in the field of project consultancy" was determined as a criterion in the determination of these experts. Thus, a draft interview form was presented to two faculty members who conduct scientific research in the field of project consultancy and three BILSEM teachers who were eligible to participate in the finals of the 2204-A/2204-B High School/Middle School Students Research Projects Competition held by the Scientific and Technological Research Council of Turkey (TÜBİTAK). The draft form was prepared in accordance with the suggestions that emerged as a result of the examination made by the field experts. The form prepared in the third stage was presented to the opinions of a faculty member working in the field of measurement and evaluation, and the form was rearranged in accordance with his suggestions. In the fourth stage, a draft form was presented to three teachers who had similar qualifications with the participant group and were not included in the participant group, and their suggestions were received. In the last stage, the interview form was presented to the opinion of a BILSEM teacher who had a postgraduate study in the field of Turkish Language and Literature, and the form was given its final form.

2.4 Data Collection

The research data were collected through face-to-face interviews with the participants. For this purpose, a preliminary interview was held with each participant to determine the place and time to be interviewed. Additionally, in this preliminary interview, the participants were informed about the scope and objectives of the research. Before the interviews, the permission was obtained from the participants for audio recording. All the participants consented to audio recording. Furthermore, according to Creswell's (2007) suggestions for ethical rules to be followed in qualitative research, before starting the interview, it was stated that the participants were free to take part in the study, that they could answer the questions as they wished, and that they could end the interview at any time. Held in BILSEMs, the interviews took an average of thirty minutes.

2.5 Analysis of Data

While analyzing the data in this research, a systematic way was adopted in accordance with Creswell's (2007) suggestions and the analysis of the data started with the organization of the obtained data. Firstly, audio-recorded interviews were transcribed and 59 pages of raw data were obtained. Then, the texts arranged according to the order in which the interviews were made were read by the researcher three times with an interval of two days in order to get a command of the whole data. The researcher carried out the coding process using content analysis. In order to ensure objectivity, the coding process was repeated by an independent researcher. Later, the themes and codes reached by the two researchers through content analysis were brought together, focusing on similar and different aspects between the themes and codes, and in this way, the final codes and themes were reached. In order to support the findings of the research or to emphasize the important points, the statements of the participants were directly included in the appropriate sections.

2.6 Credibility, Transferability, Consistency, and Verifiability

Different methods can be used to ensure credibility, transferability, consistency and confirmability in qualitative research (Yıldırım & Şimşek, 2011). Accordingly, long-term interview and participant confirmation methods were

used to ensure credibility in the research. The interviews were tried to be kept as long as possible and detailed data were collected by giving necessary information before the interview. Moreover, after the audio-recorded data was recorded on paper, each interview was presented to the participants for participant confirmation; they were asked to indicate the points they would like to add or remove. It was determined that four participants made additions to the interview text on paper. Detailed description and purposive sampling were used in the research to ensure the transferability (Başkale, 2016), which is mostly carried out to allow the steps followed in a qualitative research to be followed in other studies. Thus, the research process as a whole is described in detail; In particular, the identification of the participants and the logical path followed in data collection were presented in detail. Consistency review method was used to ensure consistency; so, the research was explained in detail to a faculty member in the field of project consultancy and the related faculty member was asked to examine the research in terms of integrity and harmony. As a result of the consistency analysis carried out by the expert, it was concluded that the research as a whole displayed a consistent appearance. At the last stage, the themes and codes generated from the raw data were shared with the lecturer who conducted the consistency analysis in order to ensure confirmability. This faculty member was asked to confirm the harmony between the raw data and the themes and codes, as well as the themes and codes, and to indicate his suggestions, if any. In this way, it has been determined that the process of data analysis has integrity.

3. Results

As a result of the content analysis made from the obtained data, the research findings are gathered under five basic dimensions, which are listed as “project consultancy process in general”, “problems in the project consultancy process”, “solutions to the problems experienced in the project consultancy process”, “suggestions for making the project consultancy process more efficient and effective” and “the contribution of the experiences gained to professional and personal life”. While reporting the findings of the research, the opinions expressed by the participants regarding each question were brought together in the form of coding, and the relationship between the coding and the categories developed from the coding was presented in figures. The categories concerning each dimension and the codes that make up those categories were presented by quoting the participants’ views. The codes (P2, P15, etc.) were given to the participants in the presentations made by quoting exactly.

Dimension 1: Project Consulting Process in General

The opinions of the participants regarding the dimension of “Project Consulting Process in General” and their frequency of expression are presented in Figure 1. In Figure 1, it is seen that the opinions expressed by the participants about the project consultancy process in general are grouped under two headings. In these topics, the participants describe the project consultancy process as “providing maximum professional satisfaction” and “a long-term marathon”.

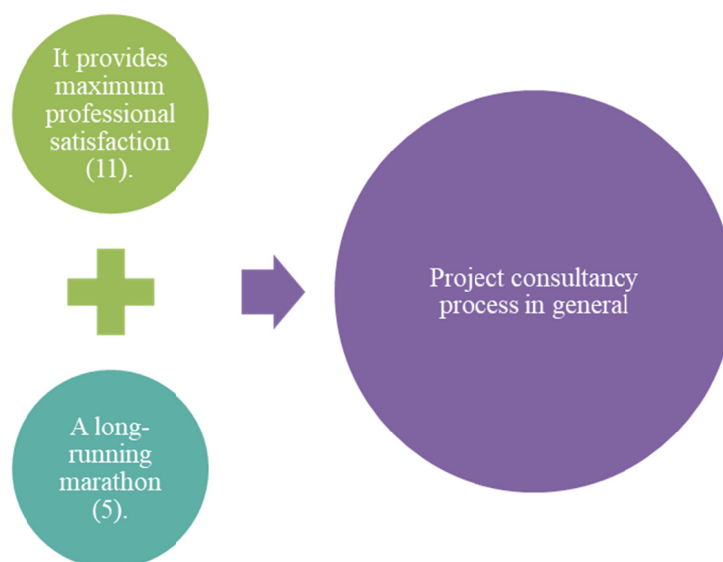


Figure 1. Participant views and frequency of expression regarding the project consultancy process in general

Provides Maximum Professional Satisfaction

Most of the participants stated that the project consultancy process generally provided a high level of professional satisfaction and contributed in many ways. In this situation, the participants expressions were summarized in these terms; “...You feel like you are a teacher. It produces countless learning environments for both the student and the teacher as a consultant” (P7) and “...As the project progresses, aside from getting tired, the level of motivation rises unexpectedly. I can closely follow and enrich my student’s learning processes. As my student’s curiosity and questions increase, I feel the need to study more.” (P9). It can be understood from these statements that the participants were generally satisfied with the project consultancy process, that they developed themselves professionally because they were involved in this process, and that they believed that if such a process was encountered, it should be evaluated.

A Long-Term Marathon

Some of the participants saw the project consultancy process as a long-term marathon in general. This situation was shown by means of the expressions of the participants; “...Until we see the finish line, that is, until the project is completed, I and my student have improved in many ways” (P1), “...Even though it is a long and tiring process, it is a great feeling to be able to produce a product and find a solution to a problem. I believe that the permanence of our learning has increased, especially since I have worked with the student I mentored for a long time.” (P8) and “...Although the consultancy schedule is long, I use the time efficiently as I progress in a planned and programmed manner. I cannot say that there were no moments when we paused, rested, questioned sustainability when we were tired.” (P11). These statements show that the participants generally thought that the project consultancy process was similar to a race because of the long and project competitions.

Dimension 2: Problems Experienced in the Project Consulting Process

The opinions of the participants regarding the dimension of “problems experienced in the project consultancy process” and their frequency of expression are presented in Figure 2.



Figure 2. The participant views and frequency of expression regarding the problems faced in the project consultancy process

As seen in Figure 2, the opinions of the participants regarding the problems they faced during the project consultancy process are grouped under five headings as “student level”, “financing”, “cooperation”, “communication” and “evaluation”.

Student Level

Some of the participants stated that the students they consulted during the project process did not have sufficient

pre-learning in the general steps of project writing, scientific research skills and project subject area. This situation was summarized with the expressions of the participants, "...Most of my students are unaware of the stages of project preparation and come only with ideas." (P6), "... During the project consultancy process, it takes a lot of time for me to complete my students' prior knowledge and have them evaluate their ideas in terms of applicability." (P9) and "... During my consultancy process, I have the most difficulty in ensuring that the aim of the project is suitable for scientific research. In addition, the review of the literature and the lack of sufficient prior knowledge in the subject area prolongs the project process." (P12). These statements show that the participants faced significant student level problems during the project consultancy process.

Financing

A significant portion of the participants stated that they had problems in obtaining financing during the project consultancy process and that they had difficulties in solving the problem. This situation was summarized with the expressions of the participants; "...Projects are generally focused on product development. Many of them are sensors, software, etc. contains technological components. The acquisition of these components, most of which are imported, poses a serious financial burden. We have to meet these expenses sometimes from the parents of the students, sometimes from the budget of the institution, and sometimes from our own pockets." (P1) and "...I usually cover the financial expenses we need in the project with my own means. Because the parents think that the expenses should be covered by the institution. The institution, on the other hand, demands that the ownership, including intellectual rights, should be covered by the parents, as the students participating in the project. I'm always in between. Instead of staying in between, I cover the financial expenses myself. Sometimes I make revisions in the project that will reduce the budget." (P12). These statements indicate that the participants had problems in obtaining financing during the project consultancy process, and this problem stemmed from the uncertainty of who should cover the expenses.

Collaboration

Some of the participants stated that they had problems in cooperation with stakeholders during the project consultancy process and that they had difficulty in dealing with this problem. This situation was shown with the expressions of the participants; "...We need to cooperate with some institutions, especially universities, in projects. While this is sometimes in the form of an interview or, obtaining information, sometimes it may include the use of places such as a laboratory or different places. When we go to the relevant institution, we have a hard time finding a person to contact. We can feel that they do not want us to use their own units. That's why we solve the problem by the people that we know well." (P4) and "...In order to make the project meaningful and valuable we endeavor to include the relevant stakeholders in the project. But I can't say that every institution is willing to do this. If I can't find a way with the people I know, I give up, the reason for this is that I know I'm going to get rejected. Another difficulty in collaborating is bureaucratic correspondence. Since there are no people who care about them, I personally follow every article." (P8). These statements can be interpreted as that the participants have problems in cooperation in the project consultancy process, and this problem arises from the legislative gap and the reluctance of the institutions.

Communication

Some of the participants stated that they had problems in terms of communication during the project consultancy process and that they had difficulties in eliminating this problem. This situation is summarized with the expressions of the participants; "...I find it very difficult to reach parents. It is almost impossible for us to meet face to face. They don't want to spend the time, but they want the child to do a project as well." (P14) and "...I have difficulty explaining the contributions of the project process to the students and parents. The parent focuses on the success of the child in the practice exams. The student involuntarily acts at the request of his parent. The institution administration states that learning activities should be project-based. And I'm trying to be the bridge of communication between all of this and resolve the disagreements." (P3). Based on these statements, it can be claimed that the participants faced communication problems during the project consultancy process, and this problem stemmed from the differences in perspectives among parents, institutions and other stakeholders.

Evaluation

Some of the participants stated that they had problems in terms of evaluating the projects during the project consultancy process and that they had difficulties in eliminating this problem. This situation was understood with the expressions of, the participants; "...When the project that we worked on all year was eliminated at the first stage, the project seems to be worthless. In fact, I get even angrier when I see that some of the projects that received a degree are copy-paste from what has been done before." (P11) and "...There were those who received degrees from the projects we prepared just to reach the number given by the institution. How can I trust that it is a

sound assessment? That's why I'm looking to increase the number and fields of my consultancy projects and get a degree. Otherwise, I am considered a failed teacher or a non-working teacher." (P10). These statements can be interpreted as an indication that the participants had problems in the evaluation of the projects during the project consultancy process, and that this problem stemmed from the lack of transparency in the evaluation process and the fact that the projects that did not receive a degree in the competitions were considered worthless.

Dimension 3: Solving the Problems Faced

The opinions of the participants about what they did to "solve the problems faced" and their frequency of expression are presented in Figure 3.

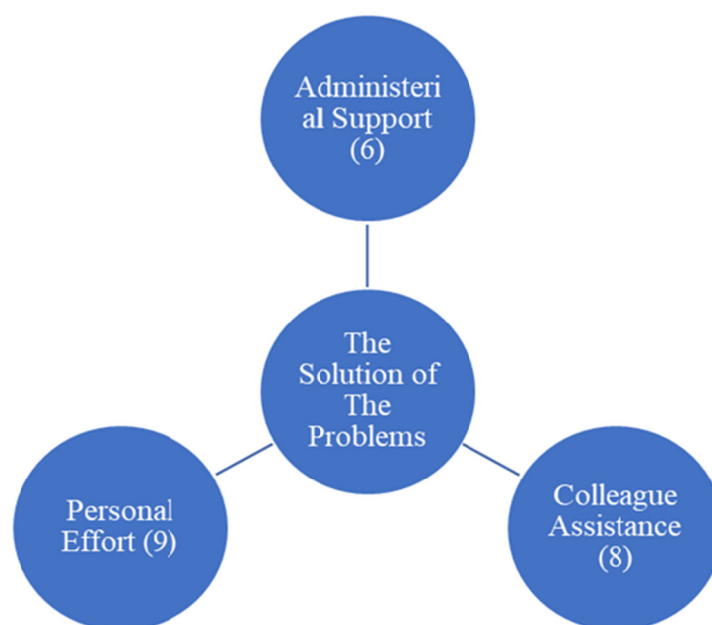


Figure 3. The participants' views and frequency of expression regarding what was done to solve the problems faced during the project consultancy process

In Figure 3, what the participants did to solve the problems they faced during the project consultancy process can be grouped under three headings as "administerial support", "personal effort" and "colleague assistance".

Administerial Support

Some of the participants stated that they received support from the administrators of the institutions they worked with to solve the problems they experienced during the project consultancy process. This situation was shown with the expressions of the participants; "...I often get support from the assistant manager in the procurement of high-cost materials during the project process." (P8) and "...My institution manager helps me when I get stuck at the point of cooperating with other institutions on official permissions." (P14). These statements may be an indication that the participants encountered various problems during the project consultancy process and that they solved these problems by getting help from the institution administrators. These expressions reveal the importance of institution administrators in solving the problems encountered in the process.

Personal Effort

Most of the participants tried to solve the problems they experienced during the project consultancy process by making personal efforts. This situation was inferred from the expressions of the participants; "...As a consultant, I have to solve the problems that arise during the process. Otherwise, the project is wasted. Even if I can't solve it myself, I reach out to someone who can solve it." (P15) and "...I reach all the resources I can reach, especially the internet, for the solution of every problem. Although it may take time sometimes, if I don't give up, I somehow solve the problem." (P7). These statements indicate that the participants encountered various problems during the project consultancy process and in order to solve of these problems, they forced themselves to cope with by making personal effort.

Colleague Assistance

Some of the participants tried to solve the problems they experienced during the project consultancy process by getting help from their colleagues. This situation was inferred from the expressions of the participants; “...*The fact that one of my cohorts has been a project consultant for a long time has helped me a lot. It can be said that I learned a lot from him, especially in the early days.*” (P1) and “...*I have experienced friends in the institution. Although not all, I can get help from a few of my friends in solving problems. In fact, I want more frequent support in multi-disciplinary projects where different fields come together.*” (P5). These statements can be interpreted as an indication that the participants encountered various problems during the project consultancy process and that they tried to solve these problems by getting help from both their own branches and their colleagues in other branches.

Dimension 4: Suggestions for a More Effective Project Consulting Process

The opinions of the participants on the theme of “suggestions for a more effective project consultancy process” and their frequency of expression are presented in Figure 4.

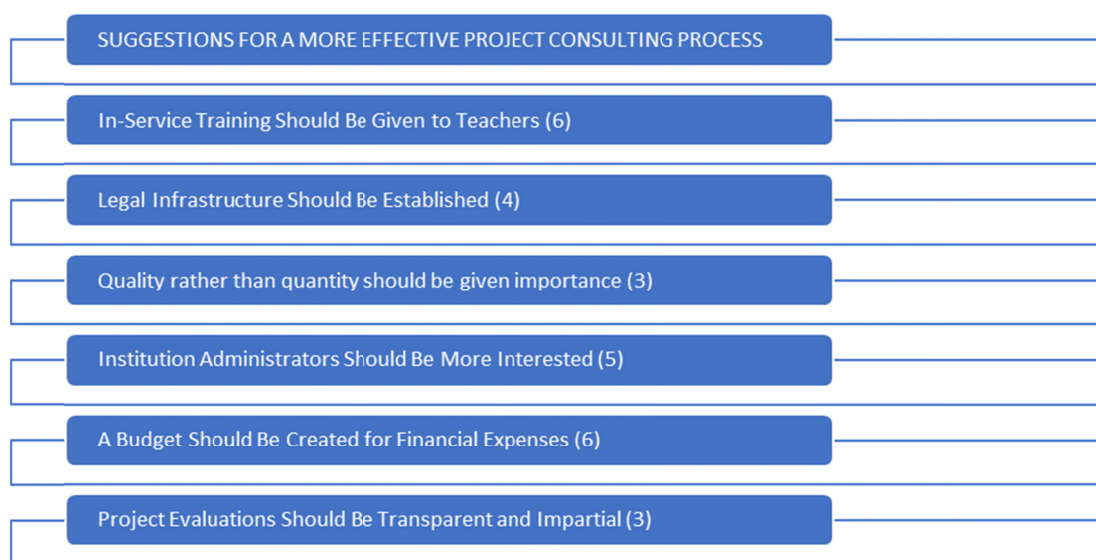


Figure 4. Participants' views and frequency of expression on what needs to be done for a more effective project consultancy process

In Figure 4, the opinions of the participants on what needs to be done for a more effective project consultancy process are grouped under six headings such as “teachers should be given in-service training”, “legal infrastructure should be established”, “quality should be given importance rather than quantity”, “institutional administrators should be more concerned”, “A budget should be created for financial expenses” and “project evaluations should be transparent and impartial”.

Teachers should be given in-service training

Some of the participants stated that in-service training should be given to the teachers who will provide consultancy for the project consultancy process to be more effective. This situation was inferred from the expressions of the participants; “...*A qualified in-service training on project consultancy should be given to those appointed to the BILSEM as teachers. Considering that project-based education is essential in the institution, such a training is essential.*” (P3) and “... *Before doing project consultancy, an in-service training should have been given where I could practice. In short, the process becomes more tiring with the logic of “make it up as you go along”.*” (P10). These statements reveal the fact that the participants needed a qualified in-service training before starting the process for the teachers who would provide consultancy for the project consultancy process to be carried out more effectively and to solve some of the difficulties that may be experienced.

Legal Infrastructure Should Be Established

Some of the participants stated that there was a need for a legal infrastructure in which duties and responsibilities were clearly defined in order for the project consultancy process to be more effective. This situation was inferred

from the expressions of the participants; “...Having a legislation specifying the duties and responsibilities of internal and external interlocutors will make the process more effective. It will also prevent wasting time.” (P2) and “...State institutions check whether there is an official letter. If there is an official letter, the process will be managed better.” (P4). These statements show that the participants needed a legal infrastructure in order to carry out the project consultancy process more effectively and to overcome the problems experienced.

Importance should be given to quality rather than quantity

Some of the participants stated that in order to make the project consultancy process more effective, the quality of the project should be given importance rather than the number of projects. This situation was inferred from the expressions of the participants; “...The goals of doing five projects or ten projects reduce the quality of the projects. In universities, there should be an upper limit on the number of project advisors, such as the quota for graduate students of faculty members.” (P12) and “...I find it very difficult to follow up when there are too many projects. In this case, I cannot follow the students.” (P13). These statements show that the participants thought that the project consultancy process could be more effective not with many projects, but with solid and qualified projects.

Institution Administrators Should Be More Interested

Some of the participants stated that the administrators in their institutions should show more attention in order to make the project consultancy process more effective. This situation was shown with the expressions of the participants; “...Unfortunately, our administrators come to the fore only when the project receives an award. It will be appropriate for them to show sufficient care and attention while the project continues.” (P2) and “...When giving project consultancy duties, our administrators, who know no boundaries, say to try to deal with them with parents when we need it. Sometimes they make endless promises and delay the project process.” (P13). These statements reveal that the participants needed to be more involved with the managers and assistant principals of the institution in order to make the project consultancy process more effective.

A Budget Should Be Created for Financial Expenses

Majority of the participants stated that a budget should be created in order to carry out the project consultancy process more effectively. This situation was understood from the expressions of the participants; “...Sometimes I feel like a beggar. Most of the time, I pay the expenses myself so that my student does not get discouraged.” (P11) and “...The monthly usage fee of the software we needed in our last project that I consulted was \$800. My effort to cover this expense was more than my effort in all other processes. Material needs, transportation, etc. A budget should be created within the institution or within the ministry for the expenses.” (P6). These statements reveal the importance of providing the participants with the financial support they needed in the projects in order to make the project consultancy process more effective.

Project Evaluations Should Be Transparent and Impartial

Some of the participants stated that in order to make the project consultancy process more effective, the evaluations of all institutions, especially TÜBİTAK (Turkish Scientific and Technological Research Council) should be transparent and impartial. This situation was inferred from the expressions of the participants; “...TUBITAK does not explain how many points those who received degrees got. We can only see the points in the eliminated projects. Frankly, there are times when I think things are different.” (P15) and “...The project evaluation scales explained are very general. The preparation of detailed evaluation scales is necessary to identify the deficiencies. We hear a lot of reports that the assessments are not fair. They should also report the individual results of the juries who made the evaluation.” (P3). These statements reveal the opinion of the participants that evaluation scales should be more detailed and the results of all raters should be explained in order for the project consultancy process to be more effective.

Dimension 5: Contribution of Experiences to Professional and Personal Life

The opinions of the participants regarding “the contribution of the experiences gained to life and their frequency are presented in Figure 5.

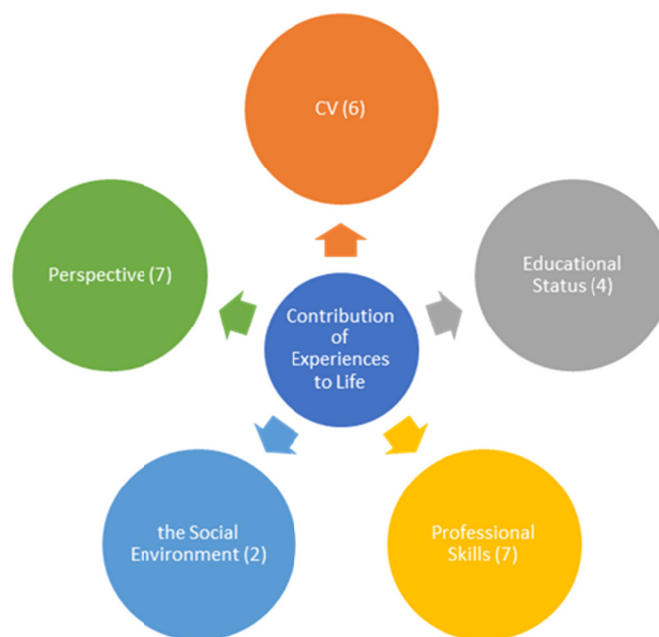


Figure 5. Participants' views and frequency of expressions regarding the contribution of the experiences gained during the project consultancy process to life

In Figure 5, the opinions of the participants regarding the contribution of the experiences gained during the project consultancy process to life are based on “curriculum vitae [CV]”, “educational status”, “professional skills”, “social environment” and “perspective (vision)”. It is seen that they are gathered under five headings in the form of contribution.

Contribution to CV

Some of the participants stated that consulting projects contributed to their CVs. This situation can be summarized with the expressions of the participants; “...The awards from the projects I consulted started to make a positive contribution to my CV.” (P11) and “...I cannot deny the benefits of getting a Turkey degree, especially at TUBITAK 2204, for my résumé. In new project applications, the projects and degrees you have been involved in the past are important.” (P12).

Contribution to Education Status

Some of the participants stated that project consultancy contributed to their personal education situation. This situation is understood from the expressions of the participants; “...As I became a project consultant, my courage to pursue a master's degree increased. I think the logic of thesis work and project work is the same.” (P8) and “...Before I became a project consultant, I never thought I would do a PhD. The process proceeds similarly to graduate education.” (P5). These statements can be proof that project consultancy contributes to the graduate education of the participants, and thus they are graduates of master's and doctoral degrees.

Contribution to Professional Skills

Some of the participants stated that being a project consultant contributed to their professional skills. This situation was shown with the expressions of the participants; “...Professional project consultancy process has contributed a lot to me. I can say it helped me get rid of the monotony in my industry.” (P3) and “...This process provides a high level of professional satisfaction. During the counseling process, I have the opportunity to learn and practice new things as much as my students.” (P10). These statements reveal the fact that project consultancy contributes to the professional development of the participants.

Contribution to the Social Environment

Some of the participants stated that providing project consultancy contributed to their social environment. This situation was shown with the expressions of the participants; “...I have to work with many people and organizations during the project process. Thus, you have acquaintances from many fields and institutions.” (P4) and “...I had the opportunity to meet many academics thanks to the projects. In addition, we came together with

experts at project exhibitions and developed new joint projects.” (P7). According to these statements, it can be claimed that project consultancy contributes to the expansion of the participants’ social circles.

Contribution to Perspective (Vision)

Most of the participants stated that providing project consultancy contributed to their perspectives (visions) on life. This situation was shown with the expressions of the participants; “...I learned to look at problems from different angles in each project work. This allowed me to gain a lot of experience.” (P11), “...Completion of each project leads to the beginning of the next project. Sometimes working that deep pushes, you to work on more than one problem.” (P9) and “...It definitely adds a lot. My view of life has changed and I had the opportunity to look at different fields in an extraordinary way” (P12). These statements reveal the fact that project consultancy contributes to the development of participants’ perspectives on life, in other word, their visions.

4. Discussion

The first finding gained in the research is related to the general evaluations of the teachers regarding the project consultancy process. Accordingly, the teachers who provide project consultancy see this process as a long-term marathon, but they also evaluate that the process provides maximum professional satisfaction. Considering the statements of the participants, it is understood that the teachers were generally satisfied with the project consultancy process and they thought that their experiences in this process would contribute to them in different ways. This finding of the study seems to be compatible with the research finding made by Sözer (2017). Additionally, the statements of the participants that the project consultancy process contributes to their professional development can be seen as important in terms of the effectiveness of the process. The enrichment activities in BILSEMs are based on project-based learning, and students carry out individual or group project studies in these activities (Gökdere & Ayvaci, 2004; Sezginsoy, 2007; Bilim ve Sanat Merkezi Yönergesi, 2016). Thus, the contribution of teachers in BILSEMs to their professional development is crucial in terms of serving the purposes of institutions. This finding is also noteworthy in that it shows that it is important to improve the functioning of the process by eliminating the problems faced in the consultancy process. Another finding of the study is that the most important problems faced by teachers in the project consultancy process were financing and cooperation problems. Moreover; student level, communication and evaluation problems emerged as other problems experienced by the teachers participating in the research during the process. This finding is compatible with the findings of the studies belonging to the studies of Aydın, Bacanak and Çepni (2013), Baki and Tümer (2009), Önen, Mertoğlu, Saka, and Gürdal, (2010), Özel and Akyol (2016), and Öztuna Kaplan and Diker Coşkun (2012). It is found out that the finding of this study is similar to the findings of the studies belonging to Oğuz Ünver, Arabacıoğlu, and Okulu (2015) in that teachers have expectations in order to produce original ideas by collaborating with other teachers and academicians. Furthermore, it was found out that the teachers faced difficulties in the project preparation process due to family, other reasons and financial difficulties.

When the statements of the participants of the present study regarding the communication problems they experienced were carefully examined, it was understood that they encountered some situations in which these concerns were confirmed. While the sources of the communication problem varied according to the participants, the students, parents and school administration were repeated most frequently. Therefore, this result is similar to the result of Özel and Akyol (2016) in their study in which the moral support of school principals is very important in motivation and encouragement. However, the reason why the cooperation issue is not completely clear may be that the stakeholders changed in each project. The fact that the cooperation is completely left to the consultant pushes the participants to carry out projects with fewer stakeholders.

Another finding of the study shows that counseling teachers mostly resorted to colleague support and individual efforts to solve the problems they experience. An interesting point to be emphasized at this phase is that while teachers were trying to solve the problems they encounter with the support of their colleagues or with their individual efforts, they almost never mentioned the parents of the students, who were the main element of the project. However, only one of the teachers participating in the research stated that they sought help from the parents of the students in solving the problems they experienced. Accordingly, it can be thought that the teachers who could not get enough support from the parents of the students tried to solve their problems on their own or by getting help from their colleagues. Although the teachers participating in this study did not emphasize the parents of the students among the problems they experienced, it is seen that a number of findings were found in the literature on this issue. For example, Artvinli, Çetintaş, and Terzi (2020) stated that the school administration could not help in solving the problem that the teachers experienced in the preparation of presentations and visuals, but they tried to solve this problem by asking for support from their parents and teachers.

Another finding that was found in the research is about the thoughts of the teachers for a more effective project

consultancy process. Accordingly, it is seen that the teachers providing project consultancy emphasized that the financial opportunities enabled the projects to be more effective and that most of the possible problems could be eliminated by giving in-service training to the teachers before the project consultancy process starts. When the relevant literature was examined, it was seen that similar findings were found out on the subject. For example, the findings obtained from the research conducted by Özel and Akyol (2016) with 13 teachers who participated in the “This is My Work (BBE) Project Competition”, eight of the teachers stated that one of the most important problems they experienced while preparing a BBE project was the lack of financial means. A similar result was found out in the research of Artvinli, Çetintaş, and Terzi (2020).

The participants of this study stated that having received practical training on the project consultancy process was one of the most important determinants of the effectiveness of the project consultancy process and that the teachers who would provide consultancy should eliminate the problem of knowledge and experience about project consultancy. Johnson (2015) stated that after long teaching sessions and intensive workshops, teachers usually listen to a method or approach that is unrelated to their classroom environment in in-service training, which has nothing to do with their teaching style. A similar thought was expressed by Artvinli, Çetintaş, and Terzi (2020). The participants also stated the necessity of an effective in-service training with practice. Finally, the research findings show that the project consulting process makes a significant contribution to the vision and professional skills of teachers. Similarly, it is understood that some other teachers see participation in the relevant process as a contribution to their background. When the relevant literature is examined, it has been revealed that the project consultancy process makes a significant contribution to the development of teachers in different points. The teachers stated that as they gained experience, they were more willing to counsel. This situation can be regarded as an indicator of vision change. They also stated that the degrees obtained from the projects had many positive effects. They emphasized that they obtained various awards from the managers in addition to the pleasure of personal success. One of the findings of the study is that the teachers thought that project consultancy would contribute to their CVs. This finding suggests that some teachers’ project counseling aims to improve themselves professionally and to increase the quality of their CVs. In this context, it can be argued that project counseling has a significant impact on the shaping of teachers’ professional lives.

When the results based on the opinions of the teachers participating in this are evaluated as a whole, it is understood that the teachers found the project consultancy process positive despite some problems they experienced and were happy to provide consultancy. From this point of view, it is thought that the measures to be taken to increase the effectiveness of project consultancy are important. On the other hand, especially in recent years, project-based studies have been increasing rapidly in the international arena. It can be said that the use of the experiences gained in the management of some social projects other than student projects will contribute to BILSEM teachers at the micro level and all teachers at the macro level. The findings of this study, which point out that the teachers who carry out the project consultancy regard the knowledge, skills and experiences they have gained valuable, support this situation. Based on the fact that the results of the research reveal that teachers experience various problems due to the lack of cooperation and financial opportunities, it can be suggested that the legal infrastructure should be established for the project consultancy process, that the practical in-service training activities for teachers should be increased and that the financial opportunities provided should be strengthened by creating a budget for the projects. Furthermore, considering the result that teachers benefit from the project consultancy process and taking into account the number of teachers in Turkey, it can be stated that the measures to be taken for more teachers to benefit from these trainings are important. Finally, considering that the method and design adopted by the research are not suitable for the generalization of the results, it can be suggested that performing similar studies with different samples and producing more research findings on the subject will contribute to the effectiveness of the project consultancy process.

References

- Abernathy, T. V., & Vineyard, R. N. (2001). Academic Competitions in Science. What are The Rewards for Students? *The Clearing House*, 74(5), 269-276. <https://doi.org/10.1080/00098650109599206>
- Akkutay, Ü. (2004). Osmanlı Eğitim Sisteminde Enderun Mektebi. In M. R. Şirin, A. Kulaksızoğlu, & A. E. Bilgili (Eds.), *Üstün Yetenekli Çocuklar Kongresi Seçilmiş Makaleler Kitabı* (pp. 85-96). İstanbul: Çocuk Vakfı Yayınları.
- Arabacı, İ. B., & Akıllı, C. (2019). Eğitimcilerin Proje Hazırlama ve Yürütme Süreçlerinde Karşılaştıkları Sorunların Proje Döngüsü Yönetimi Aşamalarına Göre İncelenmesi. *Millî Eğitim Dergisi*, 49(225), 129-152. Retrieved from <https://dergipark.org.tr/en/pub/milliegitim/issue/52526/690633>
- Artvinli, E., Çetintaş, H., & Terzi, İ. (2020). TÜBİTAK Ortaokul Öğrencileri Araştırma Projelerinin Bilimsel

- Danışmanlık Süreci Yönetimi: Fen Bilimleri Örneği. *International Journal of Active Learning*, 5(2), 86-126. <https://doi.org/10.48067/ijal.827001>
- Aydın, M., Bacanak, A., & Çepni, S. (2013). Fen ve Teknoloji Öğretmenlerinin Proje Tabanlı Öğretim Yöntemi (Ptöy) İle İlgili İhtiyaçlarının İncelenmesi. *Necatibey Eğitim Fakültesi Elektronik Fen ve Matematik Eğitimi Dergisi (EFMED)*, 7(1), 1-31.
- Baki, A., & Bütüner, S. Ö. (2009). Kırsal kesimdeki bir ilköğretim okulunda proje yürütme sürecinden yansımalar. *İlköğretim Online*, 8(1), 146-158. Retrieved from <http://ilkogretim-online.org.tr/>
- Balas, A. K. (1998). *Science Fairs in Elementary School*. *ERIC Digest* (ERIC Document Reproduction Service No. ED432444). Retrieved from <http://files.eric.ed.gov/fulltext/ED432444.pdf>
- Başkale, H. (2016). Nitel araştırmalarda geçerlik, güvenirlik ve örneklem büyüklüğünün belirlenmesi. *Dokuz Eylül Üniversitesi Hemşirelik Fakültesi Elektronik Dergisi*, 9(1), 23-28. Retrieved from <http://acikerisim.pau.edu.tr:8080/xmlui/handle/11499/27221>
- Baykoç Dönmez, N. (2004). Bilim Sanat Merkezleri'nin Kuruluşu ve İşleyişinde Yapılması Gereken Düzenlemeler. In M. R. Şirin, A. Kulaksızoğlu, & A. E. Bilgili (Eds.), *Üstün Yetenekli Çocuklar Bildiriler Kitabı* (pp. 69-84). İstanbul: Çocuk Vakfı Yayınları.
- Baykoç Dönmez, N. (2005). Üstün Yeteneklilerin Eğitimleri ve Bilim Sanat Merkezleri. *Çocuk Gelişimi ve Eğitimi Dergisi*, 1(2), 84-89. Retrieved from <http://www.necatebaykoc.com.tr/bilsem/>
- Bilim ve Sanat Merkezleri Yönergesi. (2016). *T.C. Milli Eğitim Bakanlığı Tebliğler Dergisi*, Cilt: 79, Sayı: 2710, 449-473. Retrieved from <http://tebligler.meb.gov.tr/index.php/tuem-sayilar/finish/84-2016/4999-2710-kasim-2016>
- Bilim ve Sanat Merkezleri Yönergesi. (2019). *T.C. Milli Eğitim Bakanlığı Tebliğler Dergisi*, Cilt: 82, Sayı: 2747, 392-419. Retrieved from <http://tebligler.meb.gov.tr/index.php/tuem-sayilar/finish/87-2019/5327-2747-aralik-2019>
- Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2009). *Bilimsel araştırma yöntemleri*. Ankara: Pegem Yayıncılık.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.
- Demirhan, C. (2002). *Program Geliştirmede Proje Tabanlı Öğrenme Yaklaşımı* (Unpublished master's thesis), Fırat Üniversitesi, Eğitim Bilimleri Enstitüsü, Elazığ, Türkiye.
- Enç, M. (2004). Özel Eğitimin Tarihçesi. In M. R. Şirin, A. Kulaksızoğlu, & A. E. Bilgili (Eds.), *Üstün Yetenekli Çocuklar Kongresi Seçilmiş Makaleler Kitabı* (pp. 15-35). İstanbul: Çocuk Vakfı Yayınları.
- Fisanick, L. M. (2010). *A Descriptive Study of The Middle School Science Teacher Behavior for Required Student Participation in Science Fair Competitions* (Doctoral dissertation). Retrieved from <https://www.proquest.com/dissertations-theses/descriptive-study-middle-school-science-teacher/docview/365721913/se-2?accountid=15958>
- Giorgi, A. (1997). The theory, practice, and evaluation of the phenomenological method as a qualitative research procedure. *Journal of Phenomenological Psychology*, 28(2), 235-260. <https://doi.org/10.1163/156916297X00103>
- Gökdere, M., & Ayvaci H. Ş. (2004). Sınıf Öğretmenlerinin Üstün Yetenekli Çocuklar ve Özellikleri İle İlgili Bilgi Seviyelerinin Belirlenmesi. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi*, 18, 17-26. Retrieved from <https://app.trdizin.gov.tr/publication/paper/detail/TXprNU5UZzQ=>
- Grote, M. (1995a). Science Teacher Educators' Opinions About Science Projects and Science Fairs. *Journal of Science Teacher Education*, 6(1), 48-52. <https://doi.org/10.1007/BF02614547>
- Grote, M. (1995b). Teacher Opinions Concerning Science Projects and Science Fairs. *Ohio Journal of Science*, 95(4), 274-277. Retrieved from <http://hdl.handle.net/1811/23663>
- Güncel Eğitim. (2020). *Proje Yarışmaları*. Retrieved from <https://www.guncel-egitim.org/yarisma/proje-yarismalari/>
- Johnson, A. P. (2001/2015). *Eylem Araştırması El Kitabı* (2. basım). (Y. Uzuner & M. Özten Anay, Trans.). Ankara: Anı Yayıncılık.
- Marshall, C., & Rossman, G. B. (2014). *Designing Qualitative Research*. New York: Sage.

- MEB. (2021). *Bilim ve Sanat Merkezleri Listesi*. Retrieved from <https://www.meb.gov.tr/baglantilar/okullar/>
- Merriam S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco: Jossey-Bass.
- Oğuz Ünver, A., Arabacıoğlu, S., & Okulu H. Z. (2015). Öğretmenlerin Bu Benim Eserim Proje Yarışması Rehberlik Sürecine İlişkin Görüşleri. *Muğla Sıtkı Koçman Üniversitesi Eğitim Fakültesi Dergisi*, 2(2), 12-35. <https://doi.org/10.21666/mskuefd.87781>
- Önen, F., Mertoğlu, H., Saka, M., & Gürdal, A. (2010). Hizmet içi eğitimin öğretmenlerin proje ve proje tabanlı öğrenmeye ilişkin bilgilerine ve proje yapma yeterliklerine etkisi: ÖPYEP örneği. *Ahi Evran Üniversitesi Eğitim Fakültesi Dergisi*, 11(1), 137-158. Retrieved from <https://dergipark.org.tr/en/download/article-file/1493938>
- Özel, M., & Akyol, C. (2016). Bu benim eserim projeleri hazırlamada karşılaşılan sorunlar, nedenleri ve çözüm önerileri. *Gazi Eğitim Fakültesi Dergisi*, 36(1), 141-173. Retrieved from <https://app.trdizin.gov.tr/makale/TWpJM01qYzBOQT09/bu-benim-eserim-projeleri-hazirlamada-karsilasilan-sorunlar-nedenleri-ve-cozum-onerileri>
- Öztuna Kaplan, A., & Diker Coşkun, Y. (2012). Proje tabanlı öğrenme uygulamalarında karşılaşılan güçlükler ve çözüm önerilerine yönelik bir eylem araştırması. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 8(1), 137-159. <http://dx.doi.org/10.17860/efd.40109>
- Saban, A. (2000). *Öğrenme Öğretme Süreci*. Ankara: Nobel Akademik.
- Sezginsoy, B. (2007). *Bilim ve Sanat Merkezi Uygulamasının Değerlendirilmesi* (Unpublished master's thesis). Balıkesir Üniversitesi, Sosyal Bilimler Enstitüsü Eğitim Bilimleri Anabilim Dalı, Balıkesir, Türkiye.
- Sözer, Y. (2017). TÜBİTAK Ortaöğretim Proje Yarışmasına Hazırlanan Öğrencilerin Proje Geliştirme Sürecinin İncelenmesi: Bir Eylem Araştırması. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, 18(2), 139-158. <https://doi.org/10.17679/inuefd.334887>
- TBMM. (2012). *Özel Yetenekli Çocukların Keşfi, Eğitimleriyle İlgili Sorunların Tespiti ve Ülkemizin Gelişimine Katkı Sağlayacak Etkin İstihdamlarının Sağlanması Amacıyla Kurulan Meclis Araştırma Komisyonu Raporu*. Ankara: Meclis Yayınları.
- Yıldırım, A., & Şimşek, H. (2011). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri* (8th ed.). Ankara: Seçkin Yayıncılık.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).