



The Influence of Quantum Learning Model Assisted by Nearpod on Students' Self Confidence Levels in Learning of Genetics in XII MIPA MAN Lumajang

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Article Information	ABSTRAK
Submitted: 06 – 09 – 2024 Accepted: 26 – 03 – 2025 Published: 31 – 03 – 2025	Hasil pra-penelitian menunjukkan <i>self confidence</i> siswa XII MIPA MAN Lumajang tergolong rendah, terlihat siswa cenderung malu bertanya dan berpendapat disebabkan model dan media pembelajaran yang monoton. Melalui model <i>Quantum Learning</i> , kegigihan dan keberanian siswa akan tumbuh dalam menginterpretasikan materi biologi yang sulit seperti genetika. Partisipasi aktif siswa juga akan didukung oleh fitur-fitur Nearpod. Tujuan penelitian yaitu mengetahui pengaruh yang signifikan model <i>Quantum Learning</i> nearpod terhadap <i>self confidence</i> . Pendekatan penelitian berupa metode kuantitatif dengan berbantuan gan jenis Quasi Eksperimen. Desain penelitian menggunakan <i>Nonequivalent Pretest-Posttest Control Group Design</i> dengan teknik analisis data uji <i>Mann Whitney U-Test</i> . Hasil penelitian menunjukkan <i>self confidence</i> kelas eksperimen diperoleh mean skor angket sebesar 90,27 lebih tinggi daripada kelas kontrol yaitu sebesar 74,69. Hasil uji <i>Mann Whitney U-Test</i> dari hasil <i>posttest</i> diperoleh nilai Sig. $0.000 < 0.05$ artinya, terdapat pengaruh yang signifikan model <i>Quantum Learning</i> berbantuan nearpod terhadap <i>self confidence</i> siswa. Kata kunci: Model <i>Quantum Learning</i> ; Nearpod; Self-Confidence.
Publisher	ABSTRACT
Program Studi Pendidikan Biologi, Fakultas Sains dan Teknologi, UIN Walisongo Semarang	<i>The results of the pre-study showed that the self confidence of students in class XII MIPA MAN Lumajang was relatively low, as students tend to be shy about asking questions and expressing their opinions due to monotonous learning models and media. Through the Quantum Learning model, students' persistence and courage will grow in interpreting difficult biology material such as genetics. Student active participation will also be supported by Nearpod features. The purpose of this study was to determine the significant effect of Quantum Learning model assisted by nearpod on self-confidence. The research approach was quantitative with a quasi experimental design. The research design uses a nonequivalent pretest-posttest control group design with Mann Whitney U-Test data analysis technique. The results showed that the experimental class's self-confidence obtained a mean questionnaire score of 90.27, which was higher than the control class's score of 74.69. The Mann Whitney U-Test results from the posttest obtained a Sig. value of $0.000 < 0.05$, meaning that there was a significant effect of the Nearpod-assisted Quantum Learning model on students' self-confidence.</i> Keywords: Nearpod; Quantum Learning Model; Self Confidence.

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INTRODUCTION

Self confidence is one of the attributes and aspects of personality in a person that is very valuable in social life. A problem can occur for someone who does not have a confident attitude, because the key in conducting healthy communication is with a confident attitude. All the potential possessed by an individual will be able to be actualized and applied through self-confidence. Thus, it can be said that self-confidence is the main need of a person both individually and in groups, a child and a parent (Hamdanah & Surawan, 2022). In the context of education, self-confidence is very important for students as a supporting component of the learning process. Students who have a confident attitude will be more helpful in improving their quality for the better and being able to find strengths and weaknesses in themselves. Meanwhile, students who are less confident, passive and insecure tend to doubt their ability to succeed in learning (Muslim, 2020). This shows that competence in supporting the learning process does not only focus on cognitive aspects, but also in terms of self-confidence as an element of affective competence.

However, the problem of students' self-confidence in Indonesia based on the *Trends in Mathematic and Science Study* (TIMSS) report, states that until now less than 30% of students have low self-confidence (Purwasih, 2015). As in Magfira's (2023) study, the average self-confidence of students in the low category was 66% for the self-efficacy indicator, 67% for the assertiveness indicator, 70% for the responsibility indicator in the moderate category, and 69% for the positive thinking indicator in the low category. Another study related to student self-confidence profiles in Rentellia and Pradibta (2024) found that 30% of students had low self-confidence with low KKM scores, 43% of students had moderate self-confidence with moderate KKM scores, and 27% of students had high self-confidence with high KKM scores that met all four KKM categories. This proves that self-confidence issues are still a problem in Indonesian schools, especially at the high school level, which is dominated by the low category.

The factors that influence student self-confidence consist of internal and external factors. The internal factors of self-confidence include four aspects, namely self-concept, self-esteem, physical condition, and life experience. Meanwhile, the external factors of self-confidence include three aspects, namely education, work, and environment (Yulianti and Bulkani, 2018). Basically, in addition to students' self-confidence being built and influenced by their own control, things beyond their control, such as the educational environment, also affect their level of self-confidence, such as the teacher's strategy in organizing and arranging each component of learning. This has been confirmed in Darajat's (2023) research that the factors that can affect the low self-confidence of students include the lack of maximum learning models and media applied. This is because teachers prefer lectures as a learning method which is basically only centered in one direction coupled with a variety of media and the use of technology that is less applied in learning. Therefore, students become less active in learning and are not confident in expressing their opinions. This is reinforced in Suryaningsih (2023), which found that

students' self-confidence at school was low because teachers still used conventional models to explain material in class. This means that the appropriateness of the learning model is also an important aspect in significantly improving students' self-confidence.

The importance of self-confidence as one of the main assets for students in adapting to the academic environment, in cognitive aspects, is also closely related to students' scientific skills that refer to science-based material content such as studies in biology (Ogi, et.al 2023). The material in biology subjects consists of a very broad range of material and there are also many scientific terms such as in the study of genetics material, so that many students find it difficult to interpret and remember these terms (Annisa, 2024). Genetics material has a level of complexity that is quite complex and has the characteristics of abstract material. This causes many students to think that the concept of genetics material is quite difficult to understand because the objects studied are outside of everyday life (Jannah, 2023). This is clarified by Silvia's (2024) research, which shows that the response of most students in considering biology as a difficult science subject can have a negative impact on their self-confidence. Thus, educators need a certain way to increase student confidence, especially in terms of understanding genetics material that is considered complicated. If students have high self-confidence in themselves, the completeness of learning outcomes is easier to achieve.

Based on the results of observations in Biology learning activities at MAN Lumajang from May 6 to 22, 2024, it was found that many 12th grade MIPA students had weak self-confidence. This is in line with the results of the pre-research observation, which showed that during the presentation activity, namely in the discussion or question and answer session, XII MIPA students at MAN Lumajang who had the courage to ask questions and express their ideas tended to be the same students who usually had higher academic scores, including in biology. The problem of low self-confidence among students can also be observed when many students choose to share answers and do not hesitate to cheat when completing formative assessment tasks. As a result, when the answers are corrected, the final scores of most students are similar. Based on interviews with XII MIPA MAN Lumajang students, the reason for cheating is because they feel insecure about their own answers even though they have studied the material beforehand. However, their biggest fear is receiving negative feedback from friends or teachers due to their low scores, so they decide that cheating is the best option. This means that the low self-confidence of XII MIPA MAN Lumajang students is supported by their cognitive ability to remember the complexity of the material they are learning, and students tend to compare their abilities with other students who are known to often get higher scores, making them doubt their own abilities and unsure whether their answers are correct according to the material concepts or wrong. Based on these events, it can be interpreted that most students in class XII MIPA at MAN Lumajang feel less confident about their abilities and potential, while only a small number of students have high self-confidence and are more active in learning.

The results of the interview with the biology teacher of class XII MIPA MAN Lumajang confirmed that the conventional learning model is a learning model that is more often applied by using several methods such as discussions, lectures and assignments. The conventional learning model is a reference in carrying out learning activities at MAN Lumajang because it is considered easy to apply during the learning process. But on the other hand, it also causes students to lack confidence because they are not fully involved actively during learning activities.

It is very important for an educator to choose a learning model that is considered appropriate and effective in supporting the improvement of students' self-confidence. Bobby Deporter and Mike Henarcki in Pasinggi et al (2022) explained that the Quantum Learning model can improve communication skills, combine learning talents and increase student confidence in the learning environment. The Quantum Learning model can also improve understanding and memory, bring the learning atmosphere to be more fun and satisfying and accelerate the learning process. The application of the Quantum Learning model can be optimally successful by involving learning media that is considered appropriate by taking into account the characteristics of the teaching material and the condition of the learning subject.

The biology teacher of MAN Lumajang in the interview explained that the media used in biology learning tends to refer to biology textbooks. However, in the observation, it was still found that some XII MIPA MAN Lumajang students did not have biology textbooks due to economic problems and the school also did not require it. This causes students to not fully listen to the teacher's explanation and choose to play cellphones and even chat with their peers. When reviewed in the learning of genetics material applied by the biology teacher of MAN Lumajang in the previous academic year, the media used was genetics button media. However, the genetics button media is considered to have weaknesses to determine recessive and dominant traits in Mendel's law sub-material. Thus, it is important for educators to choose the right teaching materials and media to be applied in the learning process because both components are parameters of the learning process that can be said to be successful and the achievement of learning objectives.

Innovation of learning activities by involving technology-based media such as animated videos, interactive images to online educational games can complement the implementation of the Quantum Learning model and it would be better if several types of media can be developed by combining them in one platform, namely through interactive media "nearpod". As according to Abdullah (2022) students have high curiosity in exploring nearpod media, on the other hand students also become more confident to improve their ability to solve problems and find new concepts in redox material. This is in line with Ratu's (2021) research that the application of the Quantum Learning model with the help of video media can sharpen students' ability to remember and, in the affective domain, foster students' self-confidence to participate actively, dare to express their arguments, and take responsibility for their own learning process without always depending on others or fearing failure.

Based on the results of previous studies and the background, the researcher seeks to improve the self-confidence of students in class XII MIPA MAN Lumajang on genetics material by applying the Quantum Learning model assisted by nearpod media. The research objective in this study is to determine the significant effect of Quantum Learning model assisted by nearpod media on students' self-confidence in genetics class XII MIPA at MAN Lumajang. The analysis is carried out through various research data that have been collected by referring to certain theories and supported by studies in previous research that are relevant to the research issue.

METHODS

This research uses a quantitative approach with experimental research methods. The type of research used is Quasi Experimental Design. The population in this study included all XII MIPA MAN Lumajang students. The sample selection used purposive sampling, which obtained 26 control class students from XII MIPA E and 27 experimental class students from XII MIPA F. Since this study only focused on measuring students' self-confidence levels in learning genetics without assessing cognitive aspects such as student learning outcomes, then the two sample groups were selected just based on the level of achievement of students' self-confidence in the learning process which was considered the same.

The implementation of the research began in October to November in the 2024/2025 school year in class XII MIPA MAN Lumajang, Lumajang district. The research design used was Nonequivalent Pretest-Posttest Control Group Design. Data in this study were collected in several techniques, namely; first observation, carried out to ensure the confidence of students and also aims to ensure the implementation of the Quantum Learning model through the assessment of an observer. As for the second data collection technique, student self-confidence data was collected through a questionnaire. The questionnaire instrument used in the study was adjusted to several indicators of self-confidence according to Lauster's theory in 2012. There are 32 statement items (positive and negative) related to students' self-confidence in learning genetics material as detailed in the lattice of self confidence questionnaire instrument presented in Table 1.

Table 1. Self Confidence Questionnaire Grid

Indicator	Item Number	
	Positive	Negative
Self-confidence	1,2,3,4,12,18	3,32
Optimistic	5,7,8,9	6,10,11
Objective	13,14	15,16,17
Responsible Answer	19,22,23,24,25	20,21
Rational and realistic	26,29	27,28,30,31

(Modification of Likaromah Saif's Thesis, 2022)

The self confidence questionnaire is designed with 5 answer options in accordance with the Likert scale scoring, which includes: score 1 = Strongly Disagree / STS, score 2 = Disagree / TS, score 3 = Moderately Agree / CS, score 4 = Agree /

SS and score 5 = Strongly Agree / SS which applies to positive statements but for negative statements the highest score applies vice versa. Furthermore, the self confidence questionnaire instrument was tested for validity and reliability first in the trial class. The results of the product moment person validity test show that there are 23 valid items that have represented each indicator and for the Cronbach alpha reliability value of 0.869 in the highly reliable category.

Each instrument that was considered valid and reliable was distributed to the sample class groups. The data obtained were then tabulated and converted into numbers and continued with descriptive and inferential statistical analysis. Descriptive analysis in this study uses the calculation of mean, standard deviation, variance, maximum value, minimum value, range and frequency distribution. The frequency distribution calculation involves percentages, frequencies and 5 class categories ranging from very high, high, medium, low and very low as obtained by categorizing the level of achievement of self confidence score presented in Table 2.

Table 2. Category of Self Confidence Score Achievement Level

Score	Category
21-39	Very Low
40-58	Low
59-77	Medium
78-96	High
97-115	Very High

Finally, the inferential test is using the Shapiro Wilk normality test, Lavene Test homogeneity and hypothesis testing with the help of SPSS v.22. Hypothesis testing uses Independent Sample T-Test because it aims to determine the difference in average scores between experimental and control classes. The Independent Sample T-Test test can be used if the data is normally distributed, while if the data is not normally distributed, the hypothesis test uses the Mann Whitney U-Test test.

RESULTS AND DISCUSSION

This study was conducted in 3 meetings for the control class with the treatment of conventional models assisted by biology package books and 3 meetings for the Quantum Learning model assisted by nearpod media applied to the experimental class. Each syntax of the learning model has been implemented very well according to the teaching module that has been prepared as a learning planning document in the study. This is based on the observer's assessment as evidenced in the observation sheet of the implementation of the Quantum Learning model syntax, which is obtained a percentage of 100%. The diagram of the implementation of the Quantum Learning model syntax in 3 meetings is presented in Figure 1.

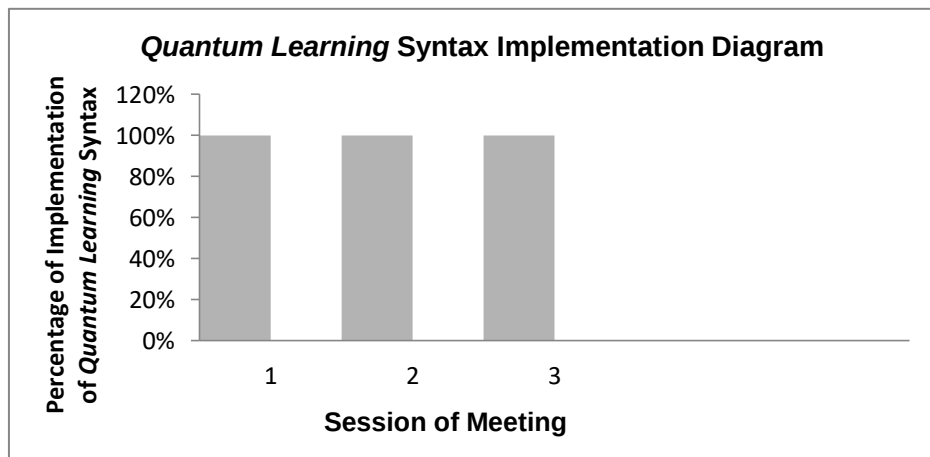


Figure 1. Bar Diagram of Implementation of Quantum Learning Syntax

Data on pretest self confidence of experimental class students treated with Quantum Learning model assisted with nearpod media and control class students treated with conventional model assisted with biology textbooks in descriptive analysis includes mean value, standard deviation, variance, maximum value, minimum value and range. The results of these calculations using the SPSS version 22 application are presented in Table 3.

Table 3. Self Confidence Data Pretest of Learners

Descriptive Analysis	Control Class Pretest	Experiment Class Pretest
Mean	61,23	60,77
Standard Deviation	15,27	9,72
Variance	233,22	94,50
Maximum Value	76	75
Minimum Value	34	36
Range	42	39

Based on Table 3. the average value (mean) of the pretest for the experimental class is 60.77, the standard deviation value is 9.72, the variance value is 94.50, the maximum value is 75, the minimum value is 36 and the range value is 39. While the control class pretest results obtained an average value (mean) of 61.23, a standard deviation value of 15.27, a variance value of 233.22, a maximum value of 76, a minimum value of 34 and a range value of 42.

The results of the next descriptive analysis, namely the calculation of the frequency distribution with the number of students in each category of self confidence, are presented in Figure 2.

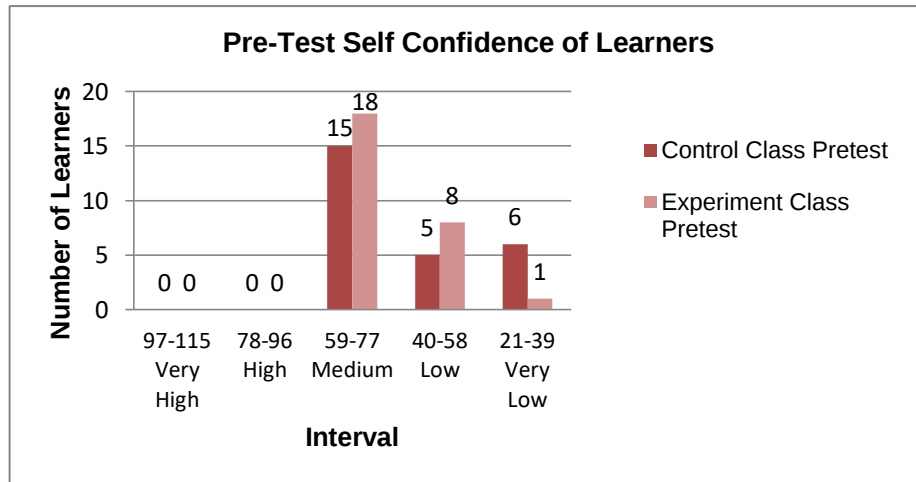


Figure 2. Pretest Self Confidence of Experimental and Control Class Students

Based on Figure 2. the bar chart shows that some students in the experimental class group at the interval 21-39 in the very low self confidence category amounted to 1 person or 4%, the low category at the interval 40-58 amounted to 8 people or 30%, the medium category at the interval 59-77 amounted to 18 people or 67% and there were no students in the high self confidence category at the interval 78-96 or the very high category at the interval 97-115. This shows that the category of self confidence in the experimental class that dominates in the pretest results is the medium category. The data in the control class group obtained 6 people or 23% of students in the very low self confidence category in the interval 21-39, low category in the interval 40-58 amounted to 5 people or 19%, medium category in the interval 59-77 amounted to 15 people or 58%. The lowest self confidence category is the same as the experimental class, which is located in the high self confidence category in the interval 78-96 and the very high category in the interval 97-115 with a total of 0% students.

Posttest data on self confidence of experimental and control class students based on the results of the calculation of mean, standard deviation, variance, maximum value, minimum value and range using the help of the SPSS version 22 application can be presented in Table 4.

Table 4. Posttest Self Confidence Data of Learners

Descriptive Analysis	Control Class Posttest	Experiment Class Posttest
Mean	74,69	90,27
Standard Deviation	6,52	12,64
Variance	42,54	159,72
Maximum Value	90	110
Minimum Value	57	72
Range	33	38

Based on Table 4. the average value (mean) of the posttest for the experimental class is 90.27, the standard deviation value is 12.64, the variance value is 159.72, the maximum value is 110, the minimum value is 72 and the range value is 38. The control class posttest results obtained an average value (mean) of 74.69, a

standard deviation value of 6.52, a variance value of 42.54, a maximum value of 90, a minimum value of 57 and a range value of 33.

The results of the next descriptive analysis, namely the calculation of the frequency distribution with the number of students in each category of self confidence, are presented in Figure 3.

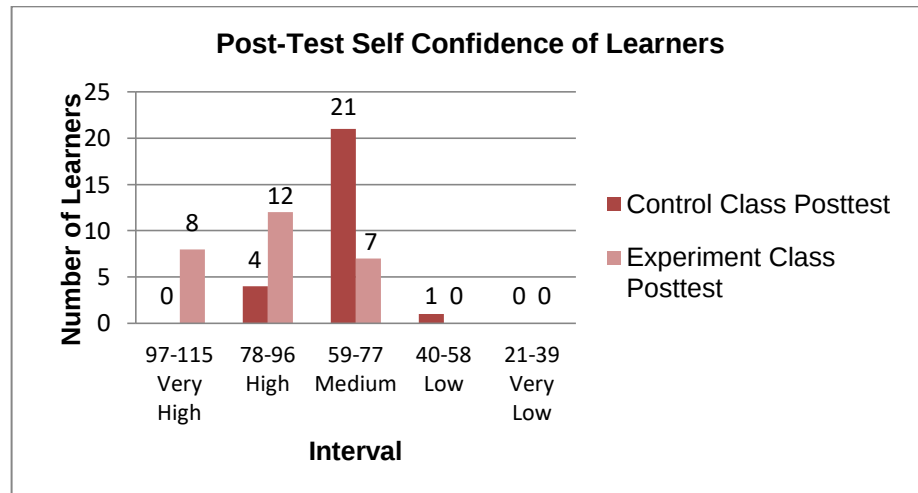


Figure 3. Posttest Self Confidence of Experimental and Control Class Students

Based on Figure 3, the experimental group posttest results show that the very low self-confidence category in the interval 21-39 and the low self-confidence category in the interval 40-58 no students were found in it. Furthermore, for the medium category at the interval 59-77, 7 students or 30% were obtained, the high self confidence category at the interval 78-96 dominated with a total of 12 students with a percentage of 44% and there were 8 students or 26% in the very high self confidence category. As for the control class group, no students were found in the very low self confidence category in the interval 21-39, the low category in the interval 40-58 was only found by 1 student or 4%. The moderate self confidence category at intervals 59-77 of the control class has the highest number of students, namely 21 people or 81%. Then for the high self confidence category at the interval 78-96 there were 4 students or 15% and the very high category at the interval 97-115 amounted to 0 students (0%).

Data on self-confidence of XII MIPA F students (experimental class) before and after being treated showed a fairly high increase in the average score. This is evidenced by the mean pretest score obtained amounted to 60.77 and the mean posttest score increased, namely the score obtained was 90.27. Then the results of self confidence data in the control class (XII MIPA E) mean pretest score obtained amounted to 61.23 and for the mean posttest score of 74.69. This fact proves that the control class has a higher pretest mean score than the experimental class. However, because the two sample groups have a mean pretest score with a difference of 0.46, it means that the initial ability of the two sample class groups related to student self-confidence in understanding genetics material is considered the same.

Furthermore, the average posttest score between the two sample groups has increased, where the mean posttest score is higher than the mean pretest score. In the experimental class, the average self confidence posttest score obtained was 90.27 and for the control class mean posttest score obtained amounted to 74.69. Thus, the higher mean score of posttest self confidence questionnaire is located in the experimental class group taught with the Quantum Learning learning model assisted by nearpod media than the control class group which is treated with a conventional model assisted by a biology textbook. This event also proves that the Quantum Learning learning model with nearpod assisted has an effect on students' self-confidence in learning genetics material compared to conventional models assisted by biology textbooks.

Experimental class students who were treated with the Quantum Learning model with the help of nearpod media in descriptive analysis based on frequency distribution calculations on pretest results were dominated by the percentage of moderate self-confidence category, namely with a total of 18 students or 67%. This is the same as the control class group with the percentage of the number of students based on the pretest results dominated by the moderate self-confidence category, namely 15 students or 58%. Then for the frequency distribution analysis based on the posttest results, it is known that the experimental class group with a high self-confidence category became the dominating category with the highest number of students, namely 12 students or with a percentage of 44% and there were 8 students with a percentage of 26% in the very high self-confidence category. Unlike the case with the control class group, the dominating percentage is in the moderate self confidence category, which is obtained by 21 learners or 81%. While for the high self-confidence category only amounted to 4 students or 15% and the lowest self-confidence category in the control class, namely with a total of 0% of students located in the very high self-confidence category. Thus it can be interpreted that the Quantum Learning model assisted by nearpod media has an effect on the self confidence of experimental class students in understanding genetics material compared to control class students who are treated with conventional learning models and assisted with biology textbooks.

This research prerequisite test involves normality test and homogeneity test, so that it can be known that the research data includes parametric or non-parametric. This can be a reference in determining the hypothesis test that will be used in the study. The test in the normality test is carried out to determine whether the data is normally distributed or not using the help of the SPSS version 22 application. The normality test in this study uses the Shapiro Wilk test as the results obtained based on the self confidence questionnaire pretest data are presented in Table 5.

Table 5. Normality Test of Student Self Confidence Pretest Data
Tests of Normality

Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Statistic	Df	Sig.	Statistic	Df	Sig.

Experiment Pretest	.091	26	.200*	.963	26	.454
Control Pretest	.221	26	.002	.819	26	.000

Based on Table 5. above shows the df (degree of freedom) value of 26 in both the experimental and control classes. This means that the research sample is less than 50, so the significance value in the Shapiro-Wilk test is considered the most appropriate to use in the normality test. The experimental class pretest data obtained a significance value of 0.454 while in the control class it was 0.000. That is, because the significance value of the experimental class pretest is greater than 0.05, it can be said that the data is normally distributed and vice versa for the control class pretest data.

The results obtained in the Shapiro Wilk normality test of posttest data for self confidence questionnaire for experimental and control classes are presented in Table 6.

Table 6. Normality Test of Posttest Data Self Confidence of Students

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Experiment Posttest	.140	26	.200*	.923	26	.053
Control Posttest	.228	26	.001	.910	26	.027

Based on Table 6. above shows that the experimental class posttest obtained a significance value of 0.053 while in the control class it was 0.027. This shows that because the significance value of the experimental class posttest is greater than 0.05, it can be said that the data is normally distributed while the control class posttest data is not normally distributed because the Sig. value <0.05.

Based on the results of the research normality test in the self confidence questionnaire pretest data, the significance value obtained in the experimental class is 0.454 while the control class has a significance value of 0.000. Furthermore, the normality test in the self confidence questionnaire posttest data, the significance value obtained by the experimental class is 0.053 and the control class has a significance value of 0.027. The conclusion based on the normality test is that the pretest and posttest data of the experimental class can be said to be normally distributed data because the significance value > 0.05. While the control class is said not to have normal distribution because the Sig. value obtained <0.05.

The homogeneity test in this study used the Lavene test with the help of the SPSS version 22 application. The results of the homogeneity test based on the pretest data of the self confidence questionnaire are presented in Table 7.

Table 7. Homogeneity Test of Pretest Data of Self Confidence of Students
Test of Homogeneity of Variances

Self Confidence Questionnaire			
Levene Statistic	df1	df2	Sig.
7.976	1	51	.007

Based on Table 7. it can be seen that the results of the homogeneity test of the pretest data of the experimental class and control class obtained a significance value of 0.007. This shows that because the significance value of $0.007 < 0.05$, it can be concluded that the pretest data of students' self-confidence has an inhomogeneous data variance. The results of the homogeneity test of posttest data of self confidence of experimental and control classes are presented in Table 8.

**Table 8. Homogeneity Test of Data Self Confidence of Learners
Test of Homogeneity of Variances**

QuestionnaireSelf Confidence			
Levene Statistic	df1	df2	Sig.
13.711	1	51	.001

Based on Table 8. The results of the SPSS output above show that the posttest data of the experimental class and control class obtained a significance value of 0.001, because the significance value is smaller than 0.05, it can be said that the variance of the posttest data of students is not homogeneous.

Furthermore, self confidence data based on the homogeneity test, the pretest data of the experimental and control classes the significance value obtained is 0.007 while the posttest data of the experimental and control classes significance value obtained is 0.001. This means that the significance value of the pretest data and posttest data is < 0.05 , namely the data is not homogeneous or the variance of the two sample groups is not the same.

Results of the pre-requisite test obtained in the previous explanation show that there is data that is not normally distributed, namely the pretest and posttest data of the control class while the experimental class has a normal distribution. Then in the homogeneity test, it shows that the data variance is not homogeneous in the pretest data or the students' self confidence posttest data. Therefore, because there is data that is not normally distributed, the hypothesis test used is a non-parametric statistical test involving the Mann Whitney U-Test test. The Mann Whitney U-Test test results as obtained based on self confidence pretest data are presented in Table 9.

**Table 9. Mann Whitney U-Test of Pretest Results of Student Self Confidence
Test Statistics^a**

Self Confidence	
Mann-Whitney U	302.500
Wilcoxon W	680.500
Z	-.865
Asymp. Sig. (2-tailed)	.387

Based on the results of the SPSS output Mann Whitney U-Test test on the pretest results of the self confidence questionnaire as shown in Table 9. shows that the two tailed significance value section obtained a value of 0.387. This indicates that the significance value > 0.05 means that H_0 is accepted and H_a is rejected or there is no significant difference in the self-confidence of experimental class students who are treated with the Quantum Learning model assisted by nearpod media and the

control class which is treated with a conventional model assisted by a biology textbook.

Table 10. Mann Whitney U-Test of Student Self Confidence Posttest Results
Test Statistics^a

Self Confidence	
Mann-Whitney U	125.000
Wilcoxon W	476.000
Z	-4.031
Asymp. Sig. (2-tailed)	.000

The Mann Whitney U-Test test results based on Table 10. show that the two tailed significance value obtained is 0.000. In accordance with the basic decision making in hypothesis testing using the Mann Whitney U-Test test at the 95% confidence level, it can be interpreted that the Sig. (2 tailed) value is $0.000 < 0.05$. Thus, it can be concluded that H_0 is rejected and H_a is accepted or there is a significant difference in the self-confidence of experimental class students who are treated with the Quantum Learning model assisted by nearpod media and the control class who are treated with conventional models assisted by biology textbooks.

The results of descriptive analysis based on the calculation of the value (mean) and frequency distribution of pretest and posttest self confidence data show that control class and experimental class students have different average scores with different self confidence categories. Thus, it is necessary to continue with the hypothesis test to ensure that the difference is significant through the Mann Whitney U Test because as in the previous prerequisite test there is self confidence data that is not normally distributed. The results of the Mann Whitney U-Test with the help of SPSS version 22 based on Table 10 show that the two tailed significance value of the pretest results is 0.387 because $p > 0.05$, meaning that there is no significant difference in student self confidence related to genetics material between the experimental class and the control class. However, it is different with the results of the Mann Whitney U-Test test in the posttest of the self confidence questionnaire, which obtained a two tailed significance value of 0.000 because the value of $p < 0.05$ means that there is a significant difference in students' self confidence related to genetics material between the experimental class treated with the Quantum Learning model assisted by nearpod media and the control class treated with conventional models assisted by biology textbooks.

The increase in self-confidence of experimental class students who were treated with the Quantum Learning model assisted by nearpod media is in accordance with the theory put forward by Bobbi Deporter in Sultan and Hajerina (2020) that the Quantum Learning learning model is one of the learning models that is able to build a pleasant learning environment for students so that it can create student self-confidence, improve communication skills and learning skills that will fuse together. This has also been proven in Padmara et al's research (2021) that the quantum learning model can increase students' self-confidence. The research

evidence shows that the initial average percentage of students' self confidence was 50% in the low category, then in cycle I the number of students in the high self confidence category increased to 70% and in cycle II the number of students in the very high category increased again to 92%.

The nearpod learning media involved in implementing the Quantum model is also an important part in supporting the high self-confidence of experimental class students. According to Fardisa (2021) nearpod media is an interactive media that supports student activeness in learning and increases student confidence and enthusiasm for learning. As can be seen, nearpod media not only helps present material in various types of interesting features, there are also online educational games that can be used as learning evaluations. The use of these games has the advantage of increasing student confidence. This has been confirmed by Sari in Nabilah (2024) that the use of games can create a pleasant environment in learning and full of comfort for students, through challenges and achievements achieved from the game features can build positive self-esteem and self-confidence in students.

Al Hanab (2023) explained in his research that students who have good self-confidence and self-esteem will be eager to complete the task while if a child lacks self-confidence then they will provide an ordinary stimulus during learning activities. This has been proven in the observation results of this study, where experimental class students are very enthusiastic about working on tasks in nearpod media independently and do not hesitate to submit tasks and are more active in expressing opinions. However, when looking at the application of conventional learning models in the control class group, it was found that there were students who tended to be afraid to ask questions, felt bored in participating in learning and lacked focus in learning which caused students to not understand what had been explained so that when given an assignment these students tended to ask to be guided again in completing the task. This can also occur due to the use of learning media that is less attractive to students, so that control class students tend to be passive in learning and are not confident in their own abilities.

CONCLUSION AND RECOMMENDATION

Based on the research objectives, it can be concluded that there is a significant effect of the Quantum Learning model assisted by Nearpod on the self-confidence of XII MIPA students in learning genetics material at MAN Lumajang. This is evidenced by the hypothesis test results, which show a Sig. (two-tailed) value of $0.000 < 0.05$. The high level of self-confidence in the experimental class is due to the Quantum Learning model treatment, which includes a demonstration syntax to encourage students to be more confident in arguing, supported by Nearpod media that provides interactive features to strengthen students' belief in their abilities.

Future researchers in conducting more in-depth research related to the Quantum Learning model are expected to develop it by involving other types of interactive media either in print or using other digital-based media. Innovative and interactive media is important to be involved, seeing that all student activities today

are technology-based so that students are no longer bored in participating in learning, so that it can increase and build student confidence. Future researchers can also add parts of the research variables in both the independent and dependent variables.

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