

Soft Skill Oriented Project Based Learning Training Module in Center of Excellence Vocational High School

Mawaroh Ken Wardani¹, Ade Iriani² 

¹ Vocational High School 1 Jambu, Semarang Regency, Indonesia

² Master of Education Management, Satya Wacana University, Salatiga, Indonesia

ARTICLE INFO

Article history:

Received February 15, 2022

Revised February 18, 2022

Accepted April 29, 2022

Available online May 25, 2022

Kata Kunci:

Pembelajaran Berbasis Proyek,
Soft Skill, ADDIE Model

Keywords:

Project based Learning, Soft Skill,
SMK Center of Excellence



This is an open access article under the
[CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.

Copyright © 2022 by Author. Published by
Universitas Pendidikan Ganesha.

ABSTRAK

Program pelatihan untuk guru-guru Bahasa Inggris yang dilaksanakan selama ini belum menyentuh esensinya dan belum memberikan bukti nyata. Hal itu dikarenakan belum adanya modul atau acuan yang digunakan oleh guru-guru dalam mengikuti pelatihan selama ini, Ditambah lagi tidak ada tindak lanjut dan evaluasi setelah pelaksanaan diklat. Penelitian ini bertujuan untuk mengembangkan modul pelatihan model pembelajaran berbasis proyek berorientasi soft skill untuk guru Bahasa Inggris di SMK. Subjek penelitian adalah guru-guru Bahasa Inggris dari empat SMK. Penelitian ini menggunakan model pengembangan ADDIE. Metode penelitian menggunakan deskriptif kualitatif-kuantitatif. Pengumpulan data dilakukan melalui wawancara mendalam, test, observasi, dokumentasi, dan survey di lapangan. Hasil penelitian menunjukkan bahwa model pembelajaran berbasis proyek sesuai dan bagus dilakukan dalam pengajaran Bahasa Inggris di SMK; materi diklat Bahasa Inggris di SMK selama ini dilaksanakan secara bersamaan dengan mata pelajaran lain; materi diklat Bahasa Inggris yang diberikan di SMK sebatas pemberian materi melalui powerpoint dari instruktur; modul pelatihan yang dikembangkan mendapatkan validasi dari 3 ahli memenuhi kriteria sangat valid (>80%). Hasil observasi pelaksanaan pelatihan dengan modul pelatihan mendapatkan hasil 84% berkategori baik. Tanggapan guru terhadap modul pelatihan sebesar 83,55% berkategori baik. Pelaksanaan pelatihan menggunakan modul menunjukkan adanya peningkatan kompetensi guru sebesar 86,6%. Modul Pelatihan yang dikembangkan terbukti sangat valid dan efektif untuk meningkatkan kompetensi guru-guru Bahasa Inggris dalam pengajaran di kelas.

ABSTRACT

The training program for English teachers that has been implemented so far has not touched its essence and has not provided concrete evidence. This is because there is no module or reference used by teachers in participating in the training so far, plus there is no follow-up and evaluation after the implementation of the training. This study aims to develop a soft skill-oriented project-based learning model training module for English teachers in SMK. The research subjects were English teachers from four vocational high schools. This study uses the ADDIE development model. The research method uses descriptive qualitative-quantitative. Data was collected through in-depth interviews, tests, observations, documentation and surveys in the field. The results of the study indicate that the project-based learning model is appropriate and good for teaching English in vocational schools; English training materials in vocational schools have been carried out simultaneously with other subjects; English training materials given in vocational schools limited to providing material via powerpoint from the instructor; the developed training module received validation from 3 experts get the very valid criteria (>80%). The results of the observation in training with the training module found that 84% were categorized as good. The teacher's response to the training module was 83.55% in the good category. The implementation of training using the module showed an increase in teacher competence by 86.6%. The training module developed is proven to be very valid and effective to improve the competence of English teachers in classroom teaching.

1. INTRODUCTION

The challenges of disruptive technology development nowadays have logical consequences for the demand for increased competence for SMK graduates (Murtinugraha, 2017; Supriyadi, 2015). In this regard, the Directorate General of Vocational Education carries the concept of 'Bring Industry to School'. There are several things that will be implemented in schools which include: Bring Attitude, Bring Project and Bring Best Learning. The application of the industrial mindset, professionalism, character and industrial projects into the class is in line with the program from the Director General of Vocational Schools who wants to marry Vocational High School with Industry. The learning carried out in SMK is expected to be able to link and match with the needs of the industry. This is done to improve the quality of learning to be more effective and efficient (Herlandy & Novalia, 2019; Jatmoko, 2017). Private sector business leaders believe that mismatch is primarily due to the problems of educational structure, quality and the content of the educational system, particularly university system has failed to provide the required skills, attitudes and job orientation for the graduate workforce (Senarath & Patabendige, 2014). In addition to identifying the reasons for the education mismatch, it is important to identify the impact of graduates who are not in accordance with education, even the large number of education mismatches makes unemployment increase (Diem, 2014; Granado-Alcón et al., 2020). Students go to college and earn degrees with the hope of succeeding in the world of work that matches their education. But one aspect of a successful job market is the ability to capitalize on the investment made in school in a future job (Diem, 2014; Robst, 2017).

The Center of Excellence Vocational high School is a program from the Director General of Vocational Schools which is a vocational development program by providing assistance in the form of physical and non-physical for the sake of school progress. The purpose of Center of Excellent Vocational School program is as a continuous effort to realize the improvement of the quality of human resources for SMK students in line with today's needs in the industry. Reducing the imbalance that occurs between the availability of labor and the needs expected by the industry (supply and demand) (Husein, 2019; Wahzudik, 2018). One of the learning model in center of excellent vocational high school emphasized in project based learning model. Project-based Learning is learning that uses projects as a medium in the learning process to achieve soft skills, hard skills and character. The emphasis of learning lies in the activities of students in producing products that apply the skills of researching, analyzing, creating, and presenting learning products based on real experience. Project-based learning is a teaching and learning model that attracts students to learn via projects (Abidin et al., 2020; Oktavianto, 2017). Projects include research activities to make students concentrate on such complicated tasks as design, problem resolution and decision making. The project here is where students are directed to research an activity which includes designing, solving problems and making decisions. Learning process that follows industry needs with the project base learning model; it is expected to be linear with the production process what the company does (Elisabet et al., 2019; Mardi, 2021). Project based learning is one of the learning models which produce a product as an output, for example creating a short movie for english narrative material in class. This model is suitable for teaching english from elementary school until university level (Burlbaw, 2013; Jacques, 2017). Project based learning focused on training students to increase knowledge based environment include problem solving abilities, teamwork skills, communication skills, personal skills and resource management skills (Aldabbus, 2018; Hung et al., 2012).

Generally, Project based Learning is believed to be an important learning approach that make students are able to develop skills necessary for future success and to face the challenges in life. Social constructivist methodologies have been used for learning , such as collaborative thinking, project based learning, problem based learning, and peer teaching clusters (Afriana et al., 2016; Almulla, 2018). Improvement of informal learning, retention and examination results as opposed to traditional teaching approaches are the most widely researched subject of project based learning (Elisabet et al., 2019; Rubrica, 2018). Many kinds of literature on project based learning result and soft skills can be accessed from business programmes focused mainly on pedagogy at the graduate level (Succi & Canovi, 2020; Wiek et al., 2014). In technical and vocational department, the evaluations of project-based learning are contained mainly in one subject or lesson compared to traditional learning in various regional contexts (De la Puente et al., 2018; Supriadi et al., 2019).

On the other hand, previous studies found many findings which supported project based learning to increase retention knowledge in graduate programs in science, economics and business compared with traditional instruction (Ayaz & Söylemez, 2015; Kubiato & Vaculová, 2011). There is a little difference in their study that prove project based learning model is not the superiority compared to conventional approaches of learning. Several reports didnt consider that students at project based learning had better developed some cross curricular abilities than the students which taught conventionally (Oktay & Oktay., 2017). The finding of the research about the growth of knowledge and conducted ten field studies, eight of

which examined about project based learning to determine the relationship between techniques and abilities (Garnjost & Brown, 2018). SMK teachers must be able to develop learning models that can produce aspects of work skills. One of the most critical problems in the teaching and learning process of English in Vocational High Schools is the reluctance and lack of creativity of teachers to find ways to make learning more creative and enjoyable (Sari et al., 2021). Project-based learning has been carried out at SMKN 12 Surabaya on the basics of animation, continued at the animation production stage and post animation production (Fajra & Novalinda, 2020).

Being an english teacher is an amazing experience because teaching is challenging and professional job especially for english teacher for young learner (EYL) (Darwis & Hasanah, 2020; Ratminingsih et al., 2018). Teaching English in the 21st century requires teachers to master various skills such as analyzing and solving problems, creating and innovating, critical thinking, collaborating and communicating. In the teaching and learning process, english teacher not only transfer knowledge to their students but also they must be able to build positive emotion and social interaction in class. One way to fulfill it, that it needs a new interesting and interactive material (Anggreni et al., 2019). The teacher need to know in detail about the learner's style of study so that the learning objectives can be achieved well. After learning process in class, the teacher have to do self reflection on peer teaching. Self reflection is one of the most important thing in learning process (Wanci & Darwis, 2019). The usage of module is one of the way that can be done to attract the student's attention. Reflection is important for them to do after teaching in class, it is also can support their professionalism as teacher (Sutherland et al., 2010). The training module is seen as an option for guidance in conducting training activities. With the module, it is very helpful for instructors to convey material in the form of knowledge, skills and work attitudes. Once the role of the teacher is so important, the government is always trying to improve competence and professionalism of teachers through various trainings. For this reason, it is necessary to carry out a more active and honing independent training program the ability of teachers in order to improve the quality of competence and professionalism teacher. Module is a learning tool or facility that contains materials, methods, limitations of learning materials, instructions for learning activities, exercises and ways to evaluate which are designed systematically and attractively, to achieve the expected competencies and can be used systematically independent (Aditia & Muspiroh, 2013; Herminayu, 2020).

Previous research about training modul of Pedagogical Content Knowledge to improve pedagogical and professional competence of mathematic teachers (Wulandari, 2018). Furthermore, another research shows that training using the andragogy-based CAR writing training module with the help of CMS Moodle, participants' competence is higher than before using the module (Giarti, 2016). Teachers face challenges in producing students with basic 21st century skills which include communication, collaborative, critical and creative thinking as well as values and ethics. A training module in the teaching and application of 21st century Basic skills (MP-A21) was developed (Hsu & Lin, 2020). A training module for the management of authentic science teacher assessments at SMPN 1 Waingapu (Bano, 2018). This was done because science teachers had limited constraints in practicing attitude and skill assessment on students (Perdana et al., 2017; Sadimin et al., 2017). This research focuses on the training that has been attended by teachers with various problems. This study aims to develop a soft skill-oriented project-based learning model training module for English teachers in SMK. The research subjects were English teachers from four vocational high schools.

2. METHOD

This type of research is a research and development (R&D) type. This research uses the ADDIE development model. The research approach used is a mix method which is a combination of qualitative and quantitative research. The subjects of this study were the principal, vice principal, head of the department and English teachers. This research was conducted in 4 SMK in Semarang Regency, namely SMKN 1 Jambu, SMKN 1 Bawen, SMK Islam Sudirman 1 Ambarawa and SMK Islam Sudirman 2 Ambarawa. The time of the research was carried out in September – December 2021. Data collection techniques in this study were through interviews, observations, documentation studies, expert validation questionnaires and trainees' responses, and tests. While the data collection instruments were through validation sheets, questionnaire sheets, observation sheets, pre-test and post-test question sheets, interview sheets and documentation study sheets. Data collection techniques and instruments using the ADDIE model can be seen in Table 1.

Table 1. Technique and Instrument Collecting Data

Stages	Data Types	Data Source	Technique	Instruments
<i>Analysis</i>	Need analysis of soft skill oriented Project based Learning training module	Principal, vice principal and English teachers	Interview, observation and documentation	Interview guidance, observation list, documentation sheet
<i>Design</i>	Making soft skill oriented project based learning training module, training participant manual, and training manual for instructors	Module expert lecturer	Expert validation questionnaire	Validation Questionnaire
<i>Development</i>	Draft of project based learning model training module for soft skill oriented.	Lecturer (module expert, English material expert and potential module user	Expert validation questionnaire	Validation questionnaire
<i>Implementation</i>	Project based learning model training module for soft skill oriented.	Training participants	Questionnaire participants responses	Questionnaire sheet
<i>Evaluation</i>	Soft skill oriented project based learning training module which has been revised	Training participants	Questionnaire participants responses	Questionnaire sheet

Qualitative data validation was carried out through triangulation of sources and techniques. Quantitative data on pre-test and post-test questions were validated using SPSS. The increase in teacher competence can be seen from the results of the pre-test and post-test that have been compared. Overall, the implementation of the training using the project-based learning model training module is considered successful if 80% of the training participants get a minimum post-test score of 7. The validation of the training module is carried out by expert module lecturers, expert lecturers on English material and prospective module users. Classification of the quality of the module is obtained through the calculation of the class interval that shown in [Table 2](#).

Table 2. Classification of Module Quality

Score	Percentage	Category
46 - 50	88% - 100%	Excellent
37 - 45	71% - 87%	Good
28 - 36	54% - 70%	Pretty Good
19 - 27	37% - 53%	Not good
10 - 18	20% - 36%	Not very good

3. RESULT AND DISCUSSION

Result

So far, training for English teachers is still rare. Prior to the COVID-19 pandemic, it was carried out together with other subjects during the implementation of the 2013 curriculum. During the COVID-19 pandemic, training for English teachers was implemented with the implementation of a new paradigm curriculum at the Center of Excellent Vocational High School. The training was carried out for 10 days. Some of the weaknesses of the training materials so far are: a) the facilitator delivers the material directly through powerpoint so that the teacher cannot study it independently; b) The material delivered by

district instructors at the time of implementing the 2013 curriculum on the concept of the scientific approach was still not well understood as well as learning models and learning methods that were less applicable due to time constraints because they had to immediately change to participants from other schools; c) Implementation of the new paradigm curriculum at the Center of Excellence Vocational School uses material delivered through the LMS, because the training is carried out online. With limited time and a lot of material, teachers don't really understand it because there are so many differences with the 2013 curriculum. By looking at some of the weaknesses in the implementation of the training above, the researchers conducted training with a Soft Skill-oriented Project based Learning learning model through online by first holding a pre-test before giving the training module. The results of the pre test can be seen in [Table 3](#).

Table 3. Comparison of Pre-Test and Post-test results

No	Teacher's name	Score			
		Pre test	Ket	Post Test	Note
1	HB	7	T	8	T
2	DS	6	TT	8	T
3	YK	7	T	9	T
4	DS	5	TT	6	TT
5	CH	7	T	8	T
6	EN	8	T	10	T
7	DN	8	T	9	T
8	AZ	7	T	10	T
9	JV	7	T	9	T
10	PR	5	TT	9	T
11	AP	5	TT	9	T
12	EK	5	TT	6	T
13	UM	4	TT	6	TT
14	WN	8	T	9	T
15	NT	5	TT	8	T
Average		6,26		8,2	
Percentage		53,3%		86,6%	

[Table 3](#) shows that the average pre-test of the training participants was 6.2 where 7 out of 15 participants did not complete with a percentage of 53.3%. The average post-test of the training participants was 8.2 where 13 of the 15 trainees completed the training with a percentage of 86.6%. The data shows an increase in the competence of the trainees after participating in the Soft Skill Oriented Project based learning model training. This can be seen from the increase in the value obtained by the training participants. In addition, the tasks given by the resource persons in the form of making one lesson plan and one teaching module with the Project based learning model of Soft Skill Oriented Learning were successfully made by 5 training participants. Meanwhile, the results of observations during the training of Soft Skill Oriented Project Based Learning learning models can be seen in [Table 4](#).

Table 4. Training Observation Results

No	Components	Score	
		I	II
1	Clarity of resource persons in providing training materials via online	4	5
2	Clarity of audio video and voice of resource persons during online training.	4	4
3	Teacher's understanding of the material in the training module	4	4
4	The activeness of the teacher in discussing and asking questions during the training	3	4
5	The seriousness of the teacher in doing the exercises during the implementation of the training	5	4
6	Teacher enthusiasm for the content of the training module	4	4
7	The teacher's interest in the content of the material in the module and the way the interviewees are delivered	4	4
8	Resource persons' skills in delivering the material in the module and patience in responding to questions from training participants.	4	4

No	Components	Score	
		I	II
9	The readiness of the facilitator to facilitate the needs of the training participants	4	5
10	Skills of resource persons/facilitators in animate and guide the training atmosphere	5	4
Score		41	42
Average		4,1	4,2
Percentage(%)		82%	84%

Table 4 shows that the average scores for the implementation of the Soft Skill-Oriented Project Based Learning training module development training carried out at the implementation stage were 4.1 and 4.2 with a percentage of 82% and 84% in both categories. Based on the results of the observations above, it can be concluded that the clarity, activeness, seriousness and involvement of the trainers and trainees in participating in the training for the development of the Soft Skill-Oriented Project Based Learning model training module is good.

Meanwhile, the response of the training participants to the Project based Learning model training module with Soft Skill Orientation was very good with an average score of 4.5 or an average of 83.55% in the Good category. However, there are several aspects that were not well received by the training participants, namely the appearance aspect where there were 2 trainees who gave a less agreeable response to point (2) and there was one participant who gave a less agreeable response to point (3). The training participants also provided comments and suggestions related to the training module, namely: a) This module is very good to be recommended as one of the English language guidebooks in SMK. b) This module has been read, reviewed and researched and is declared to have fulfilled all the elements of the teaching module from the module writing framework, information about the module in teaching, the module outline, the module position map, the module usage instructions, the final purpose of the performance specification, success criteria, checks mastery of competency standards, and learning elements. c) Elements of learning which include study plans, a series of learning activities such as learning objectives, material descriptions, summaries, assignments and student evaluations, as well as formative tests delivered clearly, easily and coherently. d) The material in the module is very complete and quite comprehensive and the examples are well explained and equipped with a youtube link that can be accessed by readers. e) This module is very good. Overall easy to understand and learn independently.

Discussion

The development of the Project Based learning learning model training module uses the ADDIE model which includes 5 stages, namely the analysis stage, the design stage, the development stage, the implementation stage and the evaluation stage. The main part of a teacher's job is to collect and analyze a lot of information to ensure that the learning process runs well and effectively. This is where needs analysis is needed (Effendi et al., 2021; Kusumayuni, 2021). English teachers really need training that can accommodate their need for learning models that make learning interesting for students. A needs analysis can help find out whether the program is suitable for the goals and objectives of learners to learn a language and at the same time be used to help improve various components of a more comprehensive program oriented to the needs of the learners (Boroujeni & Fard, 2013). Furthermore, Boroujeni and Fard argue that a needs analysis can also help in evaluating existing programs and if deficiencies are found it can assist in determining the need to introduce changes that may suit the needs of students. The results of the analysis determine the type of action or product to be developed. So that after conducting a needs analysis, the researchers attempted to create a Soft Skill Oriented Project Based Learning Learning Model training module. The framework design stage carried out by the author is in accordance with the characteristics of the module that can be used independently. Module is a written and systematic learning material and refers to learning objectives that can be studied independently and can be used to improve the learner's ability to master a learning unit and is equipped with activities and evaluation too (Rohman, 2013; Suarsana & Mahayukti, 2013).

The author has succeeded in developing the Soft Skill Oriented Project based Learning Learning Model training module which consists of 4 learning activities. Each learning activity contains objectives, indicators of competency achievement, material descriptions, learning activities, exercises, summaries, reflections and follow-up and answer keys. The Soft Skill-Oriented Project Based Learning Learning Model Training Module which has been fully developed by the author is then validated by a module expert lecturer, an English material expert lecturer and an English teacher to get comments, suggestions and improvements so that the module becomes perfect before being tested on a limited basis. implementation

stage. After the module is repaired according to the suggestions from the validation results, this training module is printed in the form of a book so that it is ready to be implemented.

The module expert lecturer gave a score of 80% and was in the good category, which means that the Soft Skill Oriented Project Based learning learning model training module as a product of developing the Soft Skill Oriented Project based Learning learning model training module using the ADDIE model has good quality. Some of the suggestions given are 1) The purpose of preparing the training module is related to teacher training activities, not directly to student learning; 2) The inclusion of pictures in each unit of learning activities emphasizes teacher training, not the content of the material being trained; 3) Improving the organization of module materials; 4) Enrich the bibliography; 5) Include the source of the citation. The English material expert lecturer gave a score of 90% and was in the very good category with a validation statement stating that the project-based learning model training module material was suitable for use with revisions. The validator continues to provide comments and suggestions for improvement. Some things that become suggestions for improvement to be completed are; 1) Fixing typing errors in the writing system because there are still some inconsistencies. For example is the use of spaces, slashes. 2) Adding some illustrations and coloring on each page to make it more interesting for readers. 3) Adding an example of a project based learning model by adding a video in the form of a youtube or google drive link.

Validation by prospective module users, namely the English teacher at SMKN 1 Bawen, gave a score of 90% and was in the very good category. The validation statement from the prospective user of the module states that the soft skill-oriented project based learning model training module is suitable for use with revisions according to suggestions. Some things that become suggestions for improvement are: 1) Fixing typing errors; 2) Fixing the consistency of writing terms; 3) Fixing the use of language rules. Based on the explanation of the assessment or the results of the validity test of module experts, English material experts and prospective module users, it can be concluded that overall the Project Based Learning Oriented Soft Skills learning model training module has good quality with a high level of validation so that the Project Based learning model training module Soft Skill Oriented Learning is feasible to be implemented after being corrected according to suggestions. The implementation phase of the Soft Skill Oriented Project Based learning learning model training module was carried out through training involving 15 English teachers in four vocational schools in Semarang Regency, namely SMKN 1 Jambu, SMKN 1 Bawen, SMK Islam Sudirman 1 Ambarawa, and SMK Islam Sudirman 2 Ambarawa. . The training was carried out for two days online and went well, smoothly and safely. The module which is the main source of training can be understood well by the English teachers of the trainees. The results of product implementation through training have not been revised.

The evaluation phase was carried out to determine the quality of the implementation of the training module development of the Soft Skill Oriented Project basd Learning learning model and the responses of the trainee teachers to the training module through the data: 1) the results of the teacher competency test before and after the training; 2) the results of observations by 2 observers; and 3) a questionnaire on the responses of the trainee teachers to the Soft Skill Oriented Project Based learning model training module. Evaluation to see the increase in the competence of the trainees through pre-test and post-test showed an increase in teacher competence. the average pre-test score is 6.26 with a percentage of 53.3% and the average post-test score is 8.2 with a percentage of 86.6%. Evaluation to determine the feasibility of the module was carried out through a questionnaire on the responses of teachers (trainees) to the Project based Learning model training module. The average response of the trainees on the aspects of appearance, training materials, and language use with 16 questions was 4.5 with an average percentage of 83.55% in the good category. Based on the discussion described above, it can be said that the soft skill-oriented Project based Learning learning model training module that was developed includes good teaching materials and is suitable for use as independent study material for English teachers. The material in the module is arranged systematically and uses clear and easy-to-understand language.

4. CONCLUSION

The development of soft skill-oriented Project Based learning learning model training modules is carried out based on the stages of developing the ADDIE model, namely (a) the analysis stage; (b) the design stage; (c) development stage; (d) implementation stage; (e) evaluation stage. The validation test of the training module by module experts, English language experts and prospective module users is 80% in the good category, 90% in the very good category and 90% in the very good category. The implementation of the module through training shows an increase in the competence of the trainee teachers where before using the training module 7 of 15 trainees did not complete with a percentage of 53.3%, an increase after using the training module where 13 out of 15 trainees completed with a percentage of 86.6%.

5. REFERENCES

- Abidin, Z., Rumansyah, & Arizona, K. (2020). Pembelajaran Online Berbasis Proyek Salah Satu Solusi Kegiatan Belajar Mengajar di Tengah Pandemi Covid-19. *Jurnal Ilmiah Profesi Pendidikan*, 5(1), 64–70. <https://doi.org/10.29303/JIPP.V5I1.111>.
- Aditia, M. T., & Muspiroh, N. (2013). Pengembangan Modul Pembelajaran Berbasis Sains, Lingkungan, Teknologi, Masyarakat dan Islam (Salingtemasis) dalam Meningkatkan Hasil Belajar Siswa pada Konsep Ekosistem Kelas X di SMA NU (Nadhatul Ulama) Lemahabang Kabupaten Cirebon. *Scientiae Educatia: Jurnal Pendidikan Sains*, 2(2), 127–148. <https://doi.org/10.24235/sc.educatia.v2i2.478>.
- Afriana, J., Permanasari, A., & Fitriani, A. (2016). Project Based Learning Integrated to STEM to Enhance Elementary School's Students Scientific Literacy. *Jurnal Pendidikan IPA Indonesia*, 5(2), 261–267. <https://doi.org/10.15294/jpii.v5i2.5493>.
- Aldabbus, S. (2018). Project-Based Learning: Implementation & Challenges. *International Journal of Education, Learning and Development*, 6(3), 71–79.
- Almulla, M. (2018). Investigating Teachers' Perceptions of Their Own Practices to Improve Students' Critical Thinking in Secondary Schools in Saudi Arabia. *International Journal of Cognitive Research in Science, Engineering and Education*, 6(3), 15–27. <https://doi.org/10.5937/IJCRSEE1803015A>.
- Anggreni, A., Hastini, E., & Erniwati, E. (2019). Analyzing Teachers' Praise in Classroom Interaction. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 7(2). <https://ejournal.iainpalopo.ac.id/index.php/ideas/article/view/1037/773>.
- Ayaz, M. F., & Söylemez, M. (2015). The Effect of the Project-Based Learning Approach on the Academic Achievements of the Students in Science Classes in Turkey: A Meta-Analysis Study. *Education & Science/Egitim Ve Bilim*, 40, 178.
- Bano, V. O. (2018). Pengembangan Modul Pelatihan Pengelolaan Penilaian Autentik Guru IPA SMP. *Jurnal Manajemen Pendidikan*, 5(2), 139–151. <https://doi.org/10.24246/j.jk.2018.v5.i2.p139-151>.
- Boroujeni, S. A., & Fard, F. M. (2013). A Needs Analysis of English for Specific Purposes (ESP) Course for Adoption of Communicative Language Teaching:(A Case of Iranian First-Year Students of Educational Administration). *International Journal of Humanities and Social Science Invention*, 2(6), 35–44. <https://www.academia.edu/download/31549670/H0263035044.pdf>.
- Burlbaw, L. (2013). *STEM Project Based Learning: An Integrated Science, Technology, Engineering and Mathematics (STEM) Approach*. Sense Publishers.
- Darwis, N., & Hasanah, U. (2020). The Effectiveness of Using Teaching English for Young Learner (TEYL) Module for Pre-service Teacher Based on Teacher Training Approach. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 8(1), 164–174. <https://doi.org/10.24256/ideas.v8i1.1022>.
- De la Puente, M., Selene, H., Acuña, L., & Delgado, M. (2018). The Effectiveness Of Project-Based Learning Methodology in an External Commerce Course: A Preliminary Analysis for the Colombian Caribbean Region. *Journal of Economics and Economic Education Research*, 19(2), 1–15.
- Diem, A. (2014). Overeducation among Graduates from Universities of Applied Sciences: Determinants and Consequences. *International Journal of Economics*, 2(1), 27–43. <https://doi.org/10.18533/jefs.v3i02.105>.
- Effendi, R., Herpratiwi, H., & Sutiarso, S. (2021). Pengembangan LKPD Matematika Berbasis Problem Based Learning di Sekolah Dasar. *Jurnal Basicedu*, 5(2), 920–929. <https://doi.org/10.31004/basicedu.v5i2.846>.
- Elisabet, E., Relmasira, S. C., & Hardini, A. T. A. (2019). Meningkatkan Motivasi dan Hasil Belajar IPA dengan Menggunakan Model Pembelajaran Project Based Learning (PjBL). *Journal of Education Action Research*, 3(3), 285–291. <https://doi.org/10.23887/jear.v3i3.19448>.
- Fajra, M., & Novalinda, R. (2020). Project Based Learning: Innovation to Improve the Suitability of Productive Competencies in Vocational High Schools with the Needs of the World of Work. *International Journal of Multi Science*, 1(8), 1–11. <https://multisciencejournal.com/index.php/ijm/article/view/83>.
- Garnjost, P., & Brown, S. M. (2018). Undergraduate Business Students' Perceptions of Learning Outcomes in Problem Based and Faculty Centered Courses. *The International Journal of Management Education*, 16(1), 121–130. <https://doi.org/10.1016/j.ijme.2017.12.004>.
- Giarti, S. (2016). Pengembangan Modul Pelatihan Penulisan Karya Ilmiah Berbasis Andragogi Berbantuan CSM MOODLE. *Kelola: Jurnal Manajemen Pendidikan*, 3(1). <https://doi.org/10.1017/CBO9781107415324.004>.
- Granado-Alcón, M. D., Gómez-Baya, D., Herrera-Gutiérrez, E., Vélez-Toral, M., Alonso-Martín, P., & Martínez-Frutos, M. T. (2020). Project-Based Learning and the Acquisition of Competencies and

- Knowledge Transfer in Higher Education. In *Sustainability* (Vol. 12, Issue 23). <https://doi.org/10.3390/su122310062>.
- Herlandy, P. B., & Novalia, M. (2019). Penerapan e-Learning pada Pembelajaran Komunikasi dalam Jaringan dengan Metode Blended learning bagi Siswa SMK. *Journal of Education Informatic Technology and Science*, 1(1), 24–33.
- Herminayu, B. S. S. (2020). Pengembangan Modul Pelatihan Model pembelajaran BCCT bagi Guru dan Kepala Taman Kanak-Kanak. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 4(2), 1112–1123. <https://doi.org/10.31004/obsesi.v4i2.512>.
- Hsu, Y. Y., & Lin, C. H. (2020). Evaluating The Effectiveness of a Preservice Teacher Technology Training Module Incorporating SQD Strategies. *International Journal of Educational Technology in Higher Education*, 17(1), 1–17. <https://doi.org/10.1186/s41239-020-00205-2>.
- Hung, C. M., Hwang, G. J., & Huang, I. (2012). A Project-Based Digital Storytelling Approach for Improving Students' Learning Motivation, Problem-Solving Competence and Learning Achievement. *Journal of Educational Technology & Society*, 15(4), 368–379. <https://www.jstor.org/stable/pdf/jeductechsoci.15.4.368.pdf>.
- Husein, M. T. (2019). Link and Match Pendidikan Sekolah Kejuruan. *Rausyan Fikr : Jurnal Pemikiran dan Pencerahan*, 15(2), 39–47. <https://doi.org/10.31000/rf.v15i2.2037>
- Jacques, L. A. (2017). What does Project-Based Learning (PBL) Look Like in. The Mathematics Classroom. *American Journal of Educational Research*, 5(4), 428–433. <http://article.scieducationalresearch.com/pdf/EDUCATION-5-4-11.pdf>.
- Jatmoko, D. (2017). Relevansi Kurikulum SMK Kompetensi Keahlian Teknik Kendaraan Ringan terhadap Kebutuhan Dunia Industri di Kabupaten Sleman. *Jurnal Pendidikan Vokasi*, 3(1), 21–28. <https://doi.org/10.21831/jpv.v3i1.1572>.
- Kubiatko, M., & Vaculová, I. (2011). Project-Based Learning: Characteristic and the Experiences with Application in the Science Subjects. *Energy Education Science and Technology Part B: Social and Educational Studies*, 3(1), 187–196. <https://doi.org/10.26417/ejis.v3i1.p187-196>.
- Kusumayuni, P. N. (2021). Pengembangan E-Book Berorientasi Ilmiah pada Pelajaran IPA Sekolah Dasar Kelas V. <https://doi.org/http://dx.doi.org/10.23887/jisd.v5i1.32048>.
- Mardi. (2021). Meningkatkan Mutu Sumber Daya Manusia Bidang Animasi melalui Program SMK PK (Pusat Keunggulan). *Jurnal Inovasi dan Riset Akademik*, 2(8), 1259 – 1268. <https://doi.org/10.47387/jira.v2i8.208>.
- Murtinugraha, R. E. (2017). Evaluasi Pelaksanaan Kurikulum 2013 pada SMK Negeri Program Keahlian Teknik Bangunan di Jakarta. *Jurnal Pensil: Pendidikan Teknik Sipil*, 6(1), 21–28. <https://doi.org/10.21009/jpensil.v6i1.7250>.
- Oktavianto, D. A. (2017). Pengaruh Pembelajaran Berbasis Proyek Berbantuan Google Earth terhadap Keterampilan Berpikir Spasial. *Jurnal Teknodik*, 21(1), 1–15. <http://118.98.227.127/index.php/jurnalteknodik/article/view/227>.
- Oktay, B., & Oktay, K. (2017). The Effect of Project Based Learning on Seventh Grade Students 'Academic Achievement. *International Journal of Instruction*, 10(1), 37–54. <https://doi.org/10.12973/iji.2017.1013a>.
- Perdana, F. A., Sarwanto, S., Sukarmin, S., & Sujadi, I. (2017). Development of E-Module Combining Science Process Skills and Dynamics Motion Material to Increasing Critical Thinking Skills and Improve Student Learning Motivation Senior High School. *International Journal of Science and Applied Science: Conference Series*, 1(1), 45–54. <https://doi.org/10.20961/ijscs.v1i1.5112>.
- Ratminingsih, N. M., Mahadewi, L., & Divayana, D. (2018). ICT-Based Interactive Game in TEYL: Teachers' Perception, Students' Motivation, and Achievement. *International Journal of Emerging Technologies in Learning*, 13(9), 190–203.
- Robst, J. (2017). Education and job match: The relatedness of college major and work. *Economics of Education Review*, 26, 397–407. <https://doi.org/10.1016/j.econedurev.2006.08.003>.
- Rohman, M. (2013). *Strategi & Desain Pengembangan Sistem Pembelajaran*. Prestasi Pustakaraya.
- Rubrica, R. D. B. (2018). An Action Research on Project-Based Learning and Understanding by Design and Their Effects on the Science Achievement and Attitude of Science Students. *Online Submission*, 10(5). <https://doi.org/10.7176/jep/10-5-02>.
- Sadimin, S., Hardyanto, W., & Slamet, A. (2017). Developing an E-Module-Based Classroom Action Research Training Model. *The Journal of Educational Development*, 5(3), 353–364. <https://doi.org/10.15294/jed.v5i3.18123>.
- Sari, R. A., Musthafa, B., & Yusuf, F. N. (2021). Persepsi Guru terhadap Pembelajaran Berbasis Proyek di Sekolah Menengah Kejuruan. *Jurnal Penelitian Pendidikan*, 21(2), 1–11. <https://doi.org/10.068.101/jpp.v21i2.36972>.

- Senarath, S. A. C. L., & Patabendige, S. S. J. (2014). Job-Education Mismatch Among The Graduates: A Sri Lankan Perspective. *Ruhuna Journal of Management and Finance*, 1(2), 1–16.
- Suarsana, I. M., & Mahayukti, G. A. (2013). Pengembangan E-Modul Berorientasi Pemecahan Masalah untuk Meningkatkan Keterampilan Berpikir Kritis Mahasiswa. *Jurnal Pendidikan Indonesia*, 2(2), 264–275. <https://doi.org/http://dx.doi.org/10.23887/jpi-undiksha.v2i2.2171>.
- Succi, C., & Canovi, M. (2020). Soft Skills to Enhance Graduate Employability: Comparing Students and Employers' Perceptions. *Studies in Higher Education*, 45(9), 1834–1847. <https://doi.org/10.1080/03075079.2019.1585420>.
- Supriadi, N., Syazali, M., Lestari, B. D., Dewi, E. S., Utami, L. F., Mardani, L. A., & Putra, F. G. (2019). The Utilization of Project Based Learning and Guided Discovery Learning: Effective Methods to Improve Students' Mathematics Ability. *Al-Ta Lim Journal*, 25(3), 261–271. <https://doi.org/10.15548/jt.v25i3.487>.
- Supriyadi, E. (2015). Pendidikan dan Penilaian Karakter di Sekolah Menengah Kejuruan. *Jurnal Cakrawala Pendidikan*, 2. <https://doi.org/10.21831/cp.v0i2.7590>.
- Sutherland, L., Howard, S., & Markauskaite, L. (2010). Professional Identity Creation: Examining the Development of Beginning Preservice Teachers' Understanding of Their Work as Teachers. *Teaching and Teacher Education*, 26(3), 455–465. <https://doi.org/10.1016/j.tate.2009.06.006>.
- Wahzudik, N. (2018). Kendala dan Rekomendasi Perbaikan Pengembangan Kurikulum di Sekolah Menengah Kejuruan. *Indonesian Journal of Curriculum and Educational Technology Studies*, 6(2), 87–97. <https://doi.org/10.15294/ijcets.v6i2.26712>.
- Wanci, R., & Darwis, N. (2019). Analyzing In-Service and Pre-Service Teachers' Perceptions on Peer Reflection at IAIN Bone. *Asian EFL Journal*, 23(3–4), 448–459.
- Wiek, A., Xiong, A., Brundiers, K., & Van Der Leeuw, S. (2014). Integrating Problem and Project-Based Learning Into Sustainability Programs: A Case Study on the School of Sustainability at Arizona State University. *International Journal of Sustainability in Higher Education*, 02. <https://doi.org/10.1108/ijsh-02-2013-0013>.
- Wulandari, M. (2018). Pengembangan Modul Pelatihan Pedagogical Content Knowledge (PCK) dalam Meningkatkan Kompetensi Profesional dan Kompetensi Pedagogik Guru Matematika SMP. *Jurnal Kelola*, 5(2), 177–189. <https://doi.org/10.24246/j.jk.2018.v5.i2.p177-189>.