Effectiveness of Website Role Play Game - Business Simulator (SIMBIZ-RPG) as a Life-Based Learning Media in Entrepreneurship Courses

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Abstract. One of the causes of the small number of entrepreneurs in Indonesia is entrepreneurship education which is still theoretically oriented and has not been able to provide entrepreneurial experience to its students. In entrepreneurial learning, the effectiveness of learning will be achieved by teaching staff if applying a learning model that brings students directly involved with learning experiences such as demonstrations and practice doing (life-oriented). SIMBIZ - RPG as a life-based learning medium in entrepreneurship courses. The approach used in this research is quantitative which examines the use of the website role play game - business simulator (SIMBIZ-RPG) on the motivation and understanding of students. This study involved 100 students taking entrepreneurship courses at the State University of Malang. The results of this study indicate that students have more motivation in participating in entrepreneurship learning and are able to improve understanding and learning experiences while using the SIMBIZ – RPG website. Through the results of this study, it is hoped that it will be able to provide an alternative life-based entrepreneurship learning media that is oriented towards improving students' abilities and learning experiences.

Keywords: SIMBIZ-RPG · Motivation · Achievement · Entrepreneurship

1 Introduction

The development of the demands of the world of work today encourages universities to adjust and improve the abilities of their graduates. The inability of universities to adapt to the needs of the world of work for their graduate students will further increase the unemployment rate in Indonesia. Based on data from the Central Statistics Agency, the Open Unemployment Rate (TPT) in February 2021 was 6.26 percent, down 0.81 percentage point compared to August 2020. Under these conditions, universities as one of the institutions that improve the quality of society are expected to be able to produce graduates who are competent.

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In order to produce graduates who have the character of an entrepreneur, the learning process should not only be to master an understanding of business theories. This is because it can lead students to be trapped in understanding business in theory but not mastering business practice and experience. Therefore, in order to improve student understanding and experience in entrepreneurship courses, learning media are needed that are closer to business facts in the field and business cases in classroom learning [1].

Rohani says that learning and learning activities are a communication process that requires a media to make it easier to convey information [2]. Sadiman says that the media is an intermediary or messenger from the sender to the recipient [3]. Wiseli et al., and Chang et al., stated that learning by using media can increase students' motivation and ability [4, 5]. One of the goals of learning media is to enhance students' learning absorption of learning materials [6]. Manuaba argued the advantage of media in learning is that it can explain difficult concepts more easily so that they are able to provide a deeper understanding of the learning material being discussed [7]. The advantages of learning media include explaining abstract learning materials into concrete, presenting learning materials more easily and quickly [8]. This is supported by Wang, learning media must be able to provide more benefits than without using learning media [9].

There are various learning media, including visual, auditory, and direct physical activities [10]. One of the media that is effective and in demand by students in business courses is a game-based learning media. This is corroborated by research conducted by Pratikto, et al. by creating a SIMBIZ business simulator application for introductory business learning [11]. This game format is very suitable when applied to learning game applications [12]. Cross et al. and Abbas et al. in their research stated that game applications can be effective learning media in the learning process because with game media, students will be actively involved in learning activities [13, 14]. Kirkwood and Price learning by utilizing learning media in the form of games will make students active so that they will hone their analytical and decision-making skills independently [15].

Cross et al. states that the use of game application media can be an effective learning media because students will be actively involved in learning activities [13]. This is also reinforced by research. In line with the statement Abbas et al., which states that students who are active in the learning process will have a sense of involvement in the classroom [14]. It is hoped that through learning media in the form of business simulation application games, it is able to increase student motivation in learning so that it will hone analytical and decision-making skills independently.

Based on the problems and challenges to the quality of college graduates, especially to produce graduates with an entrepreneurial spirit, a game-based business learning media is needed to increase motivation and provide student experiences in learning. Therefore, this study wants to examine the effectiveness of game-based business learning media (SIMBIZ-RPG) in improving students' abilities and business learning experiences.

2 Research Method

2.1 Research Design

The research stages of testing the effectiveness of the SIMBIZ - Role Playing Game (SIMBIZ-RPG) applications are done in several stages. First stage, recruiting the respondent that suitable with the selected category which represent the population as a whole. Second stage, pre-test the participant, so we able to measure the before or standard of the current performance of participant. Third stage, respondent using the SIMBIZ-RPG to learning entrepreneurship in class. Then, in fourth stage, respondent done the post-test to test the performance after using the SIMBIZ-RPG application. Lastly, in fifth stage, data that have been collected need to be tested and done hypothetical analysis.

2.2 Sample and Data Collection

The sort of data used in this study is qualitative descriptive data. Qualitative data is derived from the replies of a selected participant that are appropriate for the chosen category, which represents the entire population. This study takes place in East Java and involves students from several universities. Large - scale trials involving a limited group of students and instructors will be able to represent and generate data for this study. This study used a total sample of 100 people from several state institutions in East Java. Questionnaires and documentation were utilized to gather data in this study.

3 Result and Discussion

3.1 Instrument Analysis

Instrument testing includes test validity and reliability questionnaires, which were utilized to gather data from respondents in this study.

3.1.1 Validity Test

The goal of instrument validity testing is to see how accurate items in an instrument are in reflecting the state of the study topic. The structures in this study were validated using product moment equations. In certifying instruments, there are a number of requirements that must be met. When Corrected Item-Total Correlation values are greater than r-table and positive, it is legitimate, and vice versa. After that, the validity test result is compared to the product moment. When the answer of the equation is greater than the r-table, it is legitimate.

The validity test reveals the extent to which the measuring instrument to measure what is being measured is legitimate or not by comparing the Pearson Product Moment correlation index with its critical value with a significance threshold of 5%. It is known that all questions in the surveys have a significant value (sig) of less than 0.05, suggesting that all question items in the questionnaire are legitimate, based on the findings of the questionnaire's validity test.

Table 1. Data Normality Test Result

		Pre-test	Post-test
N		100	100
Normal Parameters[a]	Mean	13.0921	40.0372
	Std. Deviation	1.132111	1.802481
Most Extreme Differences	Absolute	.169	.151
	Positive	.169	.151
	Negative	-.128	-.093
Kolmogorov-Smirnov Z		1.110	.991
Asymp. Sig. (2-tailed)		.170	.280

3.1.2 Reliability Test

The researchers used a reliability test to assess the stability of the instrument measurement results in this investigation. The Cronbach Alpha Equation is used to assess instrument reliability. By computing the reliability number for each question, alpha equations are used to assess reliability. The writers must then compare the alpha value to the table's alpha value.

The alpha reliability test of Cronbach's alpha was used. The results of the reliability test show that the variables in the questionnaire have a Cronbach Alpha coefficient higher impact than 0.6, indicating that the question instrument used in question of the surveys is trustworthy.

3.2 Data Normality Analysis

By comparing the probability value (p-value) obtained with the predefined significance level of 0.05, the Kolmogorov-smirnov Test was used to determine normality. The data is regularly distributed if the probability value (p-value) of each independent variable is more than 0.05, but not if the probability value (p-value) of each independent variable is less than 0.05. (Thorn, 1995). The results of the normality test are shown in Table 1.

The Table 1 indicates that each variable's probability value (p-value) is larger than 0.05, indicating that the data in this research is normally distributed.

3.3 Hypothesis Analysis

SIMBIZ-RPG applications that have been approved by respondents for testing in their application as a learning media and then tested limited to determine the effectiveness of business simulation applications in improving analytical and business skills in life-based learning at entrepreneurship courses. If the calculated T-calculated value at T test $>$ T-table value at 5% error level (=0.05), or probability value $=$ 0.05, the approval requirements of H1 on T-Test are met. Table 2 shows the test results of students' initial abilities at the time of the pre-test.

Table 2. Student Pre-Test Score T-Test Result

Class	Avg. Pre-Test Score	T-Calculated	Probability	Meaning
Control	71,84	-0,413	0,681	H0 Accepted
Experiment	72,56			

Table 3. Student Post-Test Score T-Test Result

Class	Avg. Post-Test Score	T-Calculated	Probability	Meaning
Control	78,32	-2,926	0,005	H0 Rejected
Experiment	82,96			

According to Table 2, the average pre-test grade of participants in the control class is 71.84, whereas the average pre-test grade of the experimental class is 72.56. T-calculated is -0.413, whereas t-table is 2.06 with 24 degrees of freedom (n-1) and a 5% error rate. SIMBIZ-RPG may be used as a business simulation stage since the t-count value is -0.413 and the classes have the same beginning capability.

Following the use of SIMBIZ-RPG apps on learning in the experimental class, a post-test is conducted. The results of the post-tests will be compared in order to determine the efficacy of learning via the use of a business simulation program in order to increase student competence in life-based learning in entrepreneurship classes. The following is the hypothesis utilized in the t-test of post-test score:

H0: There are no differences between control and experiment class students in analytical and business decision making.

H1: There are differences between control and experiment class students in analytical and business decision making.

The result of T-test on student post-test score is shown in Table 3.

The participants in the control class have a mean post-test grade of 78.32, whereas the experimental class has a mean post-test grade of 82.96, as seen in Table 3. T-calculated is -2.926, whereas t-table on degrees of freedom 24 (n-1) with a 5% error rate is 2.06. Value t-calculated equivalent to 2,926 > t-table value, likewise, by looking at probability value less than 0.05, it is said that H0 in this study is rejected, which implies that there is a difference in student skill in business analysis and decision making between the control class and the experiment.

3.4 Discussion

Based on the results of the T-test on the post-test data, it can be seen that the control class and the experimental class have the initial capability of different business analysis and decision making after using the SIMBIZ-RPG application to learn, and that the experimental class's post-test score is higher than the control class's means that students

who get teaching. Thus, in life-based learning at entrepreneurship courses, business simulation programs are useful in developing students' analytical and business decision-making abilities.

In the learning process, learning media must offer more benefits than learning that is carried out without using media. Based on the results of the analysis above, it is known that game-based learning materials in entrepreneurship courses can provide effective benefits by equipping students with learning experiences and analytical skills. This can be achieved because the game will give students a feeling of pleasure so that the learning process becomes fun.

With a fun learning process will increase the efficiency of the teaching and learning process. Aside from being a fun learning medium, game-based learning media also provides an interesting experience for students. It will be easier for students to understand immersive experiences. With immersive experiences, students can experience the learning process firsthand and understand the theory being studied more easily. By experimenting directly through the material that has been prepared in the teaching materials, it will be easier for students to understand the material provided.

4 Conclusion

The purpose of this study is to see how effective SIMBIZ-RPG is as a business simulator media application, as well as to check its authenticity and efficacy. Based on the findings, it can be stated that SIMBIZ-RPG, as a business simulation program, is successful in enhancing student analysis and business decision making in life-based learning at entrepreneurship courses, based on the results of the difference test. As a result, the SIMBIZ-RPG web-based program may be utilized by a larger group of institutions or entrepreneurs.

Based on the results and discussion above, the recommendation from this research is to increase students' analytical skills, especially in business and management courses, it will be better if using game-based learning media. SIMBIZ-RPG is considered good as a learning media in order to improve student learning experience, so that it can be an alternative media for business learning in the classroom.

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