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by

Submission date: 28-Aug-2022 10:51PM (UTC+0700)

Submission ID: 1888213152

File name: 1._Prosiding_Internasional_ICSE_2019.pdf (2.26M)

Word count: 3280

Character count: 19040

Scaffolding Task Analysis and Multimedia in Development Life Skill Intellectual Disability Student

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Abstract—This study aims to examine the effect of scaffolding and multimedia audio motion visual on improving learning outcomes in vocational life skill intellectual disability student in Indonesian schools. It used a pre-experimental one test-post test design design. Subjects of the study were students of exceptional junior high school intellectual disability in East Java Indonesia. It test performance. Data were analyzed using test wilcoxon. The results showed that the learning outcomes of vocational life skill students who studied with scaffolding and multimedia audio motion visual increased more than students who studied with un scaffolding and multimedia audio motion visual. This means scaffolding and multimedia audio motion visual give a better influence on the results of vocational life learning students' intellectual disability skills.

Keywords—scaffolding; multimedia; life skills; intellectual disability.

I. INTRODUCTION

In the 21st century paradigm of learning view that learning is a compilation of knowledge of concrete experiences, reflection and interpretation of the events from the object that exist in the real world, learning should be able to improve the quality of life, academic and social, cooperation, caring for others [1], [2]. Besides that, learning in the era of globalization and contemporary must also follow the development of science and technological trends, including digital, multimedia, etc. In constructing knowledge and following the development of science and technological trends, students need guidance or support (scaffolding) so that learning outcomes are more optimal, this is also needed by students with intellectual disability in learning vocational life skills. Constructing knowledge students must be guided so that learning is directed at the goals or learning outcomes are all effects that can be used as indicators of the value of using learning strategies [3]. Related to this matter, the strategy in this research to construct and apply vocational life skills is scaffolding task analysis and multimedia audio motion visual video.

Learning challenges in the era of modernization is to empower students to be able to carry out daily life activities and be able to deal with problems and stressors in real life optimally, one of the lessons that can accommodate this is life skills learning so that there is relevance between education with

real life values, in this research vocational life skills. Life skills are an essential requirement for humans to be able to live independently. Learning life skills is also important for intellectual disability students so that they are able to live independently and not be too dependent on others in their daily activities. Intellectual disability students have obstacles in productive skills activities that produce or have a price values, including vocational life skills [4]. The obstacle experienced by students with intellectual disabilities is related to skills related to livelihood that are used for survival in society [5]. Vocational life skills are needed to maintain the survival and development of themselves as a provision for living life. Life skill learning aims to develop attitudes and habits in everyday life and as a means of carrying out and adjusting it in community life [6]. Life skills help individuals to effectively deal with the difficulties, demands and challenges of everyday life in personal, emotional and social development [7]. Life skills can increase self-confidence as a provision to face life [8]. Life skills can improve behavior related to life happiness [9]. Life skills are needed to sustain economic growth and development and encourage individuals to lead autonomous lives in the 21st century [10]. Learning life skills can improve self-esteem and communication skills [11].

Vocational life skill goals are to provide skills to be able to create new entrepreneurs, produce goods and or services so as to improve the quality of life. Vocational learning life skill students are taught skills that have business opportunities, skills that are in demand by the community [12]. Vocational learning life skill can develop the ability to master and enjoy certain types of work/skills. Vocational life skill provides experience and provision of life skills in the midst of society [12]. Vocational learning life skills provide skills, related to labor market needs, business opportunities and economic or industrial potential in the community. Vocational life skill is a skill education related to the field work and the implementation of the tasks related to the work that can be equipped to live in the community.

During this time vocational life skills students with intellectual disabilities are less than optimal so that causes difficulties in vocational life skills. This is because vocational life skill learning time used is still lacking, generalized with ordinary skills lessons and less leads to each student's potential, strategies and media are less varied. The learning process is

only for achieving the curriculum objectives of the skills material and has not yet provided provisions to work in the community after graduating from school. These things are the cause of vocational life skills of students with intellectual disabilities are not optimal. In this study applied scaffolding task analysis and audio video visual multimedia to improve vocational life skills of students with intellectual disabilities.

Scaffolding help individuals or student in the early stages of learning, further reducing the effort and provide an opportunity responsibility when individuals can perform independently [13]. Scaffolding is significant to improve affects cognitive outcomes in learning [14]. Enhancer's mastery of concepts and performance and attention so as to improve learning outcomes are influenced scaffolding [15]. Scaffolding can improve learning outcomes and self-regulation in learning [16]. Scaffolding can improve learning outcomes in students who experience learning constraints [17]. Task analysis aims help students to complete the step-by-step assignments given by the teacher according to the abilities of students and easier to understand the steps of the assignments given [18]. Multimedia can improve learning outcomes because it consists of a combination of various types of media to present information [19]. Multimedia aims to communicate information in various media information in a wide range of graphics, photography, sound, video, animation and text in a product [20].

Scaffolding is a learning strategy based on social theory cultural Lev Vygotsky is related to the zone of proximal development, namely the distance between what can be achieved by individuals themselves and what they can do with help or support from other people. Multimedia has the ability of building, storing, delivering and receiving information in the form of images, text, graphics, audio and video. Audio motion visual media, namely the presentation of teaching or educational knowledge that contains elements of shelves and contains elements of sound. Video audio visual motion media (motion films) can increase students interest in learning because it is able to express and moving facts with sound effects, images and motion. The advantages of audio motion visual is that the material used can be adjusted to the level of ability of students and is very appropriate to explain a process. Multimedia empowers the educational process by increasing interaction between teachers, students, as well as innovative ways to make learning more dynamic, more durable, according to the needs of students and more applicable to the world outside the classroom so that learning outcomes are more optimal. Multimedia can develop creativity and critical thinking and student learning outcomes [21].

Several previous studies related to this present research have affirmed that scaffolding task analysis and visual audio motion has an effect on improving student learning outcomes and performance, including learning outcomes and student performance in vocational life skills. The results of this study also indicate the influence of scaffolding task analysis and multimedia audio motion visual strategies on the results of learning vocational life skills. Based on background described on paragraph above, the purpose of this study is to test and prove the effect of scaffolding task analysis and multimedia audio motion visual on vocational life skills learning outcomes.

II. METHOD

This study was a pre-experimental research one-group pretest-posttest design. The research subjects were intellectual disability students in extraordinary junior high schools in East Java Indonesia. In this study a pre-test was conducted on the research subjects before being given treatment and then post-test after treatment. The performance test instrument is in the form of giving the task of making the product according to the correct steps relating to vocational life skills. Data analysis to test the research hypothesis was using test wilcoxon (match pairs test) with a significance level of 5%.

III. RESULT AND DISCUSSION

A. Research Result

Hypothesis testing was done to test or prove the effect of scaffolding task analysis and multimedia audio motion visual on vocational life skill. To obtain the results of hypothesis testing, the research data were analyzed using wilcoxon test (match pairs test) technique. According to the wilcoxon test (match pairs test) analysis results, significance level of 0.05 indicate that $Z_h = 2.20$ (value not calculated because the absolute price is greater than the value of Z table with a significance value of 5% is 1.96. Z value obtained in the count (Z_h) is 2.20 greater than the 5% significance Z_{table} (Z_t) is 1.96 ($Z_h > Z_t$) then H_0 is rejected, the results of testing this hypothesis is that there are influence scaffolding task analysis and multimedia video audio motion visual against vocational life skills students with intellectual disabilities. The hypothesis testing showed no difference in learning outcomes vocational life skills among students who learn to use task analysis scaffolding and multimedia video audio motion visual with students studying without scaffolding task analysis and multimedia video audio motion visual.

B. Discussion

Probability value or significance level of scaffolding task analysis and multimedia 2.20 greater than the significance value of Z_{table} 5% (Z_t) which is 1.96 so that the null hypothesis or null hypothesis (H_0) is rejected. This means scaffolding task analysis and multimedia is important to be applied in the learning process because it influences the increase in learning outcomes in vocational life skills. The findings of this research show excellence scaffolding task analysis which can improve student learning outcomes. Theoretically and empirically, the findings of this research are consistent with the results of previous relevant research, including research conducted, scaffolding provide opportunities for students to internalize the knowledge, scaffolding can reduce cognitive burdens when students learn independently [22].

Scaffolding is important for acquiring skills, improve student performance in carrying out tasks [23]. Scaffolding supports students compiling learning assignments, supporting student planning and performance, providing more productive opportunities for learning [24]. Scaffolding has a positive effect on learning involvement and student learning outcomes [25].

Scaffolding provides guidance that helps students during learning sessions so as to facilitate learning for students and more meaningful learning [26]. Scaffolding during the learning phase will make a positive contribution to learning through experience [27]. Task analysis provide guidance for students to perform complex tasks into small steps that are simple and easy for students to do [28]. The benefits of task analysis is easier for students to carry out tasks because learning materials is broken down into sub-tasks and operations or action by lngkah appropriate measures students' potential. Multimedia helps students learn with various forms of media that are appropriate to students' learning styles so that learning is more effective and learning outcomes increase [29].

Multi audio media visual can increase vocational life skills. Multimedia can be used to convey information more interesting because the combination of information elements in the form of text, graphics, images, photos, animations, audio and video that are used as a means to convey certain goal. Multimedia can improve learning outcomes by utilizing computers to combine text, graphics, audio, video, animation with tools (tool) and connections (links) so that users can navigate, interact, create and communicate [30]. Multimedia makes it easy to understand material by using the words and images [31]. Multimedia is useful to provide brain stimulation, multimedia display allows interactivity between students and the media so that the brain can receive information in learning materials well, overcome the limitations of student experience, multimedia can present certain objects in different ways to students, penetrate the dimensions of space, can present multimedia learning materials with complete and unlimited [30].

Multimedia which consists of several elements such as pictures and animations equipped with sound and video and information in the form of text can provide clear meaning to students so students understand the material thoroughly [32]. The benefits of multimedia in learning, namely can be strengthen user response, students follow a sequence of clear learning and control [33]. Multimedia audio motion visual is media that relies on the sense of hearing sense of sight [34]. Multimedia audio motion visual aims to help students to make it easier to understand the material provided and to improve student learning outcomes [35]. Multimedia audio motion visuals are able to foster learning interest and motivation, clarify facts, and it is also expected that students will more easily understand and understand the material delivered by the teacher so that they get the desired learning outcomes [36]. Multimedia audio motion visuals make learning more concrete, interesting, interactive, effective and efficient so that it can achieve learning goals [37]. Learning will attract students' attention so that it can foster motivation to learn. The research findings and research results described earlier show that scaffolding task analysis and multimedia video audio are motionless have an influence on student learning outcomes, can improve student performance and learning outcomes included in vocational life skills.

IV. CONCLUSION

Based on research findings, data analysis and discussion, there is a difference in the increase in learning outcomes of

vocational life skill, learning outcomes of students intellectual disability who learn using the scaffolding task analysis and multimedia video audio motion than students who learn without scaffolding task analysis and multimedia video audio motion. The results of this study indicate that scaffolding task analysis and multimedia audio motion visual has a significant effect on vocational life skills intellectual disability students.

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