

Using Contextual Teaching-Learning for Enhance Competency, Student Achievement and Learning Outcome in Developing the Accounting Information System in Indonesia

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Abstract

The purpose of this research is to increase competence in knowledge, students' skills in understanding concepts and theories of Accounting Information Systems, improve achievement and learning outcomes with innovative contextual learning and evaluation of application with survey questionnaires. Quantitative research method using a questionnaire to 200 students who took SIA courses in a survey, and the data is processed using statistics Partial Least Square (PLS). The results show that the contextual method is able to improve learning achievement and improve learning outcomes (development of knowledge base, analysis and problem solving, modern in learning techniques, improve learning and collaboration in learning) as well as improve and enhance the learning competence of all students. The results of the research provide new theory and practical results in contextual learning and advance the reform of contextual learning.

Keywords: contextual teaching-learning, competence, student achievement, learning outcomes

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1. Introduction

The learning process that is practiced today is mostly in the form of lecturing. When attending lectures or listening to lectures, students are limited to understanding taking notes and sometimes being passive. Lecturers become the center of the role in the utilization of learning outcomes (teacher centered learning) and seem to be the only source of knowledge. During the COVID-19 pandemic, the campus/government took a policy to implement a bold learning system. Learning aids that can be used are LMS, Zoom or Google Classroom. Therefore, there are many learning methods that we can create and develop, including the Inquiry method to learn systematically, critically, logistically, and analytically so that they can formulate their own findings with confidence. Peer learning in the process of finding and finding inventions, learning on critical and analytical thinking processes to find and find the answer to a question on their own, The thinking process is carried out through discussion, question and answer between friends and lecturers as agents of enlightenment. In the discussion of facts to prove the validity and reliability about in the field. The SIA course is a course that must be studied with an understanding of knowledge and practice in the field to be able to deepen it more.

Contextual-discovery learning is a learning activity that involves maximally all students' abilities to search for and investigate something (objects, people or events) systematically, critically, logically, analytically so that they can formulate their own findings with confidence. Contextual learning emphasizes the process of seeking and finding. Subject matter is not given directly. The role of students in this learning is to find and find the subject matter themselves, while the teacher acts as a facilitator and guide for students to learn. Contextual learning is a series of learning activities that emphasize critical and analytical thinking processes to seek and find answers to a problem in question.

Contextual-discovery learning is a very important part of the National learning system. In this method, students are encouraged to identify what they want to know, followed by looking for information on their own and then organizing or constructing what they know and understand. By applying the discovery method repeatedly can increase the ability of individual self-discovery. This method changes the passive learning conditions to be active and creative. Changing teacher-oriented learning to student-oriented. In this learning concept, it forms concepts that allow generalization or is called a coding system in the sense of the relations (similarity and difference) that occur between objects and events. In the learning process with this method, the teacher only acts as a guide and facilitator who directs students to find concepts, propositions, procedures, algorithms and the like.

One of the learning methods that have recently been widely used in advanced schools is the discovery method. This is because this method: 1) is a way to develop active student learning; 2) by discovering and investigating the concepts learned by themselves, the results obtained will be long-lasting in memory and not easily forgotten by students; 3) self-discovered meanings are understandings that are truly mastered and easy to use or transfer in other situations; 4) by using the discovery strategy, children learn to master one of the scientific methods that they can develop themselves; 5) students learn to think analytically and try to solve the problems

they face themselves, this habit will be transferred in real life.

Based on the description above, a research was conducted with the title: Contextual Learning Model teaching-learning in the SIA Course at the Accounting Department of the State Polytechnic of Malang Indonesia to improve achievement, competence and learning outcomes.

2. Theoretical Framework

2.1. *Basic Concepts of Contextual Teaching- Learning*

The results of previous studies almost all show a significant effect of the contextual teaching learning method on student achievement and increase student competence and increase the impact of inquiry discovery on knowledge, skills, collaboration, modernization of learning methods, problem solving analysis and improving the learning process (Nuraya, 2020; Afriani 2018; Auliya 2012; TIB 2017; Zahrani 2019; Aprilia 2019; Apriyanti 2015; Aqib 2015; Erickson 2001; Prabawanto 2017; Debora 2012; Pujani 2017; Osman 2018; Kula 2013; Gosong 2008; Hamruni 2015; Hartoyo 2009; Hasibuan 2014; Erwin 2018; Nail 2016; Liu 2020; Indrayati 2017; Indrayati 2019; Indrayati 2021; Indrayati 2020; Indriani 2017; Jauhari 2011; Johnson 2007; Hannum 2010; Kadir 2013; Amin 2011; Komalasari 2012; Lider 2018; Manao 2013; Muhlisin 2012; Muslim 2009; Nilasari 2018; Novitasari 2014; Nuzul 2014; Putra 2017; Budiharti 2010; Manik 2013; Saputra 2017; Sariyani 2012; Emilia 2012; Sudana 2019; Sakti 2014; Bettye 2006; Suarjana 2017; Mertesari 2005; Sufianto 2019; Sugiarti 2012; Suhartono 2018; Surdin 2018; Susialita 2016; Susila 2013; Tantu 2018; Tilaar 2019; Trianto 2014; Dantes 2014; Martini 2015; Desyandri 2019).

2.2. *Discovery Contextual teaching-Learning Principles*

Contextual teaching- learning refers to the following principles (Trianto 2014) :

1. Oriented to Intellectual Development. The main goal of contextual learning is the development of thinking skills. Thus, this learning is not only oriented to learning outcomes but also oriented to the learning process.
2. Principle of Interaction. The learning process is basically an interaction process, both interactions between students and interactions between students and teachers, even interactions between students and the environment. Learning as an interaction process means placing the teacher not as a source of learning, but as a regulator of the environment or a regulator of the interaction itself.
3. The Principle of Asking. The teacher's role that must be carried out in using this learning is the teacher as the questioner. Because, the ability of students to answer each question is basically already part of the thinking process. In this case, the teacher's ability to ask questions in every step of inquiry is very necessary. In addition, in this learning, students also need to develop a critical attitude by always asking and questioning the various phenomena they are studying.
4. The Principle of Learning to Think. Learning is not just remembering a number of facts, but learning is a process of thinking (learning how to think), namely the process of developing the potential of the whole brain. Learning to think is the maximum utilization and use of the brain.
5. The principle of openness. Meaningful learning is learning that provides various possibilities as hypotheses that must be proven true. The teacher's task is to provide space to provide opportunities for students to develop hypotheses and openly prove the truth of the hypotheses they propose.

2.3. *Steps to Implement Contextual teaching- Learning*

The contextual teaching- learning process is carried out through the following stages:

1. Formulate the problem; the skills required are: (a) awareness of the problem; (b) see the importance of the problem and (c) formulate the problem.
2. Develop a hypothesis; The skills required in developing this hypothesis are: (a) testing and classifying the data that can be obtained; (b) see and formulate existing relationships logically; and formulate hypotheses.
3. Testing tentative answers; The skills required are: (a) assembling events, consisting of: identifying required events, collecting data, and evaluating data; (b) compiling data, consisting of: translating data, interpreting data and classifying data; (c) data analysis, consisting of: looking at relationships, noting similarities and differences, and identifying trends, sequences, and regularities, (d) finding answers to hypotheses.
4. Draw conclusions; the skills required are: (a) looking for patterns and meanings of relationships; and (b) formulate conclusions
5. Apply conclusions and generalizations (Hannum.2010)

According to Hosnan (2014) the characteristics or characteristics of contextual teaching- Learning are (1) searching, investigating, exploring and solving problems to create, combine, and generalize knowledge, (2) student-centered, (3) activities to combine new knowledge and old knowledge. which have existed

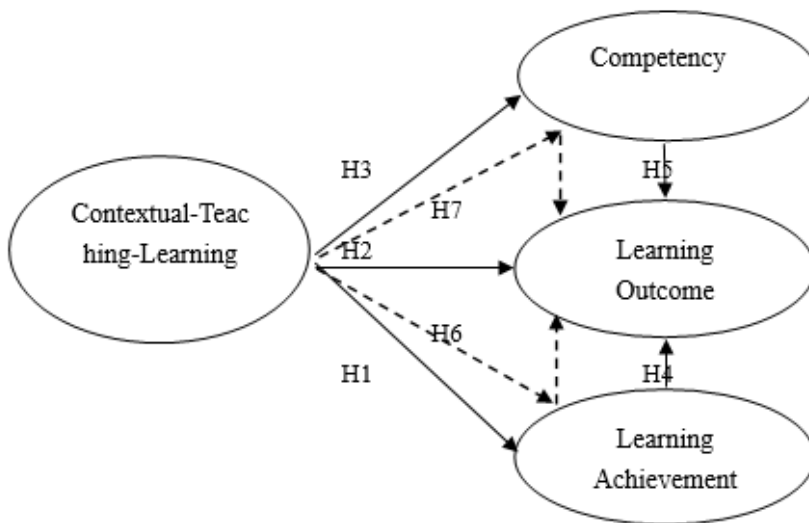
Contextual teaching learning is learning that helps teachers relate the material being taught to students' real world situations and encourages students to make connections between their knowledge and its application to their daily lives. This involves seven main components of effective learning, namely; constructivism, asking

(questioning), finding (inquiry), learning community, modeling, reflection and actual research. This learning provides more opportunities for students to do, try, and experience for themselves (learning to do), students are not just passive listeners. This learning prioritizes real knowledge and experience (real world learning), high-level thinking, student-centered, active students, critical, creative, problem-solving, students learn fun, fun, not boring, (joyful and quantum learning) and uses various kinds of learning. Learning Resources.

The hypotheses in this study are:

- H1: Contextual learning has a significant effect on learning achievement
- H2: Contextual learning has a significant effect on learning outcomes
- H3: Contextual learning has a significant effect on student competence
- H4: Learning achievement has a significant effect on learning outcomes
- H5: Competence affects learning outcomes
- H6: Contextual learning has an effect on learning outcomes through learning achievement.
- H7: Contextual learning has an effect on learning outcomes through competence.

The research model is:



$$Y1 + Y2 + Y3 = a + b1 X1 + e$$

Figure 1. Concept Research Model

3. Research Methodology

3.1. Classroom action research

Classroom Action Research according to the Lewis Model which is interpreted by Elliot (1991) includes aspects of planning, action, observation and reflection. Classroom action research according to Moleong (2015) is as follows:

Identify problems, discuss problems between researchers and those being studied, examine libraries and problems, redefine problems, choose change and evaluation methods, implement changes. The type of research is quantitative with the subject of 6 classes of students taking SIA courses with a total of 200 active students in the accounting department of the State Polytechnic of Malang Indonesia. The survey research method used data collection techniques by sending questionnaires to all students who took the SIA course with a response rate of 98%. 196 questionnaires were answered. Data processing with SEM-PLS. And measurement with a 5 point Likert scale with 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

4. Results and Discussion

Descriptif Analysis Variable Contextual Learning (X)

Table 1. Descriptif Analysis Variable Contextual Learning (X)

| Indicator | Minimum | Maximum | Average | Std. Deviation |
|--|---------|---------|---------|----------------|
| Learning method SCL, Inquiry-Discovery and Cooperative learning (X1.1) | 0 | 1,00 | 3,867 | 0,666 |

In the Contextual Learning (X) indicator, it is known that the minimum value is 2, the maximum value is 5, the average value (mean) is 3.867, and the standard deviation value is 0.666.

Table 2. Descriptif Analysis Variable Achievement learning (Y1)

| Indicator | Minimum | Maximum | Average | Std. Deviation |
|---------------------------|---------|---------|---------|----------------|
| Achievement learning (Y1) | 2,00 | 5,00 | 3,714 | 0,781 |

In the Achievement learning indicator (Y1), it is known that the minimum value is 2, the maximum value is 5, the average value (mean) is 3.714, the standard deviation value is 0.781.

Table 3. Descriptif Variable Learning Outcome (Y2)

| Indicator | Minimum | Maximum | Average | Std. Deviation |
|-----------------------------------|---------|---------|---------|----------------|
| Basic knowledge (Y2.1) | 1,00 | 5,00 | 4,029 | 0,753 |
| Analysis & problem solving (Y2.2) | 1,00 | 5,00 | 4,133 | 0,621 |
| Modern technical learning (Y2.3) | 3,00 | 5,00 | 4,000 | 0,604 |
| Improvement learning (Y2.4) | 1,00 | 5,00 | 4,133 | 0,785 |
| Cooperation (Y2.5) | 3,00 | 5,00 | 4,343 | 0,569 |

Descriptif Analysis Variable Competency (Y3)

Table 4. Descriptif Variable Competency (Y3)

| Indicator | Minimum | Maximum | Average | Std. Deviation |
|-----------------|---------|---------|---------|----------------|
| Competency (Y3) | 2,00 | 5,00 | 4,257 | 0,772 |

In the Competency Indicator (Y3), it is known that the minimum value is 2, the maximum value is 5, the average value (mean) is 4.257, and the standard deviation value is 0.772.

4.1. Construct Reliability Validity test results

Evaluation of the validity of the measurement model can be done by looking at the results of the factor load estimates. A variable is said to have good validity to the construct or latent variable if the load is greater than the critical value (≥ 1.96) and/or the standard factor load is 0.50. While the evaluation of the reliability of the measurement model in PLS can use Construct Reliability (CR 0.70) and Average Variance Extracted (AVE) 0.50 (Solimun, et al. 2020). The recapitulation of the results of the evaluation of validity and reliability can be seen in the following table:

Table 5. Construct Validity & Reliability Summary (Outer Model)

| Latent Variable | Observed Variable | Partial Validity (Per Indicator) | | Rank | OverAll validity (Per construct) | | Composite Reliability (CR > 0,7) | |
|---------------------------|-------------------|----------------------------------|-------|------|----------------------------------|------------|----------------------------------|-------------|
| | | (LF > 0,5=Valid) | | | (AVE > 0,5=Valid) | | CR | Description |
| | | Outer Loading | Inf | | AVE | Conclusion | | |
| Contextual Learning (X) | X1.1 | 1,000 | Valid | 1 | 1,000 | Valid | 1,000 | Reliable |
| Achievement learning (Y1) | Y1.1 | 1,000 | Valid | 1 | 1,000 | Valid | 1,000 | Reliable |
| Learning Outcome (Y2) | Y2.1 | 0,844 | Valid | 2 | 0,642 | Valid | 0,899 | Reliable |
| | Y2.2 | 0,756 | Valid | 4 | | | | |
| | Y2.3 | 0,784 | Valid | 3 | | | | |
| | Y2.4 | 0,866 | Valid | 1 | | | | |
| | Y2.5 | 0,747 | Valid | 5 | | | | |
| Competency (Y3) | Y3.1 | 1,000 | Valid | 1 | 1,000 | Valid | 1,000 | Reliable |

Based on the table above, it can be seen that the entire reflective indicator value Loading factor 0.50 (Valid), and the AVE value 0.50 (Valid) so that all indicators that measure it are declared valid, while the results of the reliability calculation show that the Composite Reliability value (CR) 0.70 (Reliable). Thus, it can be concluded that all these latent variables have good and proper indicators.

In addition to evaluating the indicators of Convergent Validity, it is also necessary to test with Discriminant Validity, where the measurement model is assessed based on cross loading measurements with constructs. If the correlation of the construct with the main measurement of each indicator is greater than the other constructs, then the latent construct is able to predict the indicator better than the other constructs.

Table 6. Test Cross Loading (*Discriminant Validity*)

| Variable | Contextual Learning (X) | Achievement Learning (Y1) | Learning Outcome (Y2) | Competency (Y3) |
|----------|-------------------------|---------------------------|-----------------------|-----------------|
| X1.1 | 1,000 | 0,240 | 0,526 | 0,235 |
| Y1.1 | 0,240 | 1,000 | 0,508 | -0,005 |
| Y2.1 | 0,487 | 0,521 | 0,844 | 0,450 |
| Y2.2 | 0,299 | 0,317 | 0,756 | 0,429 |
| Y2.3 | 0,454 | 0,285 | 0,784 | 0,350 |
| Y2.4 | 0,402 | 0,470 | 0,866 | 0,434 |
| Y2.5 | 0,452 | 0,396 | 0,747 | 0,344 |
| Y3.1 | 0,235 | -0,005 | 0,504 | 1,000 |

4.2. Hypothesis Testing (*Path Analysis*)

This section deals with the evaluation of the coefficients or parameters that indicate a causal relationship or the effect of one latent variable on another latent variable. A causal relationship is declared insignificant if the critical ratio (C.R.) is between the ranges of -1.96 and 1.96 with a significance level of 0.05. With the help of the PLS program application, the results of the critical ratio estimation of the structural model are obtained. In summary, the results of the calculation of these coefficients are presented in the following table:

Table 7. Results Path Analysis SEM-PLS

| Influence Between Latent Variable | | | H | Path Coefficient | t-value | p-value | Conclusion |
|-----------------------------------|---|---------------------------|----------------|------------------|---------|---------|-------------------------|
| Cause Var. | → | Consequence Var. | | | | | |
| Contextual Learning (X) | → | Achievement learning (Y1) | H ₁ | 0,240 | 3,095 | 0,002 | H ₁ accepted |
| Contextual Learning (X) | → | Learning Outcome (Y2) | H ₂ | 0,321 | 3,758 | 0,000 | H ₂ accepted |
| Contextual Learning (X) | → | competency (Y3) | H ₃ | 0,235 | 2,612 | 0,009 | H ₃ accepted |
| Achievement Learning (Y1) | → | Learning Outcome (Y2) | H ₄ | 0,433 | 5,986 | 0,000 | H ₄ accepted |
| Competency (Y3) | → | Learning Outcome (Y2) | H ₅ | 0,430 | 5,714 | 0,000 | H ₅ accepted |

It is known that the Contextual Learning (X) variable has a positive influence on Achievement learning (Y1), meaning that the higher Contextual Learning (X) the result will be an increase in the Achievement learning variable (Y1), where the Path coefficient obtained is 0.24 with a t-value of 3,095. Because the t-value is greater than the critical value ($3.095 > 1.96$), the statistical hypothesis states that H₁ is accepted, meaning that the Contextual Learning (X) variable has a significant influence on the Achievement learning variable (Y1).

It is known that the Contextual Learning (X) variable has a positive influence on Learning Outcome (Y2), meaning that the higher Contextual Learning (X) the result will be an increase in the Learning Outcome variable (Y2), where the Path coefficient obtained is 0.321 with a t-value of 3.758. . Because the t-value is greater than the critical value ($3.758 > 1.96$), the statistical hypothesis states that H₂ is accepted, meaning that the Contextual Learning (X) variable has a significant effect on the Learning Outcome variable (Y2).

It is known that the Contextual Learning (X) variable has a positive influence on Competence (Y3), meaning that the higher the Contextual Learning (X) the result will be an increase in the Competence variable (Y3), where the Path coefficient obtained is 0.235 with a t-value of 2.612. Because the t-value is greater than the critical value ($2.612 > 1.96$), the statistical hypothesis states that H₃ is accepted, meaning that the Contextual Learning (X) variable has a significant effect on the Competence variable (Y3).

It is known that the Achievement learning variable (Y1) has a positive influence on Learning Outcome (Y2), meaning that the higher Achievement learning (Y1), the result will be an increase in the Learning Outcome variable (Y2), where the Path coefficient obtained is 0.433 with a t-value of 5.986 . Because the t-value is greater than the critical value ($5.986 > 1.96$), the statistical hypothesis states that H₄ is accepted, meaning that the Achievement learning variable (Y1) has a significant influence on the Learning Outcome variable (Y2).

It is known that the Competency variable (Y3) has a positive influence on Learning Outcome (Y2), meaning that the higher the Competence (Y3), the result will be an increase in the Learning Outcome variable (Y2), where the Path coefficient obtained is 0.43 with a t-value of 5.714. . Because the t-value is greater than the critical value (5.714 > 1.96), the statistical hypothesis states that H5 is accepted, meaning that the Competence variable (Y3) has a significant effect on the Learning Outcome variable (Y2).

The path coefficients in the structural model as well as the weight value of the manifest variable factors in the measurement model can be described through the path diagram of the measurement model and the structural model below.

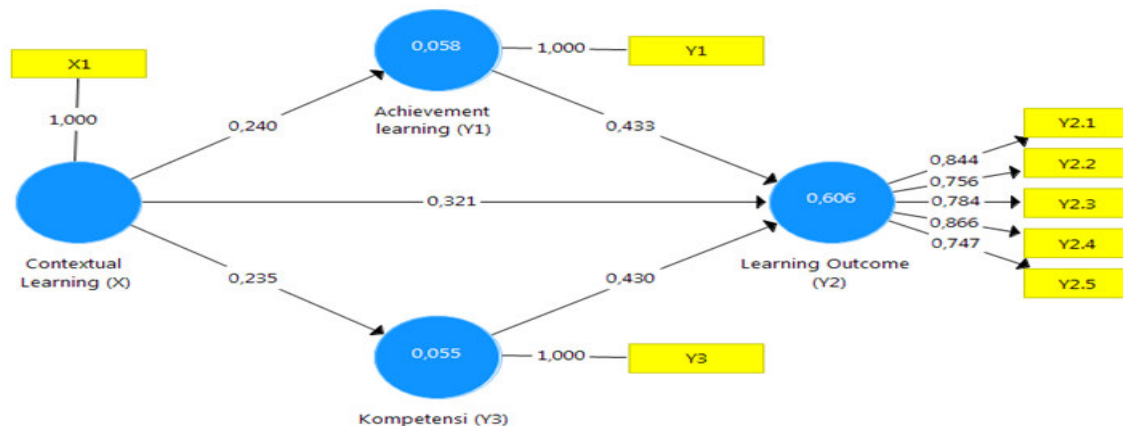


Figure 2. Result Path Diagram

$$Y2 = 0,321 X + 0,433 Y1 + 0,430 Y2$$

$$Y1 = 0,240 X$$

$$Y3 = 0,235 X$$

Based on the Path Diagram above, it can be seen that the most dominant variable in influencing Learning Outcome (Y2) is Achievement learning (Y1) with the highest path coefficient of 0.433, while Achievement learning (Y1) is more dominantly influenced by Contextual Learning (X) of 0.240, where the Contextual Learning (X) variable in this study is proxied (represented) on the measurement of the SCL, Inquiry-Discovery and Cooperative learning (X1.1) learning methods, so that the value of the loading factor in the construction of the Contextual Learning (X) variable is 1,000 or 100%, it means that the measurement of Contextual Learning (X) variable is fully represented by the measurement of SCL, Inquiry-Discovery and Cooperative learning (X1.1) learning methods. Thus, if the management wants to increase the value of the Learning Outcome (Y2) variable from Contextual Learning (X) through Achievement learning (Y1), statistical recommendations as material for evaluating strategic policies, especially regarding key indicators that need to be prioritized for improvement are the measurement of the SCL learning method, Inquiry-Discovery and Cooperative learning (X1.1).

4.3. Analysis of Mediation Variables (Indirect Effect)

The analysis of the mediating variable can be done through two approaches, namely the difference in coefficients and the multiplication of the coefficients. The coefficient difference approach uses an examination method by analyzing with and without involving mediating variables. While the multiplication method is carried out by the Sobel method. In this case, the detection is done by using the coefficient multiplication approach and the Sobel test. After going through the analysis process, the results of the coefficient multiplication are known as described below.

Table 8. Indirect influence between latent variables

| Indirect influence | H | Count | Results | t-count | p-value | Description |
|--|----------------|--------------|---------|---------|---------|-------------------------|
| Contextual Learning (X) on Learning Outcome (Y2) through Achievement learning (Y1) | H ₆ | 0,24 x 0,433 | 0,104 | 2,716 | 0,007 | H ₆ accepted |
| Contextual Learning (X) on Learning Outcome (Y2) through competency (Y3) | H ₇ | 0,235 x 0,43 | 0,101 | 2,239 | 0,026 | H ₇ accepted |

Based on the table above, it can be seen that the indirect influence of latent variables on the intended latent variables is as follows:

1. The indirect effect of Contextual Learning (X) on Learning Outcome (Y2) through Achievement learning

(Y1) is 0.104 with a t value of 2.716 > 1.96 (Significant).

- The indirect effect of Contextual Learning (X) on Learning Outcome (Y2) through Competence (Y3) is 0.101 with a t value of 2.239 > 1.96 (Significant).

From these results it can be concluded that the two mediating variables, namely Achievement learning (Y1) and Competence (Y3) are declared capable of mediating the effect of Contextual Learning (X) on Learning Outcomes (Y2).

4.4. Correlation Analysis

The results of the correlation analysis between latent variables are as in the following table.

Table 9. Latent Variable Correlations

| | X1 | Y1 | Y2.1 | Y2.2 | Y2.3 | Y2.4 | Y2.5 | Y3 |
|------|-------|-------|-------|-------|-------|-------|-------|-------|
| X1 | 1,000 | 0,240 | 0,487 | 0,299 | 0,454 | 0,402 | 0,452 | 0,235 |
| Y1 | 0,240 | 1,000 | 0,521 | 0,317 | 0,285 | 0,470 | 0,396 | 0,005 |
| Y2.1 | 0,487 | 0,521 | 1,000 | 0,568 | 0,550 | 0,644 | 0,538 | 0,450 |
| Y2.2 | 0,299 | 0,317 | 0,568 | 1,000 | 0,487 | 0,633 | 0,386 | 0,429 |
| Y2.3 | 0,454 | 0,285 | 0,550 | 0,487 | 1,000 | 0,628 | 0,531 | 0,350 |
| Y2.4 | 0,402 | 0,470 | 0,644 | 0,633 | 0,628 | 1,000 | 0,542 | 0,434 |
| Y2.5 | 0,452 | 0,396 | 0,538 | 0,386 | 0,531 | 0,542 | 1,000 | 0,344 |
| Y3 | 0,235 | 0,005 | 0,450 | 0,429 | 0,350 | 0,434 | 0,344 | 1,000 |

Based on the table above, it can be seen the correlation between research variables. In general, all of the correlation values above are positive, meaning that the higher the causal variable, the higher the effect variable.

5. Discussion

This research is about the effect of contextual teaching-learning on the basis of student centered learning, inquiry and discovery learning to improve competency, student achievement and learning outcomes with the findings showing a significant effect of contextual teaching-learning on competency, achievement and learning outcomes as well as achievement learning and competency is successful as a mediating variable in the effect of contextual teaching-learning on learning outcomes with a significant effect. This research supports the results of previous studies, including Nuraya, 2020; Afriani 2018; Auliya 2012; TIB 2017; Zahrani 2019; Aprilia 2019; Apriyanti 2015; Aqib 2015; Erickson 2001; Prabawanto 2017; Debora 2012; Pujani 2017; Osman 2018; Kula 2013; Gosong 2008; Hamruni 2015; Hartoyo 2009; Hasibuan 2014; Erwin 2018; Nail 2016; Liu 2020; Indrayati 2017; Indrayati 2019; Indrayati 2021; Indrayati 2020; Indriani 2017; Jauhari 2011; Johnson 2007; Hannum 2010; Kadir 2013; Amin 2011; Komalasari 2012; Lider 2018; Manao 2013; Muhlisin 2012; Muslim 2009; Nilasari 2018; Novitasari 2014; Nuzul 2014; Putra 2017; Budiharti 2010; Manik 2013; Saputra 2017; Sariyani 2012; Emilia 2012; Sudana 2019; Sakti 2014; Bettye 2006; Suarjana 2017; Mertesari 2005; Sufianto 2019; Sugiarti 2012; Suhartono 2018; Surdin 2018; Susialita 2016; Susila 2013; Tantu 2018; Tilaar 2019; Trianto 2014; Dantes 2014; Martini 2015; Desyandri 2019).

6. Conclusion and Implication

The conclusion of this study is that the contextual teaching-learning method has a significant effect on learning achievement, learning outcomes and competency. And competency and achievement learning are successful as mediating variables that significantly affect contextual teaching-learning on learning outcomes. The implication of this research is that contextual teaching-learning can improve learning achievement, student competence and learning outcomes in learning Accounting Information Systems courses at the State Polytechnic of Malang for the better.

7. Limitations and Recommendations

The limitation of this study is that the population is only in the System . course Accounting Information at the State Polytechnic of Malang with a sample of 196 students. For future research is expected to add samples in the same study with different subjects to be able to generalize the results of this study.

References

- Adim, M., Herawati, E.S.B., & Nuraya, N. (2020). The effect of the contextual learning model (CTL) using media scores on interest in learning science in fourth grade elementary school. *Journal of Physics and Science Education (JPFS)*, 3(1), 6–12. <http://journal.unucirebon.ac.id/index.php/jpfs/article/view/76>
- Afriani, A. (2018). Contextual Learning (Contextual Teaching and Learning) and Student Concept

- Understanding. *Journal of Al-Muta'aliyah* STAI Darul Kamal NW Kembang Clam. <http://ejournal.kopertais4.or.id/sasambo/index.php/mutaaliyah/article/view/3005>
- Akmil, Auliya. Etc. Implementation of CTL in understanding students' mathematical concepts. Vol. 1 No. 1 (2012) : *Journal of Mathematics Education* p. 24-29
- Al-Tabany, T.I.B. (2017). Designing innovative, progressive, and contextual learning models. *Prenada Media*.
- Aningsih, A., & Zahrani, M. (2019). Increasing students' understanding of concepts in science subjects through the application of contextual teaching and learning (CTL) models. *Pedagogy (Journal of Primary School Education)*, 7(1), 48–56. <http://jurnal.unismabekasi.ac.id/index.php/pedagogic/article/view/1790>
- Aprilia, D.A., et al. (2019). Influence of Contextual Close In improving Narrative Writing skill. *Pulpit PGSD Undiksha*, 7. <http://dx.doi.org/10.23887/jjggsd.v7i3.19400>
- Apriyanti, et al. Development of Contextual Teaching and Learning (CTL)-Based Modules Equipped with Audio Visual Media to improve High School Students' Physics Learning Outcomes. *Proceedings of the National Physics Seminar (E-Journal)* (2015). Volume IV, October 2015
- Aqib, Z. (2015). Models, Media, and Contextual Learning Strategies (innovative). Bandung: Yrama Widya.
- Berns, Robert G., and Patricia M. Erickson., *Contextual Learning: Preparing Students For the New Economy* (2001), Spotlight Zone Research @work.
- Crawford, M (2001), 'Contextual Teaching and Learning: Strategies for Creating Constructivist Classrooms', *National Technology Preparation Network*, vol. 11, no. 6, pp. 1-6.
- D. Selvianiresa and S. Prabawanto, (2017)“A Contextual Learning Approach to Mathematics in Elementary Schools”, in *Journal of Physics: Conference Series*, 2017.
- Debora, S.N., The Influence of Contextual Teaching And Learning (CTL) Learning Models on Students' Chemistry Learning Outcomes in the Principal Language of Colloid System Class XI Methodist High School Lubuk Pakam T.A 2011/2012 (2012), *Thesis*, FMIPA Unimed, Medan.
- Dewi, NLP.R., Suastra, IW, & Pujani, NM (2017), ‘Effectiveness of Contextual Science Practicum Modules for Improving Science Process Skills and Environmental Care Characters’, *SHS Web of Conferences*, vol. 42, no. 00037, p. 1-6.
- E. Suryawati and K. Osman, (2018) “Contextual learning: An innovative approach to the development of scientific attitudes and students' science performance,” *Eurasia J. Math. science. technology. Education*.
- Elliot, John (1991), *Action Research for Educational Change*, Philadelphia, Open University Press.
- Ginting, Kula. Application of Contextual Teaching and Learning Models to Improve Social Studies Activities and Learning Outcomes for Class V Students at SD Negeri 060885 Medan. *Thematic Journal*, Volume : 003/No.12/DIKSAS/December 2013.
- Gosong, (2008). "Application of the Contextual Teaching and Learning (CTL) Approach to Help Students Understand Basic Concepts of Discourse in Learning Indonesian Language Discourse" *Scientific Journal of Education and Learning* "Vol. 4 No. 2 Page 869
- Hamruni. (2015). Basic Concepts and Implementation of Contextual Learning. Institutional Repository UIN Sunan Kalijaga Yogyakarta, 12. <https://doi.org/10.14421/jpai.2015.122-04>
- Hartoyo, H. (2009). Application of competency-based contextual learning model to improve learning effectiveness. *Journal of Education: Learning Innovation Research*, 39(1), 67–78. <https://doi.org/10.21831/jk.v39i1.233>
- Hasibuan, M. I. (2014). CTL (contextual teaching and learning) learning model. *Logarithms: Journal of Educational Sciences and Science*, 2(01). <https://doi.org/10.24952/logaritma.v2i01.214>
- Hasruddin, M. Y. Nasution, and S. Rezeqi, “Application of Contextual Learning to Improve Critical Thinking Ability of Students in Biology Teaching and Learning Strategies Class,” *Int. J. Learn. Teach. Educ. Res.*, vol. 11, no. 3, 2015.
- Herlina Erwin (2018) Application of Contextual Approaches to Increase Student Interest and Learning. *Achievement in Science Lessons of Basic Education Journal* Volume 4, Number 1, April 2018 6)
- Hosnan, M. (2014), *Scientific and Contextual Approaches in 21st Century Learning*, Bogor: Ghalia Indonesia.
- Ilhan, Nail et al., The Effect of Context-based Chemical Equilibrium on Grade 11 Students' Learning, Motivation and Constructivist Learning Environment (2016), *International Journal of Environment & Science Education*, Vol. 11, No. 9
- Ilyas, I., & Liu, A. N. A. M. (2020). The effect of based e-learning contextual approach on student learning motivation. *Journal of Science Education Research*, 6(2), 184. <https://doi.org/10.29303/jppipa.v6i2.425>
- Indrayati, (2017), The Implementation of Paikem based on Project Based Learning and Cooperative Learning, *IOSR* vol 22 (7version 12), 37-43, 2017.
- Indrayati, (2020), Implementation Discussion Learning in Learning Accounting Information System Course at state Polytechnic of Malang, *Journal of Education and Practice* Vol 11 no 36, page 81-87, 2020.
- Indrayati, (2021), An Innovative Learning in Accounting Information System Course Using Discovery Learning and Project Based learning at State Polytechnic of Malang, Indonesia, *palArch's journal of Archaeology of*

- Egypt Vol 18 NO 4, 6958-6970, 2021.
- Indrayati, Basuki Rachmat, Apit Miharso, (2020), Analysis of The Effect Between Paikem Implementation to The Competency, Quality, Efficiency and Effectiveness of Learning, *Test Engineering and management* Vol 82 , 12332-12341, 2020.
- Indrayati. (2019), The Effect of Implementing Paikem using Student-Centered-Learning, Case Based Learning and Cooperative Learning on Learning Efficiency and Effectiveness. *Erudio Journal of Educational Innovation* Vol 6 No 1, page 83-94, 2019.
- Indrayati. (2021), Implementation of Discovery Learning method for Enhance learning achievement student Accounting Practice Manufacturing in Accounting Department State Polytechnic of Malang, *International journal of Science Academic Research* Vol 2 No 3, 1220-1222, 2021.
- Indriani, R. (2017). The activities of teachers and students in learning mathematics using contextual teaching and learning (CTL) in elementary schools. *Pendas : Scientific Journal of Basic Education*, 2(2). <https://doi.org/10.23969/jp.v2i2.841>
- J. Moleong, M.A (2015), *Qualitative Research Methodology*. Publisher PT Teen Rosdakarya Bandung, Indonesia.
- Jauhari, M., *PAIKEM Implementation* (2011), Achievement Pustakaraya, Jakarta.
- Johnson, EB (2002). *Contextual Teaching and Learning: What It Was and Why It Still Exists*. California USA: Corwin Press. Inc.
- Johnson, EB (2007). *Contextual learning: Make learning activities fun and meaningful*. Mizan Learning Center.
- Juniar & Hannum. (2010). Application of the CTL Approach in Weblog-based E-Learning to Improve Student Learning Outcomes in the Subject of Reaction Rate. *Journal of the State University of Medan*; Medan.
- Kadir, A. (2013). The concept of contextual learning in schools. *Dynamics of Science: Journal of Education*, 13(1). <https://doi.org/10.21093/di.v13i1.20>
- Kamaruddin, NKM, bt Jaafar., N, Amin, Zn (2011), 'A study of the effectiveness of the contextual approach to teaching and learning statistics at the University Tun Hussein Onn Malaysia (UTHM)', *US-China Education Review A*, vol . 1, pp. 13-9.
- Komalasari, K. (2010). *Contextual Learning: Concepts and Applications*. Bandung: Refika Aditama.
- Komalasari, K. (2012). The Effect of Contextual Learning in Civic Education on Students' Civic Skills. *International Journal for Educational Studies*, 4(2), 179-190.
- Lider, G. (2018). The Influence of Contextual Learning Approach Containing Cultural Values and National Character on Learning Outcomes in terms of Educators' Democratic Attitudes. *Indonesian Values and Character Education Journal*, 1. <http://dx.doi.org/10.23887/ivcej.v1i1.20301>
- Manao, H. (2013). *The Influence of Contextual Teaching and Learning (CTL) Approach to Problem Solving Ability and Mathematical Critical Thinking Ability of Junior High School Students* (Doctoral Dissertation, UNIMED).
- Muhlisin, A. (2012). Development of Integrated Science Learning Devices Based on Contextual Teaching and Learning (CTL) with Cooperative Learning Model Type Student Teams Achievement Division (STAD) with Air Pollution Theme. *Journal of Educational Research and Evaluation*, 1(2), 139-145.
- Muslim. (2009). *Competency-Based and Contextual Learning*. Jakarta: Bumi Aksara.
- Nilasari, E., et al. (2018). Contextual-Based Thematic Learning at Sd Muhammadiyah 9 Malang. *Journal of Social Studies Learning Theory and Practice*. *Journal of Social Studies Learning Theory and Practice*, 3. 10.17977/um022v3i12018p019
- Novitasari, A. T. (2014). Development of Critical and Creative Thinking in Economic Learning with Contextual Teaching and Learning Models. *In Proceedings of the National Seminar* (Vol. 9) in May 9, 2015.
- Nurhadi (2003), *Contextual Learning and Its Application in KBK*, State University of Malang, Malang.
- Nuzul, A. (2014). Contextual teaching and learning effectiveness for increasing ability of open economic understanding *Journal of Economics and Business Education* (JPEB), 2(2), 27. <https://doi.org/10.21009/JPEB.002.2.2>
- Pujiasih, E. (2020). Building a golden generation with variations of online learning during the covid-19 pandemic. *Ideguru: Journal of Teacher Scientific Work*, 5(1), 42–48. <https://doi.org/10.51169/ideguru.v5i1.136>
- Purwanto, A., Pramono, R., Asbari, M., Hyun, C. C., Wijayanti, L. M., & Putri, R. S. (2020). An exploratory study of the impact of the COVID-19 pandemic on the online learning process in elementary schools. *EduPsyCouns: Journal of Education, Psychology and Counseling*, 2(1), 1–12. <https://ummaspul.ejournal.id/Edupsycounts/article/view/397>
- Putra, F. G. (2017). Experimental Hands On Activity (HoA) Assisted Contextual Approach on Mathematical Problem Solving Ability. Al-Jabar: *Journal of Mathematics Education*, 8 (1). <https://doi.org/10.24042/ajpm.v8i1.1148>
- R. Budiharti, Learning Physics with a CTL (Contextual Teaching and Learning) Approach through the

- Demonstration Method, National Seminar on Biological Education of FKIP UNS 2010
- San, S, Ristiati, P, Manik, W (2013), 'The Influence of Peer Tutor Assisted Contextual Learning Models on Biology Learning Outcomes Viewed from Learning Motivation', *E-Journal of Ganesha Education University Graduate Program*, vol.3, no.1, pp. 1-10.
- Saputra, W. D. (2017). The Influence of Contextual Approaches on Social Studies Learning Outcomes for Fifth Grade Students of SD Negeri 1 Gondangrejo. *Thesis Final Project*. Department of Education, University of Lampung. <http://dx.doi.org/10.23960/jpp>
- Sariani, N. L. A. (2018). The Influence of the Tri Kaya Parisudha Oriented CTL Learning Model on Mathematics Learning Outcomes of Class III Students. *Journal of Education Technology*, 2, 95–102. <http://dx.doi.org/10.23887/jet.v2i3.16372>
- Satriani, I., & Emilia, E. (2012). Contextual teaching and learning approach to teaching writing. *Indonesian Journal of Applied Linguistics*, 2(1) 10-20.
- Setiawan, P & Sudana, I. D. N. (2019). Application of Contextual Learning Model to Improve Mathematics Learning Outcomes. *Scientific Journal of Teacher Professional Education*, 2. <http://dx.doi.org/10.23887/jippg.v1i2.16397>
- Singaraja. 4) Heri Permana Sakti (2014) contextual learning approach to increase interest in learning mathematics. *UNION: Journal of Mathematics Education Vol 2 No. 3, November 2014 5)*
- Smith, Bettye P. (2006). Contextual Teaching and Learning Practices in the Family and Consumer Sciences Curriculum. *Journal of Family and Consumer Sciences Education*. Vol. 24, No. 1
- Sri Mertesari, (2005). Improving the mastery of concepts and learning outcomes of children in biology in calculus I by applying contextual learning strategies with problem solving approaches. *Journal of Education and Teaching*. No.2 TH. XXXVIII. Pages 185-199. 8)
- Suarjana, I. M., et al. (2017). Application of Contextual Approach Assisted by Concrete Media to Improve Activities and Learning Outcomes. *International Journal of Elementary Education*. <http://dx.doi.org/10.23887/ijee.v1i2.11601>
- Sufianto. (2019). The effect of contextual teaching and learning (CTL) learning model on the ability of concept understanding class VII students of SMP 16, Kota Bengkulu. *Jurnal Pendidikan Matematika Raflesia*, 4(1), 19–28. doi: 10.33449/jpmr.v4i1.7525.
- Sugiarti, S. B. (2012). The Influence of Contextual Learning Model on Critical Thinking Ability of Class XI IA Students of SMA Negeri 3 Watansoppeng. *Chemica Journal*, 13(1), 77-83.
- Suhartono, E. (2018). Changes in the contextual pattern of civics learning patterns to contextual patterns (CTL). *Journal of Social Studies Learning Theory and Practice*, 3(1), 1–12. <https://doi.org/10.17977/um022v3i12018p001>
- Surdin. (2018). The effect of contextual teaching and learning (CTL) models on learning outcomes of social sciences of the material of forms the face of the earth on Class VII of Junior High School. *International Journal of Education and Research*, 6(3), 57–64.
- Susialita, T. (2016). The Development of Audio-visual Student Portfolios (LKS) Contextual Teaching and Learning-based (CTL) on Sound Chapter of Science Subject for Deaf Students. *Jurnal Pendidikan IPA Indonesia*, 5(2), 192-198.
- Susila, et al. (2013). The Effect of Contextual Learning Approach on Civics Learning Outcomes in terms of Student Interest. *E-Journal of Ganesha University of Education Postgraduate Program*, 3. <https://media.neliti.com/media/publications/119774-ID-elektron-approach-pembelajaran-konteks.pdf>
- Tantu, Y. R. P. (2018). The application of contextual learning to improve critical thinking skills of grade xi students in chemistry lessons at UPH College The implementation of contextual teaching and learning to increase critical thinking of grade 11 students studying chemistry. *Polyglot: Scientific Journal*, 14(2), 209. <https://doi.org/10.19166/pji.v14i2.1051>
- Tilaar, A. L. (2019). The Effectiveness of Contextual Learning in Teaching Mathematics. *Formative Journal*, 1, 186–191. <http://dx.doi.org/10.30998/formatif.v1i3.72>
- Trianto (2014), *Designing Innovative, Progressive, and Contextual Learning Models: Concepts, Foundations, and Implementation in the 2013 Curriculum (Integrative Thematic Curriculum/TKI)*, Prenadamedia Group, Jakarta.
- Trianto. (2007). *Constructivistic Oriented Innovative Learning Models*. Jakarta: Prest Akmil, Auliya. Etc. Implementation of CTL in Improving Students' Understanding of Mathematical Concepts. Vol. 1 No. 1 (2012) : *Journal of Mathematics Education* p. 24-29
- Wayan Sukreni, I Wayan Lasmawan, Nyoman Dantes (2014) Contextual learning approach in group B *eJournal Postgraduate Program at Ganesha University of Education Basic Education Study Program* (Volume 4)
- Wulandari, L., Van Hayus, E. S., & Martini, K. S. (2015). Application of Contextual Teaching and Learning (CTL) Learning Approach to Improve Critical Thinking Ability and Student Achievement in Colloidal System Principal Material Class XI Science 2 Even Semester SMA Negeri Gondangrejo 2013/2014

- Academic Year. *Journal of Chemical Education*, 4(1), 144-150.
- Yesya, D. P., & Desyandri, D. (2019). The effect of using the contextual teaching and learning (CTL) model in PKN learning in elementary schools. *E-Journal of Innovation Learning, Scientific Journal of Basic Education*, 1(1).
- Ztürk, A, Doğanay, A (2019), 'Development of Argumentation Skills through Socioscientific Issues in Science Course: A Collaborative Action Research', *Turkish Online Journal of Qualitative Inquiry*, vol. 10, No. 1, pp. 52-89.