

**ORIGINAL ARTICLE**

# Organisational and Project Level Challenges of Ecopedagogy-based Environmental Education Programmes

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**ABSTRACT**

Projects are usually designed to solve a problem or to add a value to the business environments such as service, a result, or product. Every project has unique and non-repetitive features. However, projects have common features in terms of their success and failure stories binding around time, cost, and performance requirements. Failure stories usually have organisational and project levels challenges. These challenges are the same or similar for ecopedagogy-based environmental education (EBEE) projects as well. Ecopedagogy is a transformational way to social, political, ideological, and economic changes. The Agenda 21 refers to transformation of societies, however ecopedagogy first starts off from personal transformation. This transformation is based on critical thinking on how to solve socio-environmental problems. EBEE projects are pedagogical tools to teach environmental issues. The key points of ecopedagogy include protection of the natural environment (natural ecology), the impacts of humans on the environment (social ecology) as well as the influence over civilization and economic, social, and cultural composition (integrated ecology), therefore these projects should include a wide variety of topics. There are studies related to theoretical and practical sides of ecopedagogy but there have not been any studies related to the project management side of EBEE programmes yet. The aim of this paper is to present some organisational and project level challenges of EBEE projects.

**Keywords:** Ecopedagogy, education programmes, project management, organisational challenges, TUBITAK

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## INTRODUCTION

We live in a fast-paced, innovative, and uncertain business environment, and the only unchanged topic is the change. Business sector, therefore, embraces new techniques and methodologies. Project teams also learn as the project grows and evolves (Kurup & Sidhardhan, 2015).

Projects are usually designed to solve a problem or to add value to the business environments such as service, result, or product. Every project has unique, non-repetitive features despite all projects also having four common stages: definition, planning, execution, and delivery. However, projects have common features in terms of their success and failure stories binding around time, cost, and performance requirements (Heagney, 2016; Larson & Gray, 2021), so do ecopedagogy-based projects. Failure stories usually have organisational and project level challenges (Heagney, 2016; Larson & Gray, 2021).

### **Ecopedagogy-Based Environmental Education (EBEE) Projects**

Ecopedagogy is a transformational way to social, political, ideological, and economic changes (Antunes & Gadotti, 2009; Kahn, 2010). The Agenda 21 refers to transformation of societies (Misiasek, 2015). However, ecopedagogy first starts off from personal transformation (Okur-Berberoglu, 2014a, 2014b, 2015a, 2020a, 2020b, 2022a). This transformation is based on critical thinking about how to solve socio-environmental problems. Some of the questions of personal transformation might be: "What can I do for my planet; what are my responsibilities to protect natural environment; are politicians and their policies fair?" (Okur-Berberoglu, 2015b, 2015c, 2015d, 2016, 2018, 2019). There are three main points here: human, society, and environmental problems. Misiasek (2015) emphasises that ecopedagogy is a valuable pedagogical philosophy to understand and teach complex relationships between society and nature. Moreover, Okur-Berberoglu (2021a, 2021b, 2022a, 2022b, 2023) points out that firstly human/personal development should be considered, if a human changes over time, society changes.

EBEE projects are a pedagogical tool to teach environmental issues. The key points of ecopedagogy are protection of natural environment (natural ecology), the impacts of human upon environment (social ecology) as well as the influence over civilization and economic, social and cultural composition (integrated ecology), therefore these projects should include a wide variety of topics (Eryaman et al, 2010; Okur-Berberoglu et al., 2013; Okur-Berberoglu, 2014a, 2014b; Okur-Berberoglu, 2015a, 2015b, 2015c, 2015d, 2015e, 2017a, 2017b, in press; Okur-Berberoglu & Chamberlain, 2022). In an EBEE project, a group of selected participants aim to learn the language of nature and subsequently develop a holistic approach (Ozner, 2004). In terms of selected participants, Misiasek (2015) especially emphasises that ecopedagogy might be used in teacher education because teachers should be able to teach complex environmental issues rather than environmental knowledge.

Three major subjects stand out here: (a) a group of selected participants such as in-service teachers, (b) EBEE projects, (c) learning by practice. These three titles are also the main components of TUBITAK (The Scientific and Technological Research Council of Turkey) 4004 coded projects. In addition, TUBITAK has been financing EBEE projects intended for in-service teachers since 1999 (Erentay & Erdogan, 2009; Okur, 2012; Okur-Berberoglu, 2014c, 2015a, 2015e, 2017a, 2017b; Okur-Berberoglu et al., 2015; Yalcin-Ozdilek et al., 2012) in Türkiye and expects projects to explain complex environmental issues with activities in nature via daily language (Okur-Berberoglu & Uygun, 2013).



## **Literature Review**

Eryaman et al. (2010) examined the impact of the EBEE programme on in-service teachers. They found that the teachers could understand the relationship between economy, ecology and society for a sustainable future and were intended to share their acquisitions with their families and students. Consequently, there was no follow up process of this study.

Okur-Berberoglu (2014c) studied the impact of an EBEE programme on behaviour change, direct and indirect actions of in-service teachers by qualitative approach. The data were collected before and after the programme and the participants were followed up after six months. She found that the EBEE programme was successful to achieve ecological behaviour change, direct and indirect actions.

Yalcin and Okur (2014) aimed to determine the electromagnetic field awareness development of in-service teachers. Electromagnetism was mentioned within an EBEE project, and the data were collected by mixed methodology. The participants were followed up after six months. They found that the participants' awareness developed throughout the training, and they tended to be careful about using electrical devices in their daily lives.

Okur-Berberoglu (2015a) examined the impact of the EBEE program intended for in-service teachers on holistic perspective by qualitative approach. The data were collected before and after the programme and the participants were followed up after six months. She found that the ecopedagogy-based environmental education program was effective in developing the holistic perspective of in-service teachers. The in-service teachers mentioned mostly ecopedagogic perspective rather than anthropocentric perspective.

Okur-Berberoglu (2015e) evaluated the short- and long-term effects of an EBEE programme on environmental knowledge gaining of the in-service teachers by quantitative approach. A knowledge test was applied as pretest, posttest, and after 6 months as delayed post-test. She found that the programme was effective on gaining knowledge in the short term at a high level while it was effective on gaining population ecology knowledge in the long term.

Okur-Berberoglu, et al. (2015) tried to determine the short-term effectiveness of an EBEE program on biodiversity awareness, environmental awareness, and sensitivity to the natural environment. There were 27 in-service teachers in the project which lasted only 10 days. An environmental awareness and sensitivity scale was developed for the study and the research design was pretest-posttest design. The data was analysed by Wilcoxon signed rank test because of having non-parametric data. The researchers found that the EBEE program was effective to improve environmental awareness and sensitivity to the natural environment; but not successful to improve biodiversity awareness.

Okur-Berberoglu (2017a) aimed to evaluate the impact of an EBEE programme on the affective domain of in-service teachers from Türkiye. psychodrama, non-participant observation, open-ended questions were used for the data collection process, and content analysis was used for the data analysis. Activities in both indoor and outdoor experiential programmes were designed in accordance with Kolb's theory on experiential teaching. While the indoor activities were used for control group 1, and traditional methods used for control group 2; the outdoor activities were used for the experimental group. At the end of the research, the following terms emerged in participants' expressions were as the following: "interest, anxiety, curiosity, motivation, and complaint". The most remarkable expressions belonged to the experimental outdoor group.

As can be seen above, there are studies related to theoretical (Antunes & Gadotti, 2009; Kahn, 2010; Misiaszek, 2015) and practical (Okur, 2012; Okur-Berberoglu, 2015a, 2015b, 2015c, 2015d, 2015e, 2017a, 2107b, 2020a, 2020b,

2021a, 2021b) sides of ecopedagogy but there have not been any studies related to the project management side of EBEE programmes. The aim of this paper is to present some organisational and project level challenges of EBEE projects.

## METHOD

### Research Design

The methodology of this study entails a case study design within a qualitative approach. A case study is very useful in terms of collecting enough data (Yildirim & Simsek, 2006), yielding descriptive and explanatory results (Okur-Berberoglu, 2015a, 2022a, 2022b).

The author worked as a team member of EBEE projects for two years and as a project director for two years. These projects funded by TUBITAK were conducted between 2008- 2011 (Okur-Berberoglu & Uygun, 2013; Okur-Berberoglu, 2014c, 2015b, 2015c, 2015d; Okur-Berberoglu et al., 2015). The content of each project and project management style were evaluated and compared to each other.

### Setting and Participants

These projects were conducted in Canakkale and Gallipoli in Türkiye. TUBITAK 4004 coded projects were only for a - year project and TUBITAK and the university collaborated within the projects (Okur-Berberoglu & Uygun, 2013). There were three different project directors between 2008-2011. Academic 1 directed the project in 2008, Academic 2 in 2019 and Academic 3 in 2010 and 2011. Each year the content of the EBEE programmes and measurement tools were updated after having 'lessons learned' sessions (Okur-Berberoglu et al., 2015).

This session is usually ignored by project managers/ teams (Heagney, 2016; Larson & Gray, 2021) who think that project has been finished successfully. Heagney (2016) and Larson and Gray (2021) point out that 'lessons learned' session is one of the most important steps of project management. Despite every project having unique features, 'lessons learned' sessions help the project team what should/not be done at next projects. Because these lessons are very crucial in terms of time, cost, and performance management of projects. In terms of project management of EBEE programmes, there is no study yet where/how project managers should be careful at. The findings of this study were based on semi-structured interviews of Academic 3 with Academic 1 and 2 at 'lessons learned' sessions.

### Instruments

The sessions were held four times at the end of each project and 10 questions were asked at the interviews (Appendix 1). The questions of the interviews were related to the experience of directors. There were 18-21 activities for each project. All these activities, challenges and what was done for mitigation were discussed within the interviews.

### Procedure and Data Analysis

Each text includes an opinion and/or knowledge (Harkness et al., 2005; Lincoln & Guba, 1985; Tesch, 1990), so all transcribed documents were analysed one-by-one and coded. The codes were used to obtain themes (Harkness et.al., 2005), and to retrieve material relevant to a case study (Yildirim & Simsek, 2006). Table 1 shows defined themes and codes.



**Table 1.** Themes and codes of the research

Themes	Organisational level challenges	Project Level Challenges
	Insufficient organisational strategy and project portfolio management	Scope creep
	Digital transformation	Lack of communication and limited engagement of stakeholders
Codes	Perform an Agile Readiness Assessment	Lack of clear goals and success criteria
		Inadequate skills of team members
		Inadequate risk management
		Lack of accountability
		Unrealistic deadlines& Planning Fallacies
		Keeping teams on the same page
		Cohesive working environment

This research is an explanatory study, so the aim is not to generalise the results. Other researchers can transfer the results onto their studies depending on the project context and challenges because EBEE programmes are also place-based projects (Okur, 2012; Okur-Berberoglu, 2015a, 2015b, 2015c, 2015d, 2015e, 2017a, 2017b, 2020a, 2020b, 2021a, 2021b).

## RESULTS AND DISCUSSION

Data analysis shows two main themes and challenges: Organisational and project level challenges. There are three codes under the organisational level challenges: Insufficient organisational strategy and project portfolio management, digital transformation and performing an agile readiness assessment. There are nine codes under the project level challenges: Scope creep, lack of communication and limited engagement of stakeholders, lack of clear goals and success criteria, inadequate skills of team members, inadequate risk management, lack of accountability, unrealistic deadlines and planning fallacies, keeping teams on the same page, cohesive working environment (Table 1). Each challenge, code and how to mitigate them have been explained below respectively.

### Organisational Level Challenges

Organisational level challenges are overarching and strategic level challenges and usually happens in the definition and planning stages. They explicitly affect the project implementation and its outcomes (Faust, 2021; Larson & Gray, 2021).

#### **Insufficient Organisational Strategy and Project Portfolio Management**

Stretton (2018) says that 40% of the project failures happen in the designing strategic framework of organisations because organisational strategy is the first step of project planning. If the organisations, senior project managers and stakeholders are not able to define the project strategy, highly likely the next steps of the project will not be defined clearly as well (Larson & Gray, 2021; Smith et al., 2014).

**Mitigation:** Integrative project management approach is one of the mitigation ways of insufficient organisational strategy. This approach has three trivets: Project management, portfolio management and strategic alignment.

Strategic alignment refers to being able to see the bigger picture. Senior managers, EBEE lead project team members need to understand current business trends and how the organisation's resource (human, financial and equipment) can

be used effectively and efficiently (Okur, 2012; Okur-Berberoglu, 2014b, 2014c, 2015a, 2015b, 2015c, 2015d, 2015e, 2017a, 2107b, 2020a, 2020b, 2021a, 2021b; Yalcin-Ozdilek et al., 2012).

Portfolio management includes overseeing project selection and considers how project resources can be integrated into organisational strategy such as using best project management practices, monitoring resource levels and skills (Larson & Gray, 2021; Smith et al., 2014).

Project management is the implementation process of a project using technical and sociocultural skills and capacities (Larson & Gray, 2021; Smith et al., 2014).

Project management side is very important because everything is perfect and doable on a paper. However, there are many foreseen and unforeseen challenges in the implementation stage. For example, the impact of global warming on the project needs to be considered. Project team may have perfect technical skills and a project manager, but each project has limited resources (human or money) which have been fed by environmental resources (Okur-Berberoglu, 2012; Okur-Berberoglu, 2014a; Yalcin-Ozdilek et al, 2012). The environmental disasters created by global warming have an impact on project resources directly and indirectly. This stage also requires strategic level thinking because it is important which business model needs to be used. Current business world uses Mickey Mouse Model (Sustainable Aotearoa New Zealand, 2009). There is a big handicap here. The biggest part of this model is to have economic profit more than environmental and social development. The main question here is if there are not enough environmental sources, how can project resources can be maintained (Okur-Berberoglu, 2015a, 2015d, 2017a, 2017b, 2020b, 2021b, Okur-Berberoglu et al, 2015; Yalcin-Ozdilek et al, 2012)?

### **Digital Transformation**

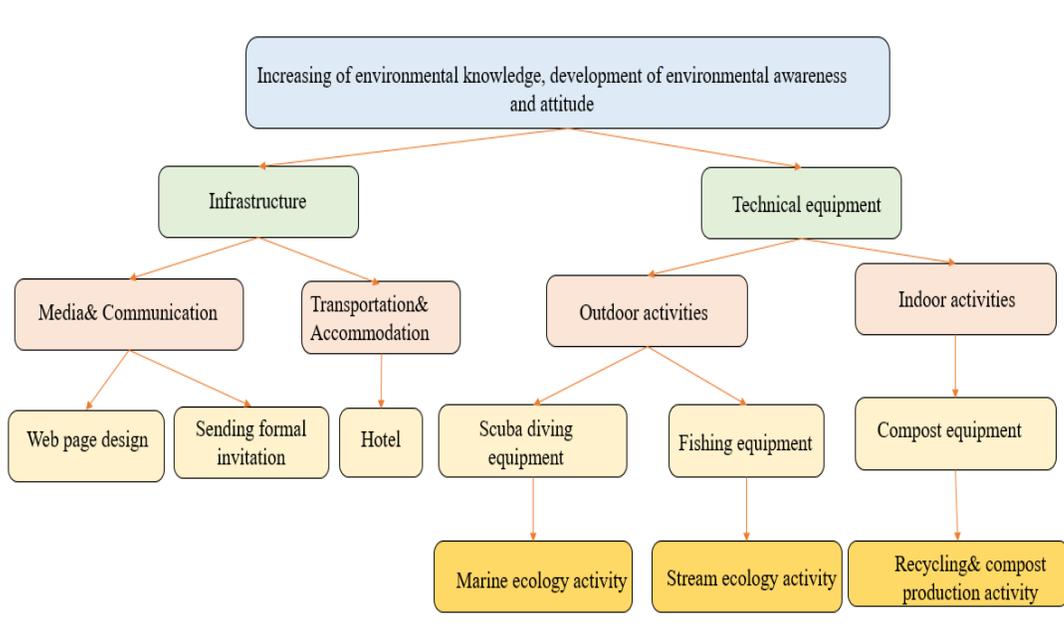
Many organisations use digital technologies and organise training to be able to adopt the right tools, systems, and processes within scenario planning. These technologies are important in terms of time and budget management and to be able to reach their objectives easily. However, it is important how this transformation is decided and carried out strategically. Digital transformation can be evaluated under the analysing and formulating of strategies. The main questions here are what needs to be done to reach out the organisation's objectives, what has changed over the years, and what the current internal and external environments are. Digital technology covers both internal and external environments (Faust, 2021; Larson& Gray, 2021; Smith et al., 2014).

**Mitigation:** The organisation (senior managers) should be able to define a clear mission and SMART (specific, measurable, assignable, realistic and time related) objectives. After deciding objectives, SWOT analysis should be done. SWOT means to evaluate the environments in terms of strength, weakness, opportunities, and threats (Eryaman et al, 2010; Okur et al., 2013; Okur-Berberoglu & Uygun, 2013). However, the organisations need to be aware of the latest technological developments and how they can use these developments against a competitive business environment for reaching out the objectives (Larson & Gray, 2021). For example, most of the organisations use Microsoft products for their project management processes. Everyone knows that Microsoft often needs to be updated due to system deficiencies. There is another programme Linux which is more reliable and efficient, but it is not as popular as Microsoft. Organisations should decide which programme or project management programme they need and why. If the strategy does not align with the mission and objectives, highly likely projects will be unsuccessful (Okur et al, 2013; Okur-Berberoglu, 2019; Yalcin-Ozdilek et al, 2012).

**Perform an Agile Readiness Assessment**

If business environment changes very fast how can organizations keep up with the latest trends? Organisations need to be agile and mature enough to adapt changes. One way doing this is to perform an agile 'readiness' assessment and using an effective project portfolio management system. This process means assessing existing processes, resources, and skills, and identifying any gaps (Faust, 2021).

**Figure 1.** A WBS of an EBEE project



Projects should have a strong priority system that helps senior managers select and prioritise projects based on organisation's resources and capacity (Wysocki, 2021). Breaking down work can help senior managers to be able to see the whole steps of the project as well as the detailed needs. Figure 1 shows an example of work breakdown structure (WBS) of an EBEE project. These needs can be detailed more depending on place-based learning and target groups (Okur, 2012, Okur-Berberoglu, 2017a, 2017b). However, senior managers should know how to classify projects and how to use selection criteria and be aware of implementation gaps (Larson & Gray, 2021; Okur, 2012; Okur-Berberoglu, 2015c, 2015d, 2015e; Okur-Berberoglu et al, 2015; Wysocki, 2021).

**Project Level Challenges**

These challenges can usually be seen in the execution and delivery (implementation) stages of the project.

**Scope Creep**

Scope is to define the boundaries of a project, what will and will not be delivered under the project therefore it is crucial for managing the project and stakeholders' expectations. (Wysocki, 2021). It can be dangerous for successful delivery of

the project because it may increase the cost, delivery time, workload, and resources of the project. All scope creep will have a negative effect on projects; however, it could possibly have the adverse effect. From a strategic perspective an organisation agrees to increase the scope of a project as it will reduce the need to stand up a whole new project, or the benefits in increasing or changing the scope outweigh the increase in cost and time (Larson & Gray, 2021; Wysocki, 2021).

**Mitigation:** A scope statement can be used within the project management plan. The statement indicates clearly what the project will and will not do/deliver and should be done/referred to when the project purpose is challenged and/or when changes are asked. The statement may change or be adapted during the life of the project, but this change should be managed in a structured and organised way with approval by key stakeholders (Larson & Gray, 2021; Wysocki, 2021).

**Figure 2.** A GANTT chart of EBEE project

ID	Task	May 2011	June 2011	July 2011	August 2011	September 2011	October 2011	November 2011	December 2011	January 2012	February 2012	
1	Web page design & update											
2	Survey, scale and test design & Validity/Reliability analysis											
3	Accepting participant submissions											
4	Procurement of equipment											
5	Educators course preparation											
6	Accommodation& transportation											
7	Implementation of the education programme											
8	Survey, scale& test application-Evaluation											
9	Certificate preparation											
10	Writing& submitting interim report											
11	Submitting budget documents											
12	Writing& submitting final report											

Project manager should make a clear schedule to outline every step of the project, so everyone is on the same page about the requirements. Project goals should be defined within a proper planning and understanding of the customer needs. Project manager should have realistic assumptions in terms of resource availability and deadlines. GANTT chart which was first designed by Henry Gantt (Wilson, 2003) is a good option to follow the project steps and deadlines (Figure 2) (Okur, 2012; Okur-Berberoglu, 2015a, 2015b, 2015c, 2015d, 2015e, 2017a, 2017b). Documentation is also an important step to deal with scope creep and to communicate effectively with the team members and stakeholders. Documents show us clearly what was decided, what is happening and what will be changed (Kashyap, 2020; Kissflow, 2022; Roberts, 2007).

### **Lack of Communication and Limited Engagement of Stakeholders**

Poor communication affects the flow of the project, so the project manager needs to develop a proper way to keep

everyone in the loop. New collaboration software programmes can be used to ensure that project members are informed about recent developments in the project (Kashyap, 2020; Kissflow, 2022; Linton, 2014).

**Mitigation:** Strong external stakeholder management is very crucial at this point. Project directors should be able to explain why the project is important and how s/he should stick to the project steps clearly. Otherwise TUBITAK or the university may want to cut off the fund or force to change the project steps (Okur, 2012; Okur-Berberoglu, 2015a, 2015b, 2015c, 2015d, 2015e, 2017a, 2017b).

### ***Lack of Clear Goals and Success Criteria***

Setting a goal is inclined towards developing a proposal and then defining objectives that would help to achieve the goal. When you know your goals, you can define the objectives that are the how, why, and what you need to do for project planning. It's therefore recommended to hold a kick-off meeting and use project planning software to define clear goals (Kashyap, 2020; Kissflow, 2022; Linton, 2014).

### ***Inadequate Skills of Team Members***

Projects are unique processes therefore they may need unique skill sets as well. Project managers need to define core skill sets to accomplish the workload and analyse the strengths and weaknesses of the team members. If required, train them to enhance their knowledge and end the skill gaps (Kashyap, 2020; Kissflow, 2022; Linton, 2014).

**Mitigation:** Human management and proper training programmes should be used to improve skills of team members. Business environment and its expectations have been changing rapidly due to technological development. Global challenges require new perspectives in learning and development and learning experiences do not only happen in the formal education system. Soft learners are needed in professional life therefore adults can carry on their personal and professional developments throughout their lives. Project managers should inform team members what the project needs in the competitive business environment and what stakeholders want, and which skills they need to improve. (Smitsman & Smitsman, 2021).

Project managers should be able to inspire team members to improve their skills not just for the project but for their future as well. This is not an easy process, but it is essential. Adults' psychological state is very important for their professional development because they might have low self-esteem to learn new subjects and skills. That's why the project manager's encouragement is very important. It is acceptable to make mistakes, but the main idea is that not to give up (Okur-Berberoglu & Chamberlain, 2022; Okur-Berberoglu, 2022b; Yalcin-Ozdilek et al., 2012).

### ***Inadequate Risk Management***

It is impossible to predict every potential risk but strategic planning and collecting information will ease off possible risks. Project managers can develop control measures that can help them to deal with the risks accordingly (Faust, 2021; Kissflow, 2022; Roberts, 2007).

### ***Lack of Accountability***

Accountability starts from senior managers' level. Project managers should make sure everyone is on the same page in terms of accountability at the start of a project (Kashyap, 2020; Kissflow, 2022; Linton, 2014). Senior project team members should have accountability for every possible unexpected incident and record the incidents for the lessons learned session (Okur & Yalcin-Ozdilek, 2013; Okur-Berberoglu, 2015c).

### **Unrealistic Deadlines & Planning Fallacies**

Project managers should take care of the project deadlines and other related issues with flawless planning, alternative analysis and proper communication with project participants and other key decision-makers. (Faust, 2021; Kissflow, 2022; Wysocki, 2021). Project lead can use a GANTT chart to create realistic deadlines (Figure 2).

### **Keeping Teams on the Same Page**

Project managers should make sure that all internal and external stakeholders are aware of project strategies, mission, objectives, and goals. Every team member needs to know who is doing what (Faust, 2021; Kissflow, 2022; Roberts, 2007).

### **Cohesive Working Environment**

Here Creating a positive work environment is the sociocultural side of project management. Project managers should be able to build trust in the workplace to get rid of barriers and establish interpersonal relationships (Kashyap, 2020; Kissflow, 2022; Wysocki, 2021).

**Mitigation:** For the last five challenges, internal stakeholder management is very important. All academics agree on one subject: Creating a team that can work from heart and soul as Jung (2009) mentioned is very crucial. Working from 'heart and soul' means here to try to understand why EBEE is important, how we contribute to the process, and how it can transform us as well. The main aim is not money or career otherwise conflicts happen in the team which does not create a cohesive working environment (Okur, 2012, Okur-Berberoglu, 2014a, 2014b, 2014c, 2015a, 2015b, 2015c, 2015d, 2015e, Okur-Berberoglu et al, 2015; Yalcin-Ozdilek et al, 2012).

## **CONCLUSION AND RECOMMENDATIONS**

Ending a project management is not an easy process. It has unique and non-repetitive features and challenges (Heagney, 2016); Larson & Gray, 2021). These challenges are the same or similar for EBEE projects, as well (Yalcin-Ozdilek et al, 2012; Okur-Berberoglu et al, 2015). Senior project management team members should be aware of these challenges and how to mitigate them.

This study is important in terms of discussing EBEE projects within the project management level. Project directors are responsible for managing the projects and writing the reports for TUBITAK 4004 coded projects (Okur-Berberoglu, 2015a, 2015b, 2015c, 2015d, 2017a, 2017b; Okur-Berberoglu & Uygun, 2013; Yalcin-Ozdilek et al., 2012). However, these reports are not published by TUBITAK, and the report results just stay between TUBITAK and the project teams. If the project director spends additional effort to write academic papers, then the results become visible (Okur-Berberoglu, 2015a, 2015b, 2015c, 2015d, 2017a, 2017b, 2020b, 2021b; Okur et al, 2013; Okur-Berberoglu & Uygun, 2013; Yalcin-Ozdilek et al, 2012). In terms of having robust and reliable outcomes, project management is also very important because all the challenges defined in the study can be solved via strong internal and external stakeholder management.

Project management concept is usually used in the business or marketing sector however every project either in marketing or in education needs good management to be able to reach out to expected outcomes. There are studies related to theoretical and practical sides of EBEE but the project management side of EBEE is unfortunately ignored (Okur-Berberoglu, 2012; Okur-Berberoglu, 2014 a, 2014b, 2014c, 2015a, 2015d, 2017a, 2017b, 2018, 2019, 2020b). Project leaders only focus on the final report; however, the lessons learned section is also important (Heagney, 2016;



Okur, 2012; Okur-Berberoglu & Uygun, 2013; Okur-Berberoglu et al, 2013, 2015). Project directors should share their experiences with the other researchers in terms of developing new project management styles.

This study especially focuses on 'lessons learned' sessions of project management of EBEE programmes. Unfortunately, project managers/ teams ignore this session as they focus on the project success (Heagney, 2016; Larson & Gray, 2021). However, 'lessons learned' sessions are very crucial in terms of what should/not be done at next projects. Because these lessons help us manage time, cost, and performance effectively (Heagney, 2016; Larson & Gray, 2021). Despite every project having unique features, 'lessons learned' sessions help the project team manage human, logistics sources sustainably (Okur-Berberoglu, 2015d, Okur-Berberoglu et al, 2015; Yalcin-Ozdilek et al, 2012).

Agile project management style seems to be a good option, suitable for EBEE projects (Faust, 2021), but different management approaches need to be carried out. EBEE projects are different from other educational projects because indoor and outdoor activities are used together (Okur-Berberoglu, 2014c, 2015b, 2015c, 2015d, 2015e; Okur et al., 2013; Okur-Berberoglu & Uygun, 2013, Okur-Berberoglu et al, 2015). There is a transformational way going through from person to society therefore EBEE projects are longitudinal projects (Eryaman et al, 2010; Okur-Berberoglu et al, 2015); therefore, project management style should be woven around long term/longitudinal perspectives. As Jung (2009) mentioned, personal transformation takes time, so does social transformation.

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## APPENDIX

### Appendix. Interview questions

1. What kind of challenges did you experience with TUBITAK during the project?
2. What kind of challenges did you experience with the university during the project?
3. Were all activities carried out as expected? Were there any unexpected problems? How were these problems solved?
4. Did these problems happen because of the project timeline, communication errors, educators, stakeholder management or participants?
5. Did you need to change the scope throughout the project? If so, why?
6. Did the project team members have enough experience? Did you use the 'buddy' system?
7. What did you do to keep all project members on the same page?
8. Did you use any specific programmes for project management? If so, which programmes?
9. Have you ever discussed the challenges you encountered in the projects with TUBITAK?
10. What did you do to mitigate the challenges?