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PENERAPAN MODEL QUANTUM TEACHING BERBASIS ECO-EDUTAINMENT TERHADAP HASIL BELAJAR MAHASISWA PROGRAM STUDI PENDIDIKAN NONFORMAL

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Abstrak: Berdasarkan hasil monitoring dan evaluasi perkuliahan Program Studi Pendidikan Nonformal diperoleh data bahwa mahasiswa mengalami kesulitan belajar yang berdampak pada hasil belajar yang tidak maksimal pada mata kuliah karya kreatif mahasiswa yang notabanenya merupakan salah satu mata kulaih praktik inti program studi. Tujuan dari penelitian ini adalah untuk melakukan perbaikan pembelajaran pada mata kuliah karya kreatif mahasiswa dengan menggunakan model quantum teaching berbasis eco-edutainment sehingga dapat meningkatkan hasil belajar mahasiswa. Penelitian ini dilakukan pada mahasiswa semester 3 tahun ajaran 2022/2023 menggunakan metode kuantitatif dengan desain quasi eksperimental, pretest-posttest with Non-equivalent Control Grup Design. Populasi penelitian ini adalah mahasiswa kelas eksperimen sebanyak 30 orang (semester 3A) dan kelas kontrol sebanyak 30 orang (semester 3 B). Penelitian dilakukan di laboraturiuam Program Studi Pendidikan Nonfomal dan Gedung Kuliah Bersama 3 FKIP Universitas Bengkulu. Hasil penelitian menunjukkan bahwa penerapan model quantum teaching berbasis eco-edutainment dapat meningkatkan hasil belajar siswa sebesar 79,83% atau kelas eksperimen mengalami peningkatan yang efektif, sedangkan pada kelas kontrol hanya sebesar 58,51% atau mengalami peningkatan yang cukup. Jadi dapat disimpulkan bahwa penerapan model quantum teaching berbasis eco-edutainment dapat meningkatkan hasil belajar mahasiswa.

Kata-kata Kunci: Quantum teaching, Eco-edutainment, Hasil belajar.

The Application of Eco-Edutainment-Based Quantum Teaching Model to the Learning Outcome of Non-formal Education Study Programme Students

Abstract: *Based on the results of monitoring and evaluation of lectures in the Nonformal Education Study Programme, it is found that students experience learning difficulties which have an impact on learning outcomes that are not optimal in the student's creative work course, which is one of the core practical courses of the study programme. This research aims to improve learning in student creative work courses by using the eco-edutainment-based quantum teaching model to improve student learning outcomes. This research was conducted on 3rd-semester students in the 2022/2023 academic year using quantitative methods with a quasi-experimental design, pretest-posttest with Non-equivalent Control Group Design. The population of this study were 30 experimental class students (semester 3A) and 30 control class students (semester 3B). The research was conducted in the Nonformal Education Study Programme and Joint Lecture Building 3 FKIP Bengkulu University laboratory. The results showed that applying the eco-edutainment-based quantum teaching model could improve student learning outcomes by 79.83%, or the experimental class experienced an effective increase, while the control class was only 58.51% or experienced a sufficient increase. So, applying quantum teaching models based on eco-edutainment can improve student learning outcomes.*

Keywords: *Quantum teaching, Eco-edutainment, Learning outcome.*

INTRODUCTION

Merdeka Belajar-Kampus Merdeka is a form of independent learning in universities in Indonesia. One of the main points of the MBKM policy is that students have the right to take courses outside the Study Programme and change the definition of semester credit units. Universities are obliged to provide students with the right to voluntarily (whether they take it or not) take credits outside the university for 2 semesters (equivalent to 40 credits), plus they can take credits in different study programmes in the same university for 1 semester (equivalent to 20 credits). The meaning of credits has also changed; credits are defined as hours of activities, which are learning in class, work practices (internships), student exchanges, village projects, entrepreneurship, research, independent studies, and teaching activities in remote areas, all of which are guided by a lecturer. These activities can be taken by students (in the three semesters above) and can be selected from programmes determined by the government or programmes approved by the rector (Kemendikbud, 2020).

In the implementation in the field, the true intention of Merdeka Belajar Kampus Mereka is to give students the freedom to gain knowledge and experience according to their interests, talents and majors or core study programmes that have been chosen as a provision to prepare themselves when completing their studies in college. When referring to this intention, it means that in teaching and learning activities, educators must understand the potential in students and be able to direct it properly in each course taken by students or in campus and off-campus activities carried out by students. This requires educators in every teaching and learning activity to use the right models, methods, and media and not make students compartmentalise in exploring the potential that exists in students, especially if the course is a development course or practice course.

Based on the results of monitoring the Nonformal Education Study Programme lectures, which are carried out regularly every semester, the results show that the 6th semester of the Student Creative Work course (PNF-3241) in the 2020-2021 academic year is a practical course that has experienced difficulties in implementation due to the co-19 pandemic which has an impact on motivation and learning outcomes that are less than optimal because they have limited practical mobility. The satisfaction index is at 3.5 points (sufficient category), with an average practice result of 7.15 (SIEPEL UNIB data, 2021). Even though this is the core course for practising the Nonformal Education Study Programme, which should be the core mastery of students, this was also revealed directly by the lecturer teaching the course that in teaching and learning activities, there were difficulties due to the lack of maximum practical lectures implemented online via zoom meetings, which resulted in students only being able to do makeshift practices utilising the surrounding environment in making creative works. In addition, students' analytical abilities in understanding social conditions and social problems and seeing the potential of the environment have not been maximised due to limited social interaction during the COVID-19 pandemic; even after PPKM was revoked, conditions in the community have not fully allowed students to interact a lot with the community. This is exacerbated by the existence of other online learning obstacles experienced by students, such as network disruptions, limited quotas, lectures accompanied by other activities or lack of focus on lectures, making it more difficult to properly implement these practical courses.

In the Independent Learning Campus Merdeka curriculum of the FKIP Nonformal Education Study Program, Bengkulu University, the Student Creative Work course, originally in semester VI, changed to semester III. Placement in semester III allows students to develop course outputs for activities related to academic and non-academic activities, for example, participating in the Student Creativity Programme (PKM), performing arts and so on. If it is in semester VI, then the potential to develop course outputs is not optimal because students in the next semester are already busy with internships and writing research proposals.

Since the beginning of the new academic year 2022-2023, the conditions for lectures have begun to be applied offline according to the needs and characteristics of the course. Especially for practical courses, it is preferred to be carried out offline with the consideration of utilising existing campus facilities as materials and learning resources for students. As for theoretical courses, it can be done with blended learning.

As a lecturer, restoring the passion for learning of students who have been studying online for 2 years when the COVID-19 pandemic hit is certainly not easy. Especially during online learning, students experience boredom in learning (Pawicara, 2020), decreased learning motivation (Febrianti, 2021), decreased learning motivation (Latifa, Lufri, Zulyusri, 2021), which certainly requires adaptation again when they have to study offline on campus. It is necessary to have a learning design that can help students quickly adapt to the learning climate on campus and at home. Learning design cannot be separated from learning strategies, learning methods, learning models, and learning media.

The quantum teaching model can make the learning atmosphere fun, increase student interest in learning (Siahaan, Sinabutar, & Holoho, 2020), and increase student learning motivation (Nurrokhim, 2018). The quantum teaching model makes learning activities more lively and improves a more interactive and pleasant learning atmosphere by utilising learning moments so that it focuses on dynamic relationships in the classroom environment, interactions that establish a foundation and framework in learning activities (Siahaan & Sianturi, 2021; Wahyuni, 2017). In addition, the quantum teaching model can also improve student learning outcomes (Damayanti et al., 2022; Fatimah, Noviana & Guslina, 2022).

Quantum teaching can improve learning outcomes in practical or practicum lessons (Faj, Fikhri, & Yusandika, 2018; Suwanti, 2014; Ginting, 2018). By combining the concepts of Ecology, Education and Entertainment (Eco-Edutainment), which combines an entertaining and fun educational process so that it becomes a harmonious combination that creates enjoyable learning by paying attention to, utilising and having a reciprocal relationship that is in harmony with the surrounding environment, including the family environment, schools, communities in the global scope and sensitivity and awareness of the environment (Larsson, 2012). The concept of edutainment emphasises fun learning in sustainable communication so that communication in learning can be entertaining without eliminating the learning objectives themselves (Saleh, 2022).

The concept of Eco-Edutainment is to strengthen and make the learning model more specific. The concept of eco-edutainment is in line with the MBKM policy. Students are directed to learning that provides real experience for their lives and makes students able to develop interests and talents according to their wants and needs, which, of course, is fun and makes them more enthusiastic about learning and able to develop independence in seeking and finding knowledge obtained from reality and dynamics in the field, such as social interaction, collaboration and self-management so that it will form strong student hard skills and soft skills (Kemdikbud, 2020).

RESEARCH METHODS

The classroom action research method used is a type of quasi-experimental design. Sugiyono (2016: 114) states that quasi-experimental design is a development of true experimental design, which is challenging to implement. The choice of quasi-experimental design is because this study has a control group. However, it cannot function fully to control external variables that affect the implementation of the experiment. This research was conducted in the odd semester of the 2022/2023 academic year by involving 60 Nonformal Education Study Programme students consisting of 30 3A semester students and 30 3B semester students. The research was generally conducted in the lecture room of the Nonformal Education Study Programme, Joint Lecture Building IV, Faculty of Teacher Training and Education, Bengkulu University.

The research design used a Pretest-Posttest with a Non-Equivalent Control Group Design because there was an experimental and control group. 3A semester students are the experimental group, and 3B semester students are the control group. The experimental group is a class that will be given treatment. In contrast, the control group is a class not given treatment or only given direct learning using a conventional approach (Creswell, 2017). In this study, the control class was only taught using the lecture method using PowerPoint media, as usually done by the lecturer teaching the course using non-equivalent. The two classes are not equal groups in all respects or aspects but are only equal in some aspects (Isnawan, 2020).

The research instruments were analyzed by conducting validity and reliability tests. The validity test is carried out to measure what should be measured by a measuring instrument's accuracy in performing its measuring function. The instrument tested was in the form of a test so that content validity was carried out based on the subject matter taught (Sugiyono, 2015:176).

Furthermore, testing was carried out on experts, namely two lecturers with competence in the community development field as the head of the community empowerment science clump and one lecturer in educational technology. The reliability test is carried out to determine whether the research instrument used can be trusted as a data collection tool and can reveal actual information in the field (Sitinjak & Sugiarto, 2006) after conducting validity and reliability tests with ten essay-shaped questions, eight valid and reliable questions were obtained.

This study was also conducted with tests and documentation. Data were analyzed by descriptive analysis, homogeneity test, normality test, and hypothesis testing.

Table 1
Research Design

Samples	PreTest	Treatment	Post Test
3A Semester	O1	X	O3
3B Semester	O2		O4

The O is a pre-test and post-test, and X is the application of treatment by applying the eco-edutainment-based quantum teaching model in student creative work courses on poster and pamphlet design material for education.

RESULTS AND DISCUSSION

Result

After evaluating students, the value of students' abilities on the material of designing educational posters and pamphlets for the first meeting obtained pretest learning outcomes data as follows:

Table 2.
Student Pre-test Results

Description	Pre test	
	Experiment	Control
Highest score	55	55
Lowest score	30	30
Sum of values	1261	1215
Average	42,03	40,5

Students pretest data in the experimental group and control group before being given treatment. Experimental data had an average value of 42.03, while the control group had an average value of 40.5. The highest and lowest scores in each group have the same value. In general, the ability of students understanding related to posters and pamphlet design material for education is not much different or has almost the same ability.

The results of the assessment of students between the experimental group and the control group are shown in the calculation table as follows:

Table 3.
Student Post-Test Results

Description	Post test	
	Experiment	Control
Highest score	90	83
Lowest score	73	65
Sum of values	2473	2261
Average	82,43	75,37

Table 3 shows that the experimental group was treated using the eco-edutainment-based quantum teaching model, and the average value of students was 82.43. This means there is an increase in the understanding of the material presented using the eco-edutainment-based quantum teaching model. The control group not given treatment only had an average value of 75.37. The control group also experienced an increase even though the learning did not use the eco-edutainment-based quantum teaching model or only used conventional methods used by lecturers, namely the lecture method using PowerPoint media.

Statistical analysis was conducted by testing the research hypothesis using the analysis of covariance (Anacova) technique with a significance level of $\alpha = 0.05$.

Normality Test

The normality test is carried out to determine whether the data is normally distributed or not. The normality test was carried out on the control group and the experimental group. The normality test was tested using Kolmogrov Smirnov with the help of SPSS version 25, the normality test results were obtained as in the following table:

Tabel 4. Tests of Normality

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	Kelas	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
NGain_Persen	Eksperimen	0,082	30	.200*	0,968	30	0,491
	Kontrol	0,133	30	0,182	0,964	30	0,394

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

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Based on table 4, it is known that the sig. value of the Shapiro wilk test for the NGain_Person value in the experimental class is 0.491 and the control class is 0.394. The sig. value of the two classes is greater than 0.05, so it can be said that the data used in the study is normally distributed.

Homogeneity test

The homogeneity test was conducted to determine whether the data in this study had the same variation (homogeneous) or not. After processing the data using SPSS, the calculated significance value was obtained:

Tabel 5. Test of Homogeneity of Variance

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		Levene Statistic	df1	df2	Sig.
Hasil_Belajar	Based on Mean	.461	1	58	.500
	Based on Median	.520	1	58	.474
	Based on Median and with adjusted df	.520	1	56.355	.474
	Based on trimmed mean	.509	1	58	.479

Table 5 shows that the significance value (sig) based on the mean is 0.500> from 0.05, so it can be concluded that the variance of the experimental and control class post-test groups is homogeneous. So, the requirements for the independent sample t-test have met the requirements.

Independent Sample t Test for N-Gain Score

If we refer to categorizing interpretations of the effectiveness of the N-Gain value (%).

Table 7. N-Gain Effectiveness Interpretation Categories

Percentage (%)	Interpretation
<40	Not effective
40 – 55	Less effective
56 – 75	Moderately effective
>76	Effective

Source: Hake, R (1999)

Then, the average value (mean) NGain_Persen for the experimental class is 79.8281 or 79.83%. While for the control class, it was 58.5114 or 58.51%. So, using quantum teaching models based on eco-edutainment in experimental classes effectively improves student learning outcomes in creative work courses for 3rd-semester students of the FKIP Nonformal Education Study Programme, Bengkulu University. Meanwhile, the control class was 58.51% or in the moderately effective category.

To prove whether the difference between the experimental and control groups is significant, it is necessary to interpret the independent samples' test output results. By using the SPSS version 25 application, the results for interpreting the independent samples test table are as follows:

Tabel 8.

Independent Samples Test

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Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference
NGain_Persen	Equal variances assumed	.248	.621	5.759	58	.000	11.31673
	Equal variances not assumed			5.759	57.684	.000	11.31673

The basis for decision-making in the independent samples t-test is as follows:

a. If the sig value. (2-tailed) > 0.05, then H0 is accepted, and Ha is rejected, meaning there is no significant difference in the average student learning outcomes between the experimental group using the eco-edutainment-based quantum teaching model and the control group.

b. If the sig value. (2-tailed) <0.05, then H0 is rejected, and Ha is accepted, meaning there is a significant difference in the average student learning outcomes between the experimental group using the eco-edutainment-based quantum teaching model and the control group.

Based on Table 8, the results show that the sig value. levene's test for equality of variances is 0.621, which is greater than 0.05, or it can be interpreted that the data variance of the experimental group and the control group is homogeneous data, so the interpretation of the independent samples test table output is guided by the value in the "equal variances assumed" table (Sujarweni, 2014).

Based on the table in the equal variances assumed section, it is known that the significance value (2-tailed) is 0.000 <0.05; thus, Ho is rejected, and Ha is accepted, so it can be concluded that the application of the eco-edutainment-based quantum teaching model has a significant effect on the average learning outcomes of 3rd semester students in the student creative work course in the Non-formal Education Study Program at FKIP Bengkulu University.

Discussion

Based on the results of the study, it shows that the application of the eco-edutainment-based quantum teaching model can significantly improve student learning outcomes. The results of this study align with the findings of Fitri, Adnan, and Irdaurni (2021) and Khotimah, Ariani, and Gumay (2018) that applying the quantum teaching model can improve student learning outcomes. Furthermore, DePoter et al. (2010) that quantum teaching is expected in the Super Camp of the United States with 73% increasing grades or learning outcomes. Still, in his research, DePoter also found that applying quantum teaching also increases motivation, self-confidence, self-esteem, and continued use of skills.

Learning with quantum teaching is suitable for learning with student work output. Students of non-formal education study programs enjoy learning activities and feel satisfied with the poster and pamphlet designs they make from various materials. The learning atmosphere certainly helps educators enlarge their teaching skills, motivate students to study hard, and ultimately feel more satisfied with their work (Suryani, 2013; Acat, 2014). Using quantum teaching, students have direct involvement, try to do it themselves, and become the focus of learning. Besides that, students also feel more comfortable and fun, accustomed to thinking creatively, so that learning materials are more easily understood and understood by students (Shoimin, 2014).

The concept of eco-edutainment can be said to be in line with the Merdeka Belajar Kampus Merdeka (MBKM) policy because students are directed to learning that provides real experience for their lives and makes students able to develop their interests and talents according to their wants and needs which of course is fun and makes them more enthusiastic about learning which leads to good learning outcomes. Furthermore, edutainment can be applied with various learning methods, learning models, learning media, and learning resources, making it easier for educators to manage learning according to course characteristics and existing potential (Widiasworo, 2018). Eco-edutainment is suitable to be applied with the quantum teaching model because it has similar characteristics. Namely, quantum is more humanistic so that humans as learners become the center of attention and also more constructivist, which emphasizes the importance of the role of the environment in realizing effective and optimal learning, quality, and meaningful interactions (Surtikanti & Santoso, 2008).

Applying eco-edutainment in learning can improve learning achievement and is suitable for application in the post-COVID-19 recovery period (Indriasari et al., 2022). Eco-edutainment is interpreted as combining education with entertainment that makes students feel comfortable, entertained, and effective to create a pleasant atmosphere and achieve learning objectives. If its use is appropriate, between the elements of education and entertainment, the aspects of humanizing the classroom, active learning, and quantum teaching will be well implemented. Its application produces satisfactory student learning outcomes (Hastuti, 2020; Widiasworo, 2018).

The discussion above shows that the eco-edutainment-based quantum teaching-learning model can significantly improve student learning outcomes, especially in practical courses. This finding can be a reference for educators in teaching to apply learning with similar models in overcoming low learning outcomes in practical courses that previously took place rigidly and monotonously.

CONCLUSION

The application of the eco-edutainment-based quantum teaching model is effective and significant in improving the learning outcomes of 3rd-semester students of non-formal education study programs in student creative work courses in the 2022/2023 academic year. The eco-edutainment-based quantum teaching model effectively increases 79.83% of student learning outcomes, while conventional methods only increase 58.51% of learning outcomes from previous abilities.

The eco-edutainment-based quantum teaching model is recommended for lecturers efficient course instructors to apply learning using the eco-edutainment-based quantum teaching model because it has been proven to improve student learning outcomes. The eco-edutainment-based quantum teaching model is an alternative to practical courses so that students can practice with a happy feeling and better unleash their potential without feeling stiff and tense and gain real-life experience.

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