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DEVELOPMENT OF A LEARNING MODEL FOR TYPING PRACTICE AT THE JAKARTA STATE POLYTECHNIC

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Abstract

This study discusses an innovative typing practice learning model in the era of the industrial revolution 4.0 in the world of vocational education. We know that the phenomenon of the COVID-19 pandemic has made educators find appropriate learning models for each subject being taught, so there needs to be a breakthrough to make learning strategies that are more exciting, interesting and out of the box in order to increase student interest in knowledge and skills with innovative approaches and creative. In previous studies, researchers found a significant positive response from students and better results if they got a new learning model so it is important for the author to examine this problem with the following stages: preliminary study, conceptual model development, conceptual model validation, and revision conceptual model. This research was conducted using a Development Research approach. The research has bring out in a span of two years, with the stages of activity in the first year being exploration, and in the second year implementation and dissemination. In general, this research wants to contribute to the development of innovative practical learning models in other Polytechnics of Business in order to equip graduates with competencies that are relevant to the needs of world industry. In particular, this research improves the quality of practical learning in the D3 Business Administration study program with an innovative approach,

Key words: Learning, Innovation, Model Typing

INTRODUCTION

Vocational education is higher education that prepares a person to have a job through certain applied skills with a maximum equivalent to an undergraduate program. Thus, vocational education is the implementation of formal education pathways carried out in higher education, such as: diploma programs, polytechnics or the like which are directly related to the advancement of knowledge and skills needed for prospective workers in the engineering and service industries. Winangun (2017) say vocational education builds eight graduate competencies, namely: communication skills, creative and critical thinking, argumentation skills, interpersonal skills, and cultural/multilingual skills, problem solving and digital literacy [1]. According to the 2017 Global Human Capital Index by the World Economic Forum (WEF), Indonesia's Human Resources ranking is in 65th position out of 130 countries, lagging behind Malaysia (33rd), Thailand (40th), and Vietnam (64th). Even though Indonesia's labor productivity tends to increase, from 81.9 million rupiah/person in 2017 to 84.07 million rupiah/person in 2018, Indonesia's labor productivity is still lagging behind compared to Malaysia and Singapore. Besides that, Indonesia's Gross Domestic Product growth in 2017 was 4.9 percent, only 0.6 percent came from Total Factor Productivity (TFP). The remaining 2.8 percent of economic growth comes from capital capital and 1.5 percent from human capital.

Related to the information above, this means that the need for a competent, creative, innovative and adaptive workforce has not been met optimally. The low quality of the workforce that does not respond to developments in the labor market is one of the reasons why Indonesia's competitiveness and productivity are still lagging behind [2]. The current condition is that the proportion of workers in medium and high-level expertise in Indonesia is only around 40.60 percent, lower than other ASEAN countries. Furthermore, workers were still dominated by junior high school graduates and below (72.79 million people or 57.54 percent), while the Open Unemployment Rate (TPT) for middle and high school graduates reached 8.01 percent.

Reliable manpower that is not available and low industrial linkages, causes a mismatch between the provision of educational services and the needs of the labor market.

Based on this fact, it is the responsibility of the education sector, especially vocational education, to be able to produce competent graduates. Therefore, the competencies that will be developed through the learning process must be guided by the competencies needed by the industry. One of the courses at the Polytechnic that is very important and strategic for competency building is the typing practice course [3]. Therefore, it is important to always improve the quality of the typing practice learning process in the midst of the industrial revolution 4.0 and the Covid-19 pandemic. One of the efforts to instill the attitudes and behavior of students related to the competencies needed by the industrial world is to develop innovative learning models. According to Aljaberi (2015) Based on the background of the problem, several learning problems related to: a). Appropriate learning models to support practical learning at the Polytechnic; b). Learning media that are appropriate for use in practical learning at the Polytechnic; c). Appropriate learning tools to support practical learning at the Polytechnic; d). An environment that supports learning typing practice at the Polytechnic; e). Facilities and infrastructure for practicing typing at the Polytechnic; f). Typing practice learning curriculum at the Polytechnic

Given the breadth of learning problems, this research is limited to the development of practical learning models in the D3 Business Administration Study Program, Jakarta State Polytechnic. The aims of this research are as follows: 1). To produce a mapping of learning models in each typing practice course at the Jakarta State Polytechnic D3 Business Administration Study Program; 2). To produce a step for developing a learning model for practicing typing in the D3 Business Administration Study Program, Jakarta State Polytechnic; 3). To produce competencies that will be developed in practice subject matter d typing at the Jakarta State Polytechnic D3 Business Administration Study Program; 4). To produce a formulation of the material for the practice typing course at the Jakarta State Polytechnic D3 Business Administration Study Program

LITERATURE REVIEW

1. Vocational Education

Based on Ministerial Regulation No. 22 of 2006 concerning Content Standards; The purpose of vocational education is to increase the intelligence, knowledge, personality, noble character, and skills of students to live independently, and to take further education according to the vocational program so that they work efficiently and effectively, develop skills and competencies, master areas of expertise and basic - basic science and technology, has a high work ethic, communicates according to the demands of his work, and has the ability to develop himself [4]. Vocation is an attractive product or service and is a person's personal experience that causes other people to depend or need it so that they are called or invited to do a job. Vocation correlates with the capacity needed to carry out work activities. The process of developing one's vocational skills requires training and education which is called vocational education [5]. According to Suharno, vocational education is a variety of courses or skills that help students prepare to enter work. Moreover, according to Clarke and Winch, technical and vocational education is limited to preparing youth and adults for working life, a process that is often considered to be somewhat technical and practical in nature [6].

Based on the opinion of these experts, it means that vocational education is needed to prepare students to be ready for work, so the mission of educators and policy makers is to prepare a strong foundation in the teaching and learning process for students so that the application and

mastery of the academic skills and concepts needed to face the real world of work [7]. According to Wardiman Djojonegoro, in Jumadin et al, said that the characteristics of vocational education are: (a) directed at preparing students to enter the workforce, (b) based on "demand-driven" (industrial needs), (c) the focus of vocational education is emphasized on mastering the skills, knowledge, attitudes and values needed by industry, (d) assessment of student success must be on "hands-on" or performance in the world of work, (e) good relations with industry are the key to successful education vocation, (f) responsive and anticipatory towards technological advances, (g) emphasis on "learning by doing" and "hands-on experience", (h) requires up-to-date facilities for practice, (i) requires higher investment and operational costs bigger than general education [2; 8].

Based on the various opinions above, it is clear that the focus of vocational education is to equip students with a set of skills and abilities (competencies) that can be used to work in a particular field or develop themselves according to their area of expertise. Thus, the preparation of competency standards in accordance with certain areas of expertise is urgently needed as a reflection of the competencies that are expected to be possessed by every vocational education graduate [1; 4].

2. The Concept of Innovative Learning

Innovative which means new ideas or techniques, is an adjective from innovation which means renewal, also comes from the verb innovate which means make change or introduce new things (ideas or techniques) in order to make progress. Whereas in the KBBI dictionary, innovative means introducing something new; renewal (new creation). Learning, is a translation of learning which means learning, or learning [9]. So, according to Ramadhani, and Deviyanti, innovative learning is learning that is packaged by students on the encouragement of new ideas which are products of learning how to learn to carry out learning steps, so as to obtain progress in learning outcomes. Innovative learning also implies learning that is managed by lecturers or other instructors which is a form of ideas or techniques that are seen as new in order to be able to facilitate learning to gain progress in learning processes and outcomes [10].

Based on the definition of innovative learning above, it contains the meaning of renewal. The beginning of the idea of renewal comes as a result of someone feeling a crisis in the paradigm he adheres to in solving learning problems. So we need a new paradigm that is able to solve the problem. Paradigm change should be accommodated by all human beings [1; 6]. However, change is often seen as a disturbance to self-comfort, because in essence it is easier for a person to do something routine. In fact, in education, many people admit that routine work tends not to stimulate, makes education outdated, and will threaten the existence of the state in the struggle and competition in life [11]. Performance routines can be sourced from several factors that are considered to hinder innovation. Factors that can be categorized as obstacles to innovation are: the superiority of innovation is relatively difficult to explain and prove, it is often considered time and cost consuming, implementation tends to be partial, complexity innovation often haunts people who are in the way of routine, and a simplification paradigm in innovation dissemination has the potential reduce the understanding for practitioners of innovation [12].

Learning innovation arises from changes in learning paradigms. Changes in the learning paradigm begin with the results of reflection on the existence of the old paradigm which experienced an anomaly towards a new paradigm which is hypothesized to be able to solve problems [8]. In the learning process, the new paradigm of learning as a product of innovation should provide more processes to restore the nature of students to their nature as human beings who have all the potential to experience the becoming process in developing their humanity

[13]. Makes learning dimensions into five levels; (1) acquisition and integration of new knowledge, (2), positive attitudes and perceptions towards learning (3) meaningful use of knowledge, and, (4) expansion and refinement of knowledge (5) habituation of effective and productive thinking. The five dimensions of learning will be internalized by students if they are able to do what they think, feel, and do in learning, all of which come from the deepest impulses of the heart [2; 14].

On the principle of quantum teaching which states: "bring their world to our world and deliver our world to their world", teachers may need to translate it in developing learning facilities that able to disturb the hearts of students to be more responsible for their learning [15]. Responsibility competence is one of the potential attitude competencies in building other competencies, such as creative-productive thinking, decision making, problem solving, learning how to learn, collaboration, management and/or self-control. These competencies are absolutely necessary for students to be able to become adaptable, flexible, and versatile human beings in all aspects of life that are constantly changing [16].

3. Innovative Learning Model

An educator must understand the characteristics and objectives of implementing each learning model that students want to achieve. Each learning model will provide a different learning experience in line with the goals and character that students want to form. An educator will be able to choose a learning model that is in accordance with the characteristics of the material and the goals to be achieved by their students by understanding the objectives of each learning model to be applied. Following are the goals and application of Innovative learning models: The Discovery-Inquiry model is learning that focuses on the problem-solving process, so that students must explore various information in order to determine their own concepts by following the teacher's instructions in the form of questions that lead to the achievement of learning objectives [17]. The Flipped Classroom model is learning in which material is usually given in the learning process, but in this learning model the material is given before the learning process so that during the learning process, students focus on discussing material or problems that are not yet understood related to the material that has been studied by participants teach and/or do assignments [14]. The Project Based Learning Model is a learning model that provides meaningful learning experiences for students through concepts that are built based on the products produced in the project-based learning process [18]. The Blended Learning Model is learning that combines face-to-face learning with distance learning by utilizing a variety of media and technology [19]. The Self Organized Learning Environments/SOLE model is a learning approach that emphasizes self-directed learning by utilizing the internet and smart devices owned by learners.

Role-Play & Simulation is a learning method designed to achieve specific educational goals. Role play itself has 3 main aspects of role experience taken from everyday life. The three aspects are: taking a role or Role Taking, where a student takes on a certain role according to expectations in the real world, so that students are able to elaborate on the roles that are carried out as part of the Student Centered Learning (SCL) learning model [20]. The second aspect is creating roles, namely the ability of students to change dramatically from one role to another. While the third aspect is role bargaining or Role Negotiation, where the roles exist is negotiated with other role holders in terms of parameters and social interaction barriers. Simulation itself is defined as an effort to learn and carry out a role given to a student [21]. Cooperative Learning. This method is very structured because the formation of groups, the material discussed, the discussion steps and the final product that must be produced are all determined and controlled by the lecturer. In this case, students only follow the discussion procedures

designed by the lecturer. Basically Cooperative Learning like this is a combination of teacher-centered and student-centered learning [22]. Collaborative Learning is a learning method that focuses on collaboration between students based on consensus built by group members. Klemm (1994) mentions that CbL has characteristics which include (1) positive dependence, (2) interaction, (3) individual and group accountability, (4) development of interpersonal skills, (5) formation of heterogeneous groups, (6) knowledge sharing between lecturers and students, (7) sharing authority or roles between lecturers and students, and (8) lecturers as mediators [23]. Contextual Instruction. In the Contextual Instruction (CI) learning model, what students do is discuss concepts (theories) that are related to real situations and conduct field studies/diving in the real world to study the suitability of theory with reality. The form of learning activities is to explain theoretical study material and relate it to real situations in everyday life or professional, managerial, or entrepreneurial work. Besides that, the learning activities also arrange assignments for field studies

4. Competency Based Learning

Competency-based learning is learning that is oriented toward achieving student competence. According to McAshan in Mulyasa, it is said that competence: is knowledge, skills, and abilities that a person achieves, which become part of his or her being to extant he or she can satisfactorily perform particular cognitive, affective, and psychomotor behaviors [16]. Competence is defined as knowledge, skills, and abilities that are mastered by someone who has become part of himself, so that he can carry out cognitive, affective, and psychomotor behaviors as well as possible [9]. The concept of competency-based learning requires the clear formulation of the competencies possessed by students after participating in learning activities. With benchmarks for achieving competence, in learning activities students will avoid learning unnecessary material, namely material that does not support the achievement of competence mastery [13]. The achievement of each of these competencies is closely related to the learning system. Thus the minimum components of competency-based learning are: a), Selecting and formulating the right competencies; b). Make specifications for assessment indicators to determine competency achievement; c). Develop a delivery system that is functional and relevant to competency and assessment systems [24]. In accordance with the learning aspect, the Ministry of National Education, states that competency-based learning has the following five characteristics: 1) Emphasizes the achievement of student competencies both individually and classically; 2) Oriented to learning outcomes and diversity; 3) Delivery in learning using a variety of approaches and methods; 4) Learning resources are not only lecturers but also other learning resources that fulfill educative elements; 5) Assessment emphasizes the process and learning outcomes in an effort to master or achieve competence [6]. The characteristics of competency-based learning require lecturers to improvise and innovate in determining appropriate learning methods and strategies. According to Supriyadi, in a learning process that experiences many obstacles, lecturers are required to seek and find new approaches that are effective and efficient. However, at this time lecturers are considered to still lack the provision of didactic, methodical, material and creativity knowledge in learning. In conditions like this, the selection of learning models must be adjusted to the ability of the lecturer, and not burden the lecturer's work [22].Furthermore, according to the National Professional Certification Agency (BNSP), it is stated that there are 4 (four) competency dimensions that must be considered, namely: 1) Task Skill, namely the ability to carry out the main tasks of a job; 2) Task Management, namely the ability to manage various types of tasks to support a job; 3) Contingency Management Skill, namely the ability to respond and manage irregular events or problems from a job; and 4). Job/Roll Environment Management Skill, namely the ability to adjust to the responsibilities of the work environment [16; 25].

RESEARCH METHODS

This research was conducted using the "research and development" approach. what is meant by a research and development model is "a process used to develop and validate an educational product [26], by going through 10 stages of activity, namely: 1) research and evaluation collecting, 2) planning, 3) developing a preliminary form of product, 4) preliminary field testing, 5) main product revision, 6) main field testing, 7) operational product revision, 8) operational field testing, 9) final product revision, 10) dissemination and implementation [27]. The research was carried out over a span of two years, with the stages of research activities in the first year being exploration, and in the second year being implementation and dissemination.

Without reducing the validity of the processes and findings in this study, Research and Development, which was developed by Borg & Gall (2007), was adapted and made slight modifications in the stages as follows: 1) researching and gathering information about development needs; 2) planning the component prototypes to be developed including defining the types of competencies to be developed, formulating objectives, determining the sequence of activities and making measurement scales (research instruments); 3) develop an initial prototype (model) to be used as a model; 4) validating the conceptual model to experts or practitioners; 5) revise the initial model (prototype), based on the results of the validation recommendations [28].

In the preliminary study stage it begins with reviewing various literature and research results that support this research, regulations and guidelines for implementing innovative typing practice learning, identification of competencies to be achieved, and analysis of needs for model development. Then continued with a survey of alumni to find out the competencies needed in the industry and the climate or work system in the industry. The results of these two activities are study material for planning the preparation of a typing practice learning material model, by first formulating the competencies to be achieved. The collection of research data is divided into two parts. For qualitative research data was collected using documentation, observation, and in-depth interviews with various informants. Meanwhile, a questionnaire was used to collect data from alumni in the form of competence in typing practice.

The model trial was carried out on a limited basis. This limited trial aims to ensure that the learning model that has been formulated conceptually can be implemented in practice as an innovative practical learning model. This limited trial was carried out in a typing practice class at the D3 Business Administration Study Program. Model implementation is an important activity in this research. The activities to be carried out at this implementation stage are:

1. **Model implementation preparation activities. The initial model implementation activities include:**
    1. Prepare the material used in the learning model based on the results of the model trial.
    2. Prepare facilities and infrastructure for model implementation activities, which in this case are in the form of: activity sites, practice equipment, and practice materials.
    3. Prepare personnel involved in implementation activities.
2. **Model implementation activities**

    The activity of implementing the typing practice learning model. The personnel involved in this activity are researchers/lecturers, technicians, and D3 students of the PNJ Business Administration D3 Study Program who have taken practical typing courses.

Evaluation of the model is carried out from preparation, implementation to the end of the typing practice implementation activity. Model dissemination is the final stage of this research. The dissemination of this practical learning model was carried out to D3 students of the PNJ Business Administration D3 Study Program in the practice typing course.

RESULTS AND DISCUSSION

In the preliminary study stage, it begins with reviewing various literature and research results that support this research, regulations and guidelines for implementing typing practice learning based on the Competency-Based Curriculum, identifying the competencies to be achieved, and analyzing the needs for the development of learning models. The next stage of the research was to conduct a survey of active student respondents for the 2019 and 2020 batches. The reason for choosing the respondents was that they had studied 2-4 practical typing courses in the D3 Business Administration study program. This survey aims to find out their preferences for typing practice courses. The tool for extracting this information uses closed questionnaires containing personal data, standards for typing speed and accuracy, how long it takes to master typing skills, etc. Most of the respondents were women than men. Because the number of D3 business administration students is mostly women. The standard typing speed that students want is 36-40 words per minute. Only 11.5% wanted a typing speed above 50 wpm. Based on the desired standard, the respondent is 95 -97% with a percentage of 50%, while there is no one who chooses below 90%. According to the respondents' confidence they can master typing skills within 3-4 weeks (38.5%) while those above 6 months are 11.5%.

Synchronization of Typing Competence with SKKNI

The tool to dig up this information uses SKKNI search number 195/2007 in the field of office administration services. Which contains a list of competency units and is modified with several other competencies with the following details:

1. Operating the computer
2. Create and use documents and worksheets
3. Generate simple documents
4. Take notes of dictation to produce a manuscript
5. Write in English at an operational level
6. Report petty cash activities
7. Complete daily work activities
8. Make a presentation

Typing Learning Model Development

Courses that focus on typing competence are in the 2017 curriculum, there are courses on business typing 1, business typing 2, keyboarding skills 1, and keyboarding skills 2. Meanwhile, in the MBKM curriculum, there are courses: basic typing, business typing and keyboarding skills. And for this discussion, the authors focus on conducting a typing learning model using the MBKM curriculum.

a. Basic Typing

The description of the basic typing course is to explain the introduction of typewriter functions, how to place your fingers and how to sit correctly when typing, type asdf jkl; as finger pads, type middle base keys, other than asdf jkl; also the letter g h, and the sign '. Furthermore, the upper base keys are the letters r ut y q p w e o i, followed by the lower base keys, namely the

letters z x c v b n m,. / all letters are typed in lowercase. Students' fingers must always be considered and what is no less important is that the eyes are always on the book/script, then typing numbers, punctuation marks, practicing all the numbers and the end of the lesson is learning to type fast/speed.

The learning achievement of this course is that students are able and skilled in typing using 10 fingers and the correct position of the fingers and eyes. It is recommended that this course use the Blended Learning Model, Game-Based Model, and Cooperative Learning methods [29].

The blended learning learning model can be carried out in a pandemic condition, because it can be practiced offline and online. Of course, in typing practice classes it is necessary to see firsthand what students do when using 10 fingers which is difficult to do in online classes.

b. Keyboarding Skills

The description of this course is how students can achieve typing speed in Indonesian of 50 syllables per minute and in English 45 syllables per minute until midterms with a total of 8 exercises, consisting of 4 exercises in Indonesian and 4 exercises in English. And from the implementation of the UTS to the implementation of the UAS 55 syllables per minute for Indonesian and 50 for English with an accuracy of 98%, with a total of 8 practice questions also with the same conditions. (Using the typing master application)

As for the learning outcomes of the course, students are able and skilled in typing using 10 fingers until at the end of the semester they can reach a speed of 55 syllables per minute in Indonesian and 50 syllables per minute in English with an accuracy of 98%. This course uses Project Based Learning Models, Blended Learning Models, Game-Based Models, and Role-Play & Simulation

c. Business Typing

The description of this course is to learn about good and correct typing techniques with the ten typing and blind system methods and their application in typing business letters, reports and business cooperation agreements with the learning outcomes that students are able to demonstrate typing activities properly and correctly by using ten fingers and blind system at work in organizations/companies or institutions. This course uses the Discovery-Inquiry Model, the Blended Learning Model, the Game-Based Model, the Self Organized Learning Environments/SOLE Model, Cooperative Learning, and Contextual Instruction. This class is full of practice because students have gotten the basics of basic typing and keyboarding skills courses.

Learning Model Validation

The next step in the process of developing the learning model is validation. Validation on the development of this learning model involved two learning material experts and two practitioners from the industry. The validation process by experts is carried out using the instruments that have been made. This validation process is carried out with the aim of knowing the feasibility of the model that has been developed in the opinion of experts. The validation results are very good with aspects of the assessment based on the suitability of the RPS with Job Practices, the Suitability of CP with Learning Models, the Suitability of CP with Competence, Clarity of Work Instructions and Clarity of Evaluation Components

Besides providing an assessment of the feasibility of the model that has been developed, the validator also provides suggestions and input on the learning model for revision so that it can perfect the model as a whole.

Model Revision

Based on the validator's assessment, it can be said that the learning model that has been developed is feasible, but some improvements or revisions need to be made. In accordance with the suggestions and input from the validator, the parts that need to be revised include the following: 1). Needs to be completed with an Assessment Rubric; 2). Work instructions are clarified; 3). Data on typing results is better displayed in the form of a progress report so that students know how far their respective abilities are; 4). The evaluation sheet needs to add aspects of the ability to type with 10 fingers, not just speed and accuracy.

CONCLUSIONS

Based on the results of the research that has been carried out, several conclusions can be drawn as follows:

1. The steps taken in developing a learning model for typing practice in tertiary institutions are a preliminary study, competency formulation, conceptual model development, conceptual model validation, and conceptual model revision.
2. The competencies that will be developed in the practice typing course material consist of operating a computer, creating and using documents and worksheets, producing simple documents, taking notes on dictation to produce scripts, writing in English at the operational level, reporting petty cash activities, completing activities daily work, and Making presentations.
3. Learning models for practicing typing in courses are Discovery-Inquiry Models, Blended Learning Models, Game-Based Models, Self Organized Learning Environments/SOLE Models, Cooperative Learning, Contextual Instruction, and Project Based Learning Models
4. Based on the assessment from the validator and the results of the limited trial, the formulation of the material for the typing practice course that has been produced is included in the Very Good category and is suitable for use in learning.

Suggestions for future research are the need to conduct experimental research to prove the effectiveness of learning achievement in typing courses and further research can focus on learning typing online.

DECLARATION OF CONFLICTING INTEREST

This article original is a requirement for completing for “Tri Dharma" University of Brawijaya which must be published and I chose this Journal. If there are costs that I must meet, please inform me, and I am willing to comply with the rules of Journal. I have assumed responsibility for any made to the manuscript, if problems occur in any form, then I declare full responsibility for my paper.

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