

Authentic Assessment Based on Case Based Learning as a Media for Increasing Vocational School Students' Economic Literacy and Self-Efficacy in Digital Era

Heny Kusdiyanti¹, Lohana Juariyah², Ita Wilujeng³, Dinar Arsy Anggarani⁴, Alfian Bramantya⁵, Indra Febrianto⁶, Widad Lazuardi⁷

{heny.kusdiyanti.fe@um.ac.id¹, lohana@um.ac.id², ita.prihatining.fe@um.ac.id³, dinar.arsy.2303418@students.um.ac.id⁴, alfian.bramantya.2207128@students.um.ac.id⁵, indrafabrianto31@gmail.com⁶, widadlazuardi07@gmail.com⁷}

Department of Management Faculty of Economics, Universitas Negeri Malang ¹²³

Abstract. Economic literacy and self-efficacy are two important related soft skills. However, the two soft skills have low indicators for Indonesian students. The evaluation process at school only emphasizes cognitive aspects. Authentic assessment emphasizes the learning process not only on results, so that the three aspects of cognitive, affective, and psychomotor pedagogy of students are well honed and assessed. New innovations in authentic assessment that are integrated with economic literacy and self-efficacy in economics and entrepreneurship learning need to be implemented by integrating case-based learning to bring students to the process according to current problems. The purpose of this study was to produce and find out the practicality and effectiveness of case-based learning-based authentic assessments to improve the economic literacy skills and self-efficacy of vocational students. This research use ADDIE development model with qualitative and quantitative approach. The research conducted in SMK Cendika Bangsa Kepanjen. The validation results stated that authentic assessments were very valid and practical. Through the pretest-posttest it is known that there is an increase of 4.41% in self-efficacy and 15.45% in economic literacy after the use of case-based learning-based authentic assessments.

Keywords: Economic literacy, self-efficacy, entrepreneurial learning, industrial revolution 4.0..

1 Introduction

Indonesia is entering the era of the industrial revolution 4.0 which is marked by changes in digitalization that affect the economic-industrial sector [1], [2]. Digital developments in the economic sector will have a huge impact on Indonesia, such as promoting equitable distribution of population welfare, improving state finances, and changing traditional financial mindsets [3]. The shift in the economic sector in the digital industry has implications for the ability to manage information in decision making [4].

Low economic literacy influences poor lifestyle in managing finances. Economic literacy is a life skill that must be possessed to make the right economic decisions [5]. Economic literacy interprets the development of financial knowledge [6]. Economic literacy is a useful tool for changing unintelligent behavior into intelligent ones, such as using income to save, invest, protect and meet life's needs [4]. Achieving economic literacy is achieved when you are able to apply basic economic concepts many years later in relevant and different life situations. Indicators of economic literacy include the function of money, scarcity and the impact of inflation, the tendency to save, individual and national income, analyzing the impact of changes in demand and supply, decision making, economic rules and agents, and industrial development [7]. Mastery of economic literacy is more optimal when accompanied by an individual's self-efficacy.

Self-efficacy is a strong belief in competence that is based on an individual's abilities through evaluations from various sources about his abilities, so that self-efficacy has a strong impact on behavior [8]. So self-efficacy really plays a role, especially in decision making regarding future behavior, especially when facing conditions that are considered challenging [9]. It can be said that self-efficacy is an individual's ability to complete a task, this is the main factor for increasing quality behavior. Economic self-efficacy (ESE) is self-efficacy that focuses on managing financial resources and its challenges [10]. Amagir et al. [11] states that economic self-efficacy is relevant to educational behavior. Strong self-efficacy will influence life paths and career decisions. Indicators of Economic Self-Efficacy include Solve most of financial problems, manage to solve difficult financial problems, usually find several solutions for financial trouble, know to handle unexpected financial abilities, confident that she/he can deal with unexpected financial events, easy to stick and accomplishing financial goals [10]. Economic literacy and self-efficacy are correlations that are important to study to prepare oneself to face an ever-changing economy [12]

As part of the digital industry, education plays a role in improving the quality of human resources. Economic literacy skills and self-efficacy need to be improved because 1) the development of the world of education until 2045 is driven to strengthen soft skills, 2) adjusting the characteristics of the world of work in the increasingly advanced digital industry era, and 3) global or national economic problems that are always changing. These three things are the impetus to achieve the dream of Indonesia Gold 2045 [13]. The preparation of quality human resources is carried out by the government through education with an emphasis and strengthening of soft skills that support careers in this era [14].

Economic literacy and self-efficacy are part of the 21st century soft skills that are interrelated. Economics and entrepreneurship education is provided in schools so students can learn to make economic-based decisions and use them properly and rationally [15]. Entrepreneurship education is currently integrated into other subjects. But in fact the level of economic literacy of students is still relatively low and far from expectations [16]. Education in schools is the most feasible approach to economic literacy [17]. Generally, economics lessons given at school are still oriented towards memorization which is a cognitive aspect (C1), meaning that material is only memorized and retested in evaluations like what happened at Cendekia Bangsa Vocational School. This is contrary to the 2013 Curriculum which is constructive, applicable, and has character. Authentic assessment or authentic assessment has very strong relevance to the learning demands of the 2013 Curriculum to the Merdeka Learning curriculum [18]. Authentic assessment emphasizes the processes that occur during learning,

not only on results. Authentic assessment does not only assess from a cognitive perspective but also from a skill or psychomotor and attitudinal or affective perspective. This can be presented through the presentation of micro and macro economic cases [19].

There are many assessment methods, but why is it necessary to use an authentic assessment? Authentic assessment emphasizes students' ability to use knowledge in solving real-world problems. Sukraningsih [20] said that authentic assessment has the characteristics of 1) direct measure, 2) capture constructive nature of learning, 3) integrate teaching and assessment, and 4) provide multiple paths to demonstration. There are several types of authentic assessments to support these characteristics including self-assessment, product assessment, project assessment, performance assessment, and portfolio assessment [21].

The development of problems in the digital industry era will change, especially in the economic aspect. Therefore, it is necessary to present cases for students to solve through integration in the concept of authentic assessment. This authentic assessment can be integrated with a case-based learning model. Case-based learning is a learning model with a constructivist approach. In CBL students will be given a scenario of one or several cases. The advantages of CBL in its implementation include 1) providing relevance to students, 2) allowing teachers to provide more input in learning, so that students still get knowledge transfer from the teacher and do not feel "floating" towards the concepts and analysis they learn, and 3) induces learning at a deeper level [22]. Through this CBL-based authentic assessment, it is hoped that it will be able to increase economic literacy and self-efficacy by integrating these indicators in authentic assessments and economic learning.

This study aims to produce authentic assessments that are integrated with case-based learning to be a trigger in increasing economic literacy and self-efficacy in vocational students through valid and practical economics and entrepreneurship learning.

2 Methods

The design of this research is development research (Research and Development). The R&D research model uses the ADDIE development model. The method used is mix methods or a quantitative-qualitative approach. The ADDIE model stages include analyze, design, develop, implementation, and evaluation.

The analyze stage includes analysis of the target group, namely vocational school students, regarding initial economic literacy abilities, self-efficacy, learning models, and evaluation methods in learning used by teachers. The design stage includes conceptual design of an authentic assessment rubric based on case-based learning. The development stage includes a validity testing stage by assessment experts and learning experts, and continues with planning trials on a limited scale. The implementation stage is the field trial stage, the authentic assessment instruments, projects and student portfolios applied in the learning process which have been designed in accordance with the development stage will be tested for practicality and effectiveness on students and teachers, the implementation stage includes individual trials (one to one trial), small group trial, and field trial, and evaluation includes the evaluation process at each and final stage to determine the practical and effective achievements of

appropriate authentic assessments. with practical and effective criteria so that it is ready for dissemination.

The data sources in this research are quantitative data obtained from validation questionnaire scores, student response questionnaires, and economic literacy and self-efficacy tests. The validation test involves assessment experts and learning experts as validators of the authentic assessment instruments being developed. The practicality test involves creative product and entrepreneurship subject teachers as practicality experts. The trial to assess the effectiveness of the authentic assessment involved 34 class XI students at SMK Cendikia Bangsa. Meanwhile, qualitative data was obtained from suggestions and comments by validators and students.

3 Result and Discussion

3.1 Result

The results of this study are in the form of an authentic assessment rubric instrument based on case-based learning in the PKK (Creative Products and Entrepreneurship) subject. The components developed include lesson plans and assessment rubrics which are validated by expert validators. Attitude instruments include observation and self-assessment. Skills instruments include product assessment, project assessment, performance assessment, portfolio assessment. While the knowledge instrument is in the form of an economic literacy questionnaire and self-efficacy. These three assessment aspects are integrated with indicators of economic literacy and self-efficacy. The results of developing an authentic assessment based on Case Based Learning can be seen in Figure 1.

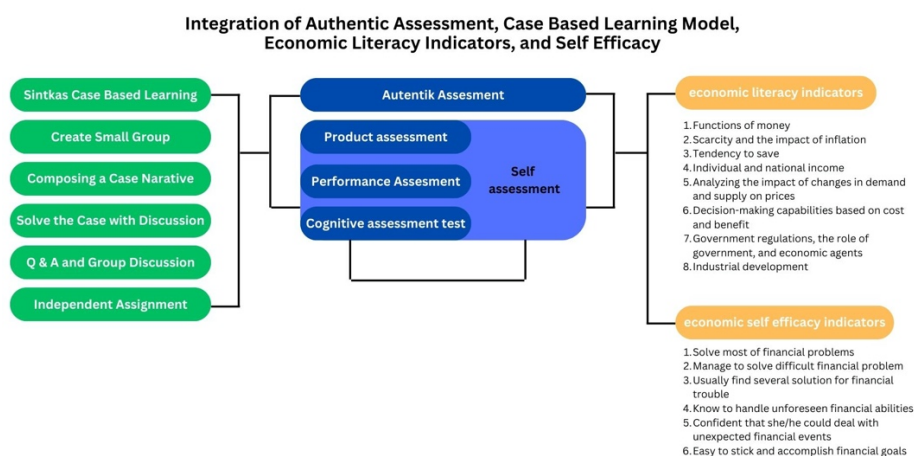


Fig. 1. Authentic Assessment Integration

There are 4 aspects of authentic assessment by learning device experts. The validation results can be seen in Table 1.

Table 1. Summary of Learning Device Expert Validation Results

Assessment Aspect	Average Value (%)	Category
RPP	97,5	Very valid
Cognitive assessment instrument	95	Very valid
Psycomotoric assessment instrument	100	Very valid
Affective assessment instrument	100	Very valid
Validity score average	98,13	Very valid

The results of the validation of learning devices get an average validation of 98.13 with a very valid category. The validator's assessment of each component that was developed has exceeded the minimum value of validity. In addition to assessing learning tools, the validator also provides comments and suggestions for improvements to the components of the device being developed. After going through the validation test, the product was revised and then validated by Entrepreneurship practitioners and students. Practicality tests are carried out to prepare for the use of the media before it is used by students. The results of the practicality test by entrepreneurship education practitioners can be seen in Table 2.

Table 2. Summary of Validation of Entrepreneurial Practitioners

Assessment Aspetct	Average Value (%)	Category
Suitability with KD and IK	100	Very practical
Material presentation	95,83	Very practical
Instrument appearance	90	Very practical
Language	100	Very practical
Presentation support	100	Very practical
Syntax execution	100	Very practical
Average value of practicality	97,64	Very practical

Based on Table 2, there are 6 aspects of the assessment including the suitability of the material, with KD and IK, material presentation techniques, instrument appearance, language, presentation support, and syntax implementation. The practicality results obtained a percentage of 97.64% in the very practical category. The comments obtained are that the development of authentic assessment media is up to date because it adapts to the times and is interesting to apply to students because it combines indicators of economic literacy and self-efficacy with the concept of entrepreneurship, besides that it is also supported by innovative e-modules. The revision based on written suggestions from entrepreneurship practitioners is the addition of technology indicators in learning.

The results of the T test can be seen in Table 3.

Table 3. Results of the Independent-Samples T Test Field Trial

T test between Pretest and Posttest	Correlation Value	Sig. Value (Correlation)	Difference in Means (Pretest-Posttest)	Sig. Value (2-tailed) T Test
<i>Self-efficacy</i>	0,210	0,233	-0,95324	0,000
Economic literacy	-0,393	0,021	-0,61176	0,000

Based on Table 3, it shows a significance value between the pretest and posttest of economic literacy of 0.000 (Sig <0.05) meaning that Ho is rejected, so there is a significant difference between pretest and posttest self-efficacy. The average difference between the posttest and

pretest is 0.95324 which indicates that there is an increase between before and after being given learning using authentic assessment tools. The mean increase with an average difference of 0.95324 can be concluded that the increase is significant and can be trusted. The correlation value of pretest and posttest self-efficacy when squared can be seen the effect of learning tools on increasing self-efficacy. The correlation value of 0.210, the square of the effect is 4.41%.

This sizable contribution of learning tools is supported by various assessments in authentic assessment.

Table 4. Gain Score Test Results in Field Trials

Pretest Score	Posttest Score	Maximal Score	Gain Score	Maximal Gain Score
9,09	18,15	38	0,31	1

In addition to the analysis with the T test, the analysis with the gain score in Table 4 also shows that there is an increase in the gain score of 0.31 which is included in the moderate improvement category.

3.2 Discussion

The validity test was carried out by learning device experts. The validity test aims to measure the quality of authentic assessment products before being tested on students [23]. The validated material is included in an e-module of the PKK (Creative Products and Entrepreneurship) subject. The results of material validation with maximum results are needed to measure the validity of the material being developed so that it does not cause problems for students when studying the material. Comments from learning device experts are that this authentic assessment is a new innovation in the classroom, it is hoped that this assessment can increase students' economic literacy and self-efficacy which is indeed urgent in this digital era. While the advice given includes providing time information on lesson plans, providing a rating scale on knowledge assessment, and reviewing knowledge assessments so that they are in line with economic literacy indicators. it can be concluded that the authentic assessment developed is valid in the very good category and can be continued for trials.

Furthermore, the media in authentic dissertation assessments, pictures and case studies are more interesting in learning. This CBL-based authentic assessment is accompanied by supporting illustrations that are appropriate to the material and a storyline in the form of problems and explanations of the material, so that students can easily understand the material when reading or observing the material. Illustrations are useful for clarifying the contents of writing as a support for descriptions that provide a concrete and clear picture [24]. Visual learning media on Creative Products and Entrepreneurship (PKK) material can increase motivation, facilitate learning, and are feasible to apply in learning [25].

Visualization related to Creative Products and Entrepreneurship (PKK) must be correct and clear. This is due to the purpose of authentic assessment to visualize case matters and solutions to become clear through images and presentation of material. This case-based learning-based authentic assessment of Creative Products and Entrepreneurship (PKK) materials guides students to be independent and active by interacting directly, such as

observing pictures, reading material, writing, and creating. Students get a meaningful learning experience when students can interact directly with several media such as images, sounds, and videos [26]. The revision was based on input and improved validation of material experts, namely adding videos to learning so that students could learn about entrepreneurial development as an addition for students with different learning characteristics. Students have different characteristics in understanding the material.

Educational facilities such as complete media and learning resources, curriculum, and teachers who create an interesting learning atmosphere can improve student learning outcomes [1]. Field trials on students were carried out in accordance with the trial design of Branch. This field trial aims to determine the effectiveness of the authentic assessment developed. The effectiveness of an authentic assessment can be known through the results of the preliminary analysis, namely the analysis of economic literacy skills and self-efficacy through the pretest.

The correlation value of pretest and posttest of economic literacy when squared can be seen the effect of learning tools on an increase in economic literacy. If you look closely at the correlation value of 0.393, the square of the effect is 15.45%. The contribution of this small learning device is because in learning activities students do not work on project assignments and many students tend to be less serious in participating in learning activities. In addition, the test questions as economic literacy practice questions were not done by students. These things cause the posttest scores and increase in economic literacy to be less than optimal. There were 16 students who experienced an increase in the low category gain and 18 students experienced an increase in the medium category. The authentic assessment developed can be forwarded to the implementation stage on a large scale. This is in line with the results of research from McLean [22] which states that Case Based Learning uses a student-centered learning approach, so that students as problem solvers have an active role, direct activities, and build learning.

4 Conclusion

Based on the results of the research, it can be stated that the development of the resulting assessment media is valid, practical, and can increase economic literacy and self-efficacy which is the first step in fostering an entrepreneurial spirit in students. This assessment media also succeeded in increasing the level of involvement of both teachers and students during the learning process, providing relevant learning experiences for students. The existence of learning media that encourages the entrepreneurial spirit of students will form a generation of innovative and creative young entrepreneurs. The assessment media that has been developed is integrated with the case-based learning model in accordance with the demands of the Industrial Revolution 4.0 era, which requires students to have 4C competencies as well as several other competencies in accordance with industrial 4.0 developments. Based on the results and discussions in this study, there is a need to carry out further research to optimize the results that have been obtained. This follow-up research should be focused on digitizing the assessment media that has been developed, but still retaining the elements of economic literacy in it.

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