



The Development of Self Directed Learning Model (SDL) for Basic Competence in Analyzing Video, Animation AND/OR Digital Music

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Abstract

One of the problems employing learning media is the incompetence in operation and application procedures. An apparent lack of using the audio video as a learning media causes by the teachers themselves. The purpose of the study is to arrange a model of self-directed learning (SDL) with audio-visual media to measure students' result in terms of independence and proficiency that are valid, reliable and effective. Research and Development (R&D) method was employed to conduct the research with Four-D model of Thiagarajan. The eligibility of SDL model was tested with CVR in the aspect of validity, meanwhile the reliability was measured with Kappa statistics. The effectiveness of SDL was tested with t-test of dependent variable in terms of students' independence and proficiency in operating the audio/video devices as learning media. The result showed that the validation of audio/video media, according to the three evaluators, was categorized into valid, the reliability was marked substantial, and the effectiveness of improvement related to students' result in terms of independence and proficiency using SDL showed t-posttest 5,342, significantly, was effective to be employed. The conclusion of this study was that the SDL model with audio video media to acquire basic competence in analyzing video, animation and/or digital music production were reliable, eligible and effective, therefore could be applied.

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INTRODUCTION

A learning process in vocational high schools takes precedence over practice rather than theory. Consequently, students need to grow independence and responsibility in order to complete their assignments, and utilize technology as reference and learning material that help them understand the assignments given by the teachers. Moreover, the educators also have to use technology as learning media to reach the expected students' result.

A research conducted by Dewi Octofa Rachmawati entitled *Application of the Self-Directed Learning Model to Improve Results and Students' Independent Learning*. The research was aimed to improve students' result as well as independent learning, and their responses towards self-directed learning model in class. The study was carried out in Department of Physics Education, Faculty of Mathematics and Natural Science of Undiksha, involving 7 students in the even semester of the academic year 2008/2009. It consisted of 2 cycles of action. Students' result data were collected with tests and learning contract. The independent learning and responses were collected with questionnaire. The data were analyzed descriptively. The research showed that there was improvement of students' result and independent learning after the adoption of self-directed learning model. In addition, the findings also indicated positive response from the students towards the implementation of the model.

The school observations found that, in the previous academic year, students practiced with textbooks, and used their own mobile phone featured with a simple video editing application as a learning medium. After that the teacher checked their progress of works. Another finding was that, in terms of facility and infrastructure, the school only had two laboratories of computer that hampered students' activity especially during computer-based national exam or other practical subjects during that semester. Moreover, the teachers never introduced any video processing software on computer such as *Adobe Premiere*.

The initial research indicated a positive effect with the application of audio-visual in which the students focused on their work by independently paying attention to the steps in tutorial video and explore it, while the negative effect was students still found difficulties to follow some instructions by themselves although the explanation in tutorial video was clear. On the next meeting, students were given the same tutorial video accompanied with a worksheet, therefore there were some changes which were (1) students were able to explore their abilities such as looking for some music background based on their interest, (2) students asked questions outside the material given that indicate their curiosity such as how to create a slow-motion effect on the video, (3) the students learned independently and asked the teachers or friends if they met with any curiosity, (4) students focused more on the practice of video editing with *Adobe Premiere* which would formed responsibility and discipline, (5) students played back the tutorial video to understand more.

The purpose of this research is to test the validity, reliability, eligibility and effectiveness of audio video media towards basic competence in analyzing video, animation and/or digital music production in SMK Islamic Centre Baiturrahman Semarang and to study the independence and proficiency aspect of students from Self-Directed Learning (SDL) model. Hence, it can be advantageous to the development and implementation of Self-Directed Learning (SDL) method that can be employed to make planning, implementation and evaluation of learning in vocational institutions towards basic competence in analyzing video, animation and/or digital music production of the simulation and communication digital subject.

RESEARCH METHODOLOGY

The method employed in conducting this study was Research and Development (R&D). Research and Development (R&D) method is a process to develop and produce a certain product that will be tested in its effectiveness (Sugiyono, 2015:407). This study produced audio video products that

were applied to Self-Directed Learning (SDL) model in simulation and communication digital subject on basic competence in analyzing video, animation and/or digital music production to improve students' results. The method used with the 4-D development model that consisted of *Define phase*, *Design phase*, *Develop phase* and *Disseminates phase*. The evaluation of students' result were analyzed experimentally.

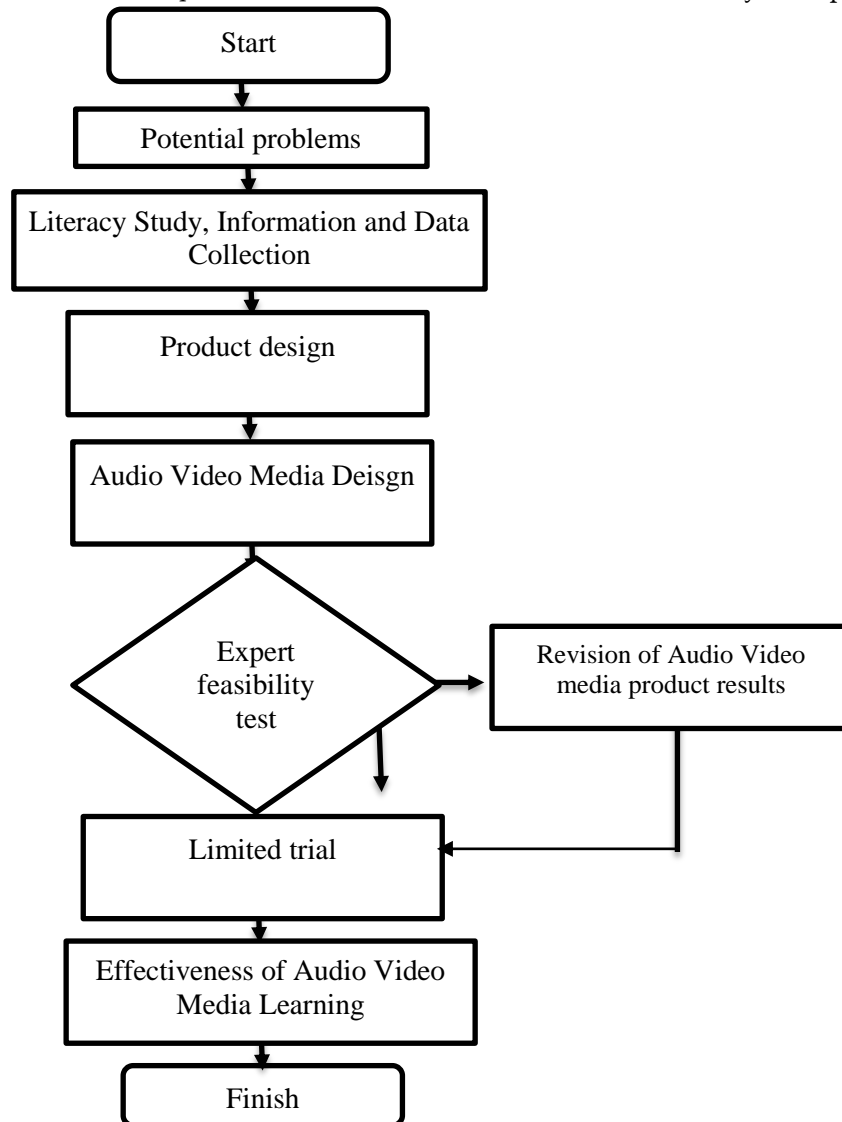


Figure 1. Flowchart Research Methods

Research and Development (R&D) method was used as a procedure to develop audio-video-based learning process or Self-Directed Learning (SDL) in the computer and network engineering major in SMK Islamic Centre Baiturrahman Semarang. Based on that methodology a product of Self-Directed Learning (SDL) model was expected to be produced.

One of the validity tests that can be conducted towards a product is a validation from expert that aimed to collect any suggestion for improving the audio video media. The validators in this study were an academic expert in learning method, an educator of multimedia, and an expert who works in the educational and cultural multimedia development center. The expert validity test (expert judgment) employed validation questionnaire. The validation of the questionnaire was done by experts in multimedia in which media would be applied in the simulation and communication digital subject of SMK Islamic Centre Baiturrahman Semarang, majoring in computer and network engineering. Kappa coefficient test explains the measurement consistency made by three raters or consistency between two measurement methods or two measurement tools.

The data analysis was conducted using SPSS 20 that consisted of descriptive analysis, data analysis requirement test, and hypothesis test. Data test analysis required normality test and homogeneity test. Moreover, to measure students' result, the writer used independent t-test. The source of data were students of SMK Islamic Centre Baiturrahman Semarang grade X TKJ 1 in the simulation and communication digital subject.

The result of the validation for audio video learning media showed that 14 instruments of validity were valid to be used and another 4 instruments to be repaired/invalid. The result of the validation for students' independence were 12 valid instruments and 4 to be repaired/invalid. Meanwhile, the result of the validation for students' proficiency were 12 valid instruments and 4 to be repaired/invalid. The reliability value of the audio video learning media based on Kappa statistics was $0,0673 > 0,6$ with substantial criteria. The reliability value of students' independence instruments was $0,004$ with substantial criteria sig. 5% ($0,000 < 0,05$). In addition, the reliability value students' proficiency instruments was $0,002$ with substantial criteria sig. 5% ($0,000 < 0,05$). The data indicated that this media had a good level of validity and reliability. The value of Self-Directed Learning (SDL) was ($t > t$ table) or ($5,324 > 1,70$). In conclusion, Self-Directed Learning (SDL) that applied audio video media towards basic competence in analyzing video, animation and/or digital music production in the simulation and communication digital subject was reliable, eligible, and effective. Hence, it could be implemented.

RESULTS AND DISCUSSION

Self-Directed Learning (SDL) model

Findings on the Self-Directed Learning (SDL) towards basic competence in analyzing video, animation and/or digital music production were arranged for design phase and develop phase. Design phase on this study generated conceptual and empirical design from the development of Self-Directed Learning (SDL). This model was developed based on learning process of vocational school, such as the adjustment of the core competence and basic competence of computer and network engineering program, syllabus of simulation and communication digital subject, learning implementation plan, as well as audio video learning media. In addition, the research instruments had been organized to collect any data or information that was advantageous to answer the research problem. The research instruments were useful to discover the validity, reliability, eligibility, and effectiveness of Self-Directed Learning (SDL) implemented with audio video media.

Develop phase was the following phase. The phase included: 1) validation and revision of learning media, 2) validation of assessment instrument on students' independence and proficiency, 3) validation of practicality of the learning model, 4) limited-scale testing, and 5) final model. The validated media would be first tested on limited scale to adapt the model with the real condition. The result of the trial was then evaluated to get the final media that was applied to Self-Directed Learning (SDL) on basic competence in analyzing video, animation and/or digital music production. This media was provided with material such as introduction to Adobe Premiere, step-by-step instructions to edit a video, and exporting video into various formats.

The model developed in Self-Directed Learning (SDL) had three stages as follows: (1) planning, included identifying the purpose of learning process and determining the learning theme of the subject, (2) implementation, included any stage in students' independently learning process which grew creativity and innovation, encouraged them to solve the problem independently and arouse their curiosity in responsible way, (3) evaluation, which were students' competence related to attitude, knowledge and skill as well as cognitive, affective, and psychomotor aspects. The affective aspect/students' independence attitude and practical psychomotor were observed when they do the practice.

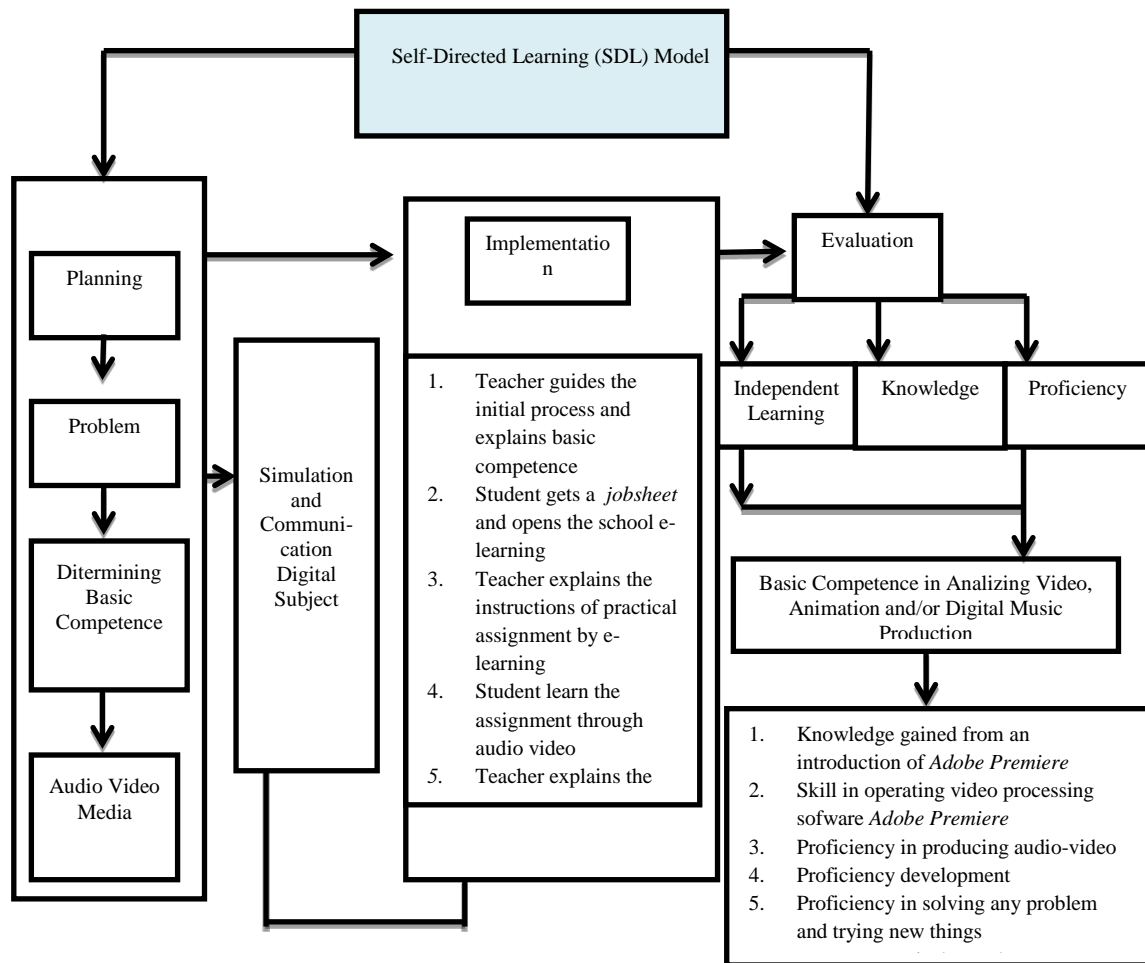


Figure 2. The final model of Self-Directed Learning

In Self-Directed Learning (SDL), the use of audio-visual applied for learning media was to measure students' independence of learning skill and proficiency in terms of utilizing the media towards basic competence in analyzing video, animation and/or digital music production with 10 to 15 minutes in length. The materials contained two topics as follows: the introduction of the video processing software or Adobe Premiere, and the steps to edit the video with the software. Those included starting the program, sorting the video that would be edited, importing the chosen video into the program, playing it from the track, and cutting the necessary part. Moreover, the material also explained ways of inserting back sound or any kinds of sound effect, including organizing its volume and length, applying transition effect, connecting video's parts, and inserting and organizing text. Furthermore, it showed the closing steps that were saving the video project into computer/laptop with certain format, rendering and playing the rendered version of the video. The following paragraph explained the tested and implemented of Self-Directed Learning (SDL) final model towards basic competence in analyzing video, animation and/or digital music production.

Kappa coefficient test explains the consistency measurement made by three raters or consistency between two measurement methods or two measurement tools. Based on that statistics, the value of the Kappa coefficient done by three raters to test audio video media product of basic competence in analyzing video, animation and/or digital music production in the simulation and communication digital subject was 0,673. According to Kappa coefficient criteria, when the value of Kappa coefficient was 0,673 higher than 0,6, it could be affirmed that audio video media product of basic competence in analyzing video, animation and/or digital music production in the simulation and communication digital subject of SMK Islamic Centre Baiturrahman Semarang tested by three raters was reliable.

Effectiveness test of independence aspect done with questionnaire of a limited sample group obtained scored 66% > 60% which meant to be effective, while the proficiency questionnaire got 83% > 80% and categorized into very effective. Therefore, according to the value of effectiveness test of both independence and proficiency questionnaires towards audio video media utilizing of basic competence in analyzing video, animation and/or digital music production in the simulation and communication digital subject of SMK Islamic Centre Baiturrahman Semarang was eligible to be implemented for students.

Normality test is conducted to determine a proper statistical test that was useful for answering a research hypothesis. Based on the statistics, significant value of the pre-test and post-test data was $0,248 > 0,05$ that meant the data of group class was normally distributed. This result was used as consideration for the following analysis with parametric statistics. According to the result of normality test, therefore the data analysis employed to test the hypothesis was independent sample t-test. Homogeneity test was used to discover whether samples taken from both data was a homogeneous respondent. The homogeneity was tested with One-Way Anova. It categorized into homogeneous if the significance level value $> 0,05$.

The significance level of homogeneity statistics was 0,950 higher than 0,05, hence both data were homogeneous. After the preceding tests confirmed to be homogenous and normally distributed, the following analysis used t-test. Self-Directed Learning (SDL) of basic competence in analyzing video, animation and/or digital music production was proved effective since the pre-test and post-test done with paired sample t-test showed sig. (2-tailed) $0,000 < 0,05$. There was a significant difference, for the post-test result was higher than the pre-test which was analogous to Sukestiyarno's statement (2014:199). Students' t-test was $t(h) = 5,342$ higher than t table $t(1-\alpha), (1+n2-2) = t 0,95, 28 = 1,701$. This proved that the implementation of Self-Directed Learning (SDL) improved students' result. Therefore, Self-Directed Learning (SDL) model of basic competence in analyzing video, animation and/or digital music production in simulation and communication digital subject was effective to appraise students' independence and proficiency.

The Effectiveness of Self-Directed Learning (SDL) Model

The purpose of Self-Directed Learning (SDL) model implemented in audio video learning was students' independence and skill improvement. In the beginning, students was given the material of processing video software which was Adobe Premiere. Then by practicing, students were expected to be able to follow the instructions to edit a video. The instructions included starting the program, sorting the video that would be edited, importing the chosen video into the program, playing it from the track, cutting the necessary part, inserting back sound or any kinds of sound effect as well as organizing its volume and length, applying transition effect, connecting video's parts, inserting and organizing text such as text color, size, or font, saving the video project into computer/laptop with certain format, rendering the the video and playing the rendered version with video player software.

According to the implementation of audio video learning media, some findings were discovered as follows: (1) students were able to explore their abilities such as looking for new back sound based on their interest, (2) students asked questions outside the material given, therefore aroused their curiosity such as how to create a slow motion effect on the video, (3) the students learned independently and asked the teachers or friends if they met with any curiosity, (4) students focused more on the practice of video editing with *Adobe Premiere* which would formed responsibility and discipline, (5) students keep repeating the tutorial video given by the teacher to understand more. Comparing to the previous observation in which teacher gave the assignment from the textbook only and students practiced with their own mobile phone to process audio video, it could be concluded that there was an improvement in students' independence and proficiency.

The students were classified into competence in independence aspect since they could understand instructions of the assignment and follow the tutorial video given by the teacher. Meanwhile, students

were classified into less competence due to their less understanding. Moreover, students in competence category of proficiency aspect, after some observations, had a higher score than the standard of minimum completeness of mastery learning based on the aspects included in the instrument, had skill and curiosity about audio video processing, was eager to ask questions and discussed with the teachers or their friends.

Independence assessment was formed into check-list with Likert scale containing the frequency aspects such as always, often, seldom, rare, and never. Meanwhile, proficiency assessment which was also formed into check-list, had aspects of ability including competence and incompetence. The practical learning process organized by giving a treatment with audio video media, showed that the practical result of the students was improved and changed in the aspects of independence and proficiency. The change was attested with the average score of independence and proficiency.

CONCLUSION

According to the findings and discussions, the writer can conclude that generally audio video learning media are valid to be applied using Self-Directed Learning (SDL) method to acquire the basic competence in analyzing video, animation and/or digital music production and therefore improve students' independence and proficiency towards the simulation and communication digital subject of SMK Islamic Centre Baiturrahman Semarang 2019/2020.

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REFERENCES

- Amarulloh, Azhari. *Pengaruh Penggunaan Media Audio Visual Dalam Proses Pembelajaran Terhadap Motivasi Belajar Siswa*. Diss. Universitas Pendidikan Indonesia, 2013.
- Iskandar, Akbar. "Pengembangan perangkat penilaian psikomotor di sekolah menengah kejuruan (SMK)." *Jurnal Inspiration* 3.1 (2013).
- LPMP Jawa Tengah. 2017. *Bimbingan Tekniks Implementasi Kurikulum 2013 Sekolah Menengah Kejuruan*. Direktorat Pembinaan Sekolah Menengah Kejuruan.
- Nafiah, Yunin, Nurun. 2014. Penerapan Model Problem-Based Learning Untuk Meningkatkan Keterampilan Berpikir Kritis Dan Hasil Belajar Siswa. *Jurnal Pendidikan Vokasi, Vol 4, Nomor 1, Februari 2014*
- Prastiawan, Rizky Handika, and I. Asto B. "Pengaruh penggunaan media audio visual terhadap hasil belajar siswa kelas X pada mata pelajaran teknik elektronika di SMK Negeri 2 Surabaya." *Jurnal pendidikan teknik elektro* 4.3 (2015).
- Primartadi, Aci. 2012. Pengaruh Metode Student Teams-Achievement Division (Stad) Dan Problem Based Learning Terhadap Hasil Belajar Ditinjau Dari Potensi Akademik Siswa Smk Otomotif. *Jurnal Pendidikan Vokasi, Vol 2, Nomor 2, Juni 2012*
- Rachmawati, Dewi Oktofa. "Penerapan model self-directed learning untuk meningkatkan hasil belajar dan kemandirian belajar mahasiswa." *Jurnal Pendidikan dan Pengajaran* 43.3 (2010).
- Rachmawati, Dewi, Oktofa. 2010. Penerapan Model *Self Directed Learning* Untuk Meningkatkan Hasil Belajar Dan Kemandirian Belajar Mahasiswa. Universitas Pendidikan Ganesha
- Sawitri, N. 2017. Kontribusi *Self-Directed Learning* Dan Motivasi Berprestasi Terhadap Prestasi Membaca. Program Studi Pendidikan Bahasa Inggris FKIP Unmas Denpasar. *Jurnal Santiaji Pendidikan, Volume 7, Nomor 1, Januari 2017* ISSN 2087-9016
- Sugiyono. 2013. *Metode Penelitian Pendidikan Kuantitatif, Kualitatif dan R & D*. Bandung: Alfabeta.

- Sugiyono. 2015. Statistik Nonparametris Untuk Penelitian. Bandung: Alfabeta.
- Sugiyono. 2016. *Metode Penelitian & pengembangan*. Bandung: Alfabeta.
- Sugiyono. 2016. *Metode Penelitian Pendidikan*. Bandung: Alfabeta.
- Sukmono, Nur, Dwi. 2015. Metode Pembelajaran *Self Directed Learning* Berbasis
- Sunarto. 2008. *Kemandirian belajar*. Tersedia pada <http://banjarnegarambs.wordpress.com/kemandirianbelajar-siswa/>..
- Waston,. Fx. 2015. Peningkatan Kemandirian Belajar Siswa Smk Pada Mata Diklat Teknologi Mekanik Dengan Metode *Problem Based Learnin*. *Jurnal Pendidikan Teknologi dan Kejuruan, Volume 22, Nomor 4, Oktober 2015*
- Yama, Septian, Fuji, Rediana, Setiani. 2016. Pengaruh Pelatihan Guru, Kompetensi Guru Dan Pemanfaatan Sarana Prasarana Terhadap Kesiapan Guru Prodi Bisnis Manajemen Dalam Implementasi Kurikulum 2013. *Economic Education Analysis Journal*. EEAJ 5 (1) (2016)
- Zhang, Dongsong, et al. "Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness." *Information & management* 43.1 (2006): 15-27.