

Project Based Learning for English Teaching in Vocational High School Students: A Need Analysis

Linda Ratna Susila¹, Khoirul Anwar², Yudhi Arifani³

^{1,2,3} Universitas Muhammadiyah Gresik, East Java, Indonesia

lindaratna318@gmail.com, khoirulanwar@umg.ac.id, yudhi_arif@umg.ac.id

Abstract

Project based learning knowns as an actual implementation of project-based learning strategies is one of the learning strategies that is still rarely used, especially in the vocational high school students. The study aims to find the target and learning needs for designing PBL strategy in vocational high school. This study administers a descriptive analysis with a quantitative approach. It uses the data from questionnaire distributes to respondents in order to find out the target needs and learning needs of participants. The participant of this research are 40 students of industrial electronics engineering (TEI) of 10th grade students in the academic year of 2021/2022 at SMK Mambaul Ulum Kebomas, East Jawa, Indonesia. The study results illustrated that the implementation of project-based learning strategy in the vocational high school is one of the ways to find the way how to answer this problem. In the designing and implementing of PBL here needs to find the Need Analysis (target needs and learning needs). By finding the need analysis of designing PBL strategy in learning English it helps the teacher, and students in finding the materials, method, media, and evaluation in the teaching learning process.

Keywords

project based learning;
vocational school; needs
analysis.



I. Introduction

Teaching English in vocational high school should take an English for specific purpose. For this reason, the use of English should be totally different with GE (general English). Using English for specific purpose in teaching learning English for vocational high school is an important program for the students. The students in vocational high school need to know about the English language that they will use for doing their project (Maruf, et al., 2021). in the fact, their department require them to understand about the manual book from the machine or a tool. Then they have to know how to read and understand about the specification. ESP is not a particular kind of language or methodology, nor does it consist of a particular type of teaching material (Maruf, et al., 2021). Understood properly, it is an approach to language learning, which is based on learner need (Hutchinson, 1991). The foundation of all ESP is the simple question: why does this learner need to learn a foreign language? From this question will flow a whole host of further questions, some of which will relate to the learners themselves, some to the nature of the language the learners will need to operate, some of the given learning context but this whole analysis derives from an initial identified need on the part of the learner to learn a language (Hutchinson, 1991). ESP is an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning (Hutchinson, 1991; Maruf, et al., 2021). A good learning media is the one which can adapt various student learning styles in order to achieve the learning goals – one of them is digital flipbook. It is an electronic learning media in which text, audio and visuals are

included. Flipbook is one of the classic animations made by a piece of paper, mostly found in the form of ‘thick’ book, and each paper aims to describe something – its appearance is designed in some specific ways so that the within objects may move or pop-up when opened (Nafiah in Afwan, B. et al, 2020).

Project based learning as we know that the actual implementation of project based learning strategies is one of the learning strategies that is still rarely used, especially in the vocational high school students. In the previous research. Several university English teachers in Shanghai, China, have recently designed as an English for Academic Purposes (EAP) course that adopts the project-based learning (PBL) approach. Although there have been many studies about the adoption of PBL in EFL/ESL teaching, the integration of PBL into EAP teaching is relatively less reported, especially in the Chinese context the present study has adopted an ethnographic approach to investigate the forms, effects, and challenges of integrating PBL into EAP teaching in the Chinese context (Li, & Wang, 2018). In the other hand the researched discusses about the definitions and the benefits of PBL. The researcher of Nguyen, also deals with the steps for implementing a PBL project and suggests several English learning projects for students of English. In fact, PBL has several benefits in second and foreign language settings (Nguyen, 2011). In his studied implied about: Fried-Booth states that the process leading to the end-product of project-work provides opportunities for students to develop their confidence and independence. The students demonstrate increased self-esteem, and positive attitudes toward learning, Skehan (1996) argues that this process can help to enhance students’ autonomy especially when they are actively engaged in project planning (e.g., choice of topic) and the autonomous learning is promoted when the students become more responsible for their own learning. He also said that the students engage in purposeful communication to complete authentic activities - tasks with real world relevance and utility; they thus have the opportunity to use language in a relatively natural context and participate in meaningful activities which require authentic language use. The authentic activities can provide the opportunity for students to examine the task from different perspectives, enhance collaboration and reflection, and allow competing solutions and diversity of outcome. Stoller (2006) mentions PBL provides opportunities for the natural integration of all four skills, reading, writing, listening and speaking.

Need analysis (NA), particularly in English Specific Purpose (ESP), is not a new concept because of its long history dating from the 1970s and its constant evolution (Flowerdew, 2012; Widodo, 2015; Maruf, Husain, & Rahmiati, 2021). Need analysis cannot be separated with the implementation process of project-based learning strategy. Need analysis is used to identify and find the students need while learning the English language by using this strategy for their program (Maruf, et al., 2021). From the description above the students have to know that they are the learners and user of the English language and what do they learn is suitable with the project that they are working on. Next, the students know their English language skills and they can improve it. They also have to know the language target (Maruf, et al., 2021).

This study take place in one of the Vocational High School in Gresik regency, East Java. It has two program, production control techniques (TPP) and industrial electronics engineering (TEI). Using the strategy of project-based learning the English teacher try to find the vocational students in target need and the learning need for the English language skill and knowledge that is relevant with their program. In developing the student’s skill in English finding the suitable materials for their project is challenging. Vocational high school is designed to create an employee to fulfill the companies need. Now, Project based learning (PBL) use in teaching learning process for vocational high school. PBL is defined

as “a comprehensive approach to classroom teaching and learning and is designed to engage student’s investigation of authentic problems” (Blumemenfeld et al., 1991). Therefore, the aim of this study was to find the target and learning needs for designing PBL strategy in vocational high school.

II. Review of Literature

2.1 Project Based-Learning

Many definitions of project-based learning have been proposed by various authors. Hmelo-Silver (2004) describes that project-based learning as a process that starts with a problem. The student then identifies facts that will provide information on the issue, which allows the student to form hypothetical solutions to the problem using the knowledge he found. Next, the student identifies knowledge differences, applies new knowledge and generates an abstraction of what he learned from the process. Project-based learning is designed to help learners construct a flexible knowledge-base, develop problem-solving skills, develop lifelong learning skills, become effective collaborators, and become an intrinsic motivated to learn (Hmelo-Silver, 2004). In his research revealed that project-based learning resulted in more accurate results in problem-solving tasks than a control group. The same study revealed that project-based learning students performed better than traditional students on multiple choice tests, despite many students claiming they learn more in traditional lecture format (Hmelo-Silver, 2004). Arantes do Amaral (2019) claims PBL can bring educational benefits to the classroom that include research opportunities, motivation to the participants, and foster continuity of partnerships. PBL provides student-centered for their language input and output opportunities, and it also has a functional linguistic view or “a wider sense as a semiotic-ecological endeavor that focuses on the making and using of signs that are multisensory and multimodal” (Van Lier, 2006.). Despite being student centered learning, it is important to remember that even the best students may struggle if left to their own devices. It is important for the teacher to implement scaffolding to build the knowledge base needed to tackle a big project (Maruf & Anjely, 2020). When first developing a PBL class, it is necessary for the teacher to provide the scaffolding required to support the students as they move through the course. Scaffolding can be done in a number of different ways, but it is important that the learning objectives are clearly laid out for the students. Some teachers prefer to use a weekly or unit packet that includes handouts, exercises, lecture notes, or videos that guide the students through the key concepts needed for a project (Bell, 2010; Duda, 2014).

2.2 Need Analysis

Studies of needs analysis have been undertaken over the last 30 years, and examined needs of “diverse learner groups in academic, professional, and occupational as well as “survival” settings” (Krohn 2009). What is the differentiation of ESP and General English being not existence of a need as such but rather than the awareness of the needs. If we (teacher, students) can aware and understand why the learners need English, it can influence on what knowledge that they will be received. That they also can find about the potential that can be exploited. Thus, the ESP course is characterized by the content of Science, Medicine, Commerce, Tourism etc), actually there were only a secondary consequence of the primate that readily for the specify about the learners need in English. There is no much more about the nature needs in the ESP in the general studies rather than an awareness of the learners needs (Hutchinson, 1987). However, with the development of

ESP studies, needs analysis is now regarded as the necessary step to effective language learning by scholars (Dudley-Evans & John, 1998; Hutchinson & Waters, 1987; Nunan 1988; Robinson, 1991; West, 1997). Hutchinson & Waters (1987) come up with a more specific distinction by suggesting that needs can be divided into two types: the target needs and the learning needs. Their definitions have been cited and often referred to in literature, and therefore, beginning with the distinction framework of Hutchinson & Waters (1987).

Hutchinson & Waters see necessities as the type of need determined by the demands of the target situation. (p.55). They define the target needs as necessities (what are the learner needs to know), lacks (what the learner does not know) and wants (what the learner wants to know). They also suggest that needs are the “route” from the starting point to the target situation; namely “how the language is learnt”. However, there are distinctions between necessities and demands from different viewpoints. (Hutchinson & Waters, 1987: 55) describe ‘necessities’ that These perceptions are basically target-oriented. They are ‘determined by the demands of the target situation, what the learner have to know about an order for the effective function in the target situation. Hutchinson & Waters make no distinctions between the two hence they are grouped together to indicate what learners have to know in order to function effectively in the target situation.

While Hutchinson & Water identify ‘wants’ as ‘what learners feel they need’, Berwick (1989:55) makes no distinctions between wants and desires by describing needs as ‘what learners want to gain from the course, (they) can be wants and desires. The next one is ‘lacks’, one of the earlier views of “lacks” is Allwright (1979) suggests that things learners cannot achieve in English are their lacks. Hutchinson & Waters (1987) define lacks as ‘gap between what they need to know and already know’.

In understanding the learning need we have to know what happens in the analysis of the target situation needs. Besides investigating the needs in the target situation and the beginning situation, the concept of learning needs is put forward to determine the needs during the learning process (Dudley-Evans & St. John, 1998; Hutchinson & Waters, 1987). In analyzing learning needs, Hutchinson & Waters’ framework for LSA (Learning Situation Analysis) is formed by a set of questions concerning the learners, the learning and the context of learning to complement what the TSA does not cover.

III. Research Method

This research is a descriptive analysis with a quantitative approach. It uses the data from questionnaire distributes to respondents in order to find out the target needs and learning needs of participants. The participant of this research are 40 students of industrial electronics engineering (TEI) and 3 (three) teachers from SMK Manbaul Ulum Kebomas. The participants were the 10th grade students of SMK Manbaul Ulum Kebomas in the academic year of 2021/2022.

The content of instrument was validated by two competent referees in the field of English Teaching as Foreign Language (TEFL). They evaluated the validity of the questionnaire, and it was revised regards to their evaluation and comments. Before administered to the participants, the questionnaires were tested to other twenty students who were not involved in this study, then the results were computed and the correction coefficient showed in 0.90 in which acceptable to administered in this present study.

IV. Result and Discussion

4.1 Analysis of Target Needs

a. Students Target Need (Planning Steps in PBL)

Table 1. Planning steps in PBL

(Planning)	5 (SA) Strongly agree		4 (A) Agree		3 (N) Neutral		2 (D) Disagree		1 (SD) Strongly disagree	
	F	%	F	%	F	%	F	%	F	%
1. Teachers and students are expected to determine topics related to or associated with the students' real life for choosing Running Text as the project.	4	10%	32	80%	3	7,5%	1	2,5%	0	0%
2. Students read a text, video and discuss it to learn the linguistic features in the text, and video of running text.	6	15%	21	52,5%	9	22,5%	4	10%	0	0%
3. Teachers aim to make students understand the focus of the running text project, determine the type of project and direct the investigation process.	23	58%	15	38%	1	3%	1	3%	0	0%
4. Students decide, write activities, and discussion the result and agreement of the project in the project timeline.	9	23%	25	63%	5	13%	1	3%	0	0%
5. Students make a timeline from planning to running text project reporting in groups.	16	40%	21	53%	2	5%	1	3%	0	0%
6. In the planning process, as a student I feel less initiative because I don't understand enough about Running Text.	2	5%	15	38%	4	10%	9	23%	10	25%
7. Teacher provides understanding of the material about running text.	18	45%	17	42,5%	5	13%	0	0%	0	0%
8. Students practice directly	0	0%	6	15%	7	18%	17	42%	10	25%

The table 1 above shows the planning of the PBL steps. In this planning parts it contains about how the students worked in those steps. When the students were asked about the decision in choosing the project topic for practice (teachers and students are expected to determine topics related to or associated with the students' real-life project for

choosing running text as the project), the participants agreed (80%) with the statements and (0%) disagree with the statement. Then a half of the participants (53%) also agree that in the pre-communicative activities by reading a text and discuss about the language features about running text enable students to communicate in the target language so it can support them in working the project to be complete. In determining the type of project and direct investigation students (58%) strongly agree that the teacher prepare the essential questions to make them focus on the project. The activities of designing the project plan: (23%) strongly agree, (63%) agree, and (3%) disagree that it is needed for the students to write their activities and discuss their project in the timeline. For the next steps in the planning process more than a half student (53%) agree that they have to write a timeline project for their project report. As the participant they release that in working their project (running text) they really need to write a timeline for knowing the time table and progress of the product. Students also make a timeline for their planning and it must arrange with the activities, deadline, and the person in charge. One of the problems in working this project were some of students are less initiative because they did not understand enough about running text, there are (38%) agree with the statement and (23%) disagree about the statement.

b. Students Target Need (implementing steps in PBL)

Table 2. Implementing steps in PBL

Implementing	5 (SA) Strongly agree		4 (A) Agree		3 (N) Neutral		2 (D) Disagree		1 (SD) Strongly disagree	
	F	%	F	%	F	%	F	%	F	%
1. Students do the activities based on the timeline project.	4	10%	31	78%	5	13%	0	0%	0	0%
2. Students manage the data from the activities.	5	13%	30	75%	5	13%	0	0%	0	0%
3. Students create content for the running text project.	3	8%	18	45%	16	40%	3	8%	0	0%
4. Students consult their groups progress with the teacher.	14	35%	24	60%	2	5%	0	0%	0	0%
5. Students revise (if necessary) or finish the running text project.	12	30%	21	53%	4	10%	2	5%	1	3%
6. Me and my friends in class have a different understanding of the running text project.	6	15%	17	43%	14	35%	2	5%	1	3%
7. The teacher accompanies students directly in the process of running text project.	25	63%	11	28%	4	10%	0	0%	0	0%
8. The teacher supervising the students in the process of running text project.	5	13%	34	85%	1	3%	0	0%	0	0%
9. I can work together, independently, and can complete the running text project on time.	3	8%	24	60%	4	10%	4	10%	5	13%

As shown in table 2 the implementing steps of PBL started with the finishing of the project. In the student's activities, most of the students (78%) agree if the activities must be done based on the timeline schedules project. Consulting the progress of the projects with the teacher is one of the important activities, and they were (35%) strongly agree, (60%) agree with this statement. Teacher gave their guidance and revision for the progress of each group because it can give the opportunities for the students in improving their skills in solving a problem, collecting data, receiving more information, and improving their ability for the communication with their team.

Table 3. Reporting steps in PBL

Reporting Items	5 (SA) Strongly agree		4 (A) Agree		3 (N) Neutral		2 (D) Disagree		1 (SD) Strongly disagree	
	F	%	F	%	F	%	F	%	F	%
1. Students present the running text project result and describe the production process.	8	20%	21	53%	11	28%	0	0%	0	0%
2. The presentation can be performed using the target language (based on the running text project)	4	10%	15	38%	10	25%	7	18%	4	10%
3. In the presentation project, the other group members can give questions on the project result.	25	63%	5	13%	8	20%	2	5%	0	0%
4. The presentation perform are carried out with the practicing of how to use and operate the running text is needed.	8	20%	25	63%	6	15%	1	3%	0	0%
5. I have different competency achievements with my friends so it is necessary to appoint a QC team.	8	20%	20	50%	12	30%	0	0%	0	0%

Reporting in working PBL was the last steps and it was consisting of assessing the project result and evaluating the project. Assessing the project results by presenting a product presentation to ensure that all the group members were understand enough for all process in the project and all of them were responsible with their product. In table 3, there was more than a half student (53%) agree with that statement. All the team have been done with the presentation and (63%) of the students agree that they need to perform it by practicing how to operate the running text. By doing the presentation they can perform using the target language and the other of the group members can give a question for the students perform. For evaluating the project, the teacher also gives the students feedback for the project result.

4.2 Analysis of Learning Needs

a. Students English Skill

Table 4. Students' English Skill

<i>Students English skill</i>	1		2		3		4		5	
	(never)		(rarely)		(sometimes)		(very often)		(always)	
Criteria	F	%	F	%	F	%	F	%	F	%
1. I discuss the process of my project with my friend	2	5.0 %	4	10.0 %	25	62.5 %	8	20.0 %	1	2.5 %
2. I discuss the process of my project with my teacher	7	17.5 %	6	15.0 %	20	50.0 %	5	12.5 %	2	5.0 %
3. I discuss the process of my project with my teacher and my friend	4	10.0 %	32	80.0 %	2	5.0 %	2	5.0 %	0	0.0 %
4. I can present a project presentation clearly	3	7.5 %	20	50.0 %	7	17.5 %	6	15.0 %	4	10.0 %
5. I need more practice to present my project	0	0.0 %	4	10.0 %	5	12.5 %	6	15.0 %	25	62.5 %
6. I give feedback and ask question as the participant in the presentation	8	20.0 %	11	27.5 %	15	37.5 %	4	10.0 %	2	5.0 %
7. I read a manual book before I use all the tools in my project	1	2.5 %	1	2.5 %	1	2.5 %	2	5.0 %	35	87.5 %
8. I read the specification of the materials that I use for working my project	0	0.0 %	2	5.0 %	3	7.5 %	5	12.5 %	30	75.0 %
9. I write the progress of my project in the report form	4	10.0 %	8	20.0 %	18	45.0 %	5	12.5 %	5	12.5 %
10. I write all the things that I don't know about the project	4	10.0 %	20	50.0 %	6	15.0 %	6	15.0 %	4	10.0 %
11. I listen the teachers explanation before working my project	0	0.0 %	2	5.0 %	5	12.5 %	10	25.0 %	23	57.5 %
12. I can understand the teacher explanation about the project	0	0.0 %	6	15.0 %	23	57.5 %	4	10.0 %	7	17.5 %
13. I use my mobile phone for optimizing information technology in searching the references about the project.	4	10.0 %	10	25.0 %	20	50.0 %	4	10.0 %	2	5.0 %
14. I make a discussion and interaction with my friend	2	5.0 %	6	15.0 %	10	25.0 %	12	30.0 %	10	25.0 %
15. I make a discussion and interaction with my teacher	4	10.0 %	15	37.5 %	12	30.0 %	6	15.0 %	3	7.5 %
16. I use mobile phone, discuss, and interaction with my all of them (teacher and student)	0	0.0 %	3	7.5 %	5	12.5 %	30	75.0 %	2	5.0 %

Table 4 shows that in the speaking terms their speaking frequency of discussing with their friend is sometimes (62,5%), teacher (50%), and both of them (80%). For the class presentation there were only (10%) is always clear in the project presentation. In the reading terms, students were asked to read a manual book before using the tools for the project (87%), always (5%), never (2,5). From the data we concluded that most students read the manual book before using all the tools. The same frequency comes from the students read the specification of the materials. There were (75%) is always, (0%) is never read the specification first. Finding the writing terms, the frequency of writing the project report is never (10%), rarely (50%), sometimes (50%), very often (15%), and always (10%). For the listening terms (57%) students are sometimes can understand the teacher explanation and the terms of the students preferred learning process (50%) is sometimes use their mobile phone for optimizing information technology in searching the references about the project. From the data above the outstanding students' abilities are in reading skill. Their English proficiency in general is in intermediate level, and intermediate level.

b. Students Situation in PBL

Table 5. Students' Situation in PBL

Students situation	1 (SA) Strongly agree		2(A) Agree		3(N) Neutral		4(D) Disagree		5(SD) Strongly disagree	
	F	%	F	%	F	%	F	%	F	%
Items										
1. In working running text project, I like to work individually.	0	0%	7	18%	5	13%	25	63%	3	8%
2. In working running text project, I like to work in pairs.	4	10%	18	45%	10	25%	5	13%	3	8%
3. In working running text project, I like to work together with my group.	7	18%	21	53%	12	30%	0	0%	0	0%
4. I enjoy in working my running text project by guidance of the teacher	19	48%	14	35%	7	18%	0	0%	0	0%
5. I enjoy in working my running text project freely	5	13%	5	13%	5	13%	25	63%	0	0%
6. I enjoy in working my running text project by guidance of the teacher and freely (50:50)	3	8%	29	73%	7	18%	1	3%	0	0%
7. In terms of the interest of learning English for my project, I like to learn English by watching video on YouTube and English movie	7	18%	12	30%	9	23%	6	15%	6	15%
8. In terms of the interest of learning English for my project, I like to learn English by listening to the music	10	25%	13	33%	8	20%	4	10%	5	13%
9. In terms of the interest of learning English for my project, I like to learn English by watching video on YouTube, English movie, and listening to the music.	5	13%	28	70%	6	15%	1	3%	0	0%

In terms of working the project on table 5, the data for the statement (In working running text project, I like to work individually) 0% students strongly agree, 13% neutral, and 63% disagree with that statement. In the term of working the project individually, work in pairs, and work together with the team. 53% students agree for working the project with their team, 45% agree worked with pairs, and 18% agree worked individually. It concluded that the higher percentage for working the project was together with their team. The next questionnaire also explained about the students' effort in working the running text. 73% agree that (I enjoy in working my running text project by guidance of the teacher and freely (50:50)). Students can explain their reason why they need to do the project by guiding of the teacher and they also need a freely time to explore their creativity. The guidance from the teacher makes them to be more careful and knowing the problem to solve. Students get an opportunity to learn by their self for improving their skill. For the last part, in the term of the interest of learning English for the project, 70% students agree to learn English by watching video on YouTube, English movie, and listening to the music.

V. Conclusion

The implementation of project-based learning strategy in the vocational high school is one of the ways to find the way how to answer this problem. In the designing and implementing of PBL here needs to find the Need Analysis (target needs and learning needs). By finding the need analysis of designing PBL strategy in learning English it helps the teacher, and students in finding the materials, method, media, and evaluation in the teaching learning process. The ability and skill of the students were in a low position. They need to improve their ability and more practice especially for practicing in the laboratory. By practicing continuously, it can help them for improving their ability. The English learning process hopefully helped students for achieving them succeed in all project that they do. In the explaining of the materials for the students, teachers are expected for giving a clear explanation. Teacher gives the explanation and practice directly with the tools. Then the teachers have to use technology that it can help students to be easier in working the project. in this research, it strengthens that English that is used here is English for specific purpose. These terms will use and improve continuously in vocational high school because it is considering to be more effective and based on the purpose of vocational high school.

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