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IMPLEMENTATION OF THE CONTEXTUAL TEACHING AND LEARNING (CTL) MODEL IN INCREASING LEARNING MOTIVATION WITH SELF-REGULATED LEARNING AS A MODERATING VARIABLE

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ABSTRACT
This study aims to examine the effect of implementing the Contextual Teaching and Learning (CTL) model on improving student learning motivation by looking at the role of SRL in supporting or moderating the effect of both. This study is a quasi-experimental study using a 2x3 factorial design. In this design, data on student learning motivation was obtained through a questionnaire taken from the Motivated Strategies for Learning Questionnaire (MSLQ). Meanwhile, to measure the level of students' self-regulated learning, an instrument from the Development and Validation of Academic Self-Regulated Learning Questionnaire (ASLQ) was used. To test the effect between the dependent and independent variables and the effect of the moderating variable, a data analysis technique was used, namely two-way analysis of variance (Two-Way Anova). The subjects in this research comprised students in classes XD and XE at Edu Global School High School. The findings revealed that the CTL learning model was able to increase student learning motivation compared to the conventional learning model. The positive effect of CTL on learning motivation was strengthened by the support of Self-Regulated Learning (SRL). With good SRL, students can manage their learning process independently, set goals, and organize learning strategies, making learning more effective and significantly increasing learning motivation.

Key words: CTL; Learning Motivation; Self-Regulated Learning

INTRODUCTION

Advances in the modern era require individuals to have knowledge and skills in order to compete in the era of globalization. Education plays an important role in equipping individuals with relevant competencies, both in terms of academics and social, emotional, and practical skills (Usman et al., 2024). To achieve this goal, teachers need to create an active, creative, and enjoyable learning process through a variety of learning models (Alpian et al., 2019). Learning motivation is an important factor that influences student engagement and perseverance in learning. According to Bakar (2014), motivation is related to how individuals choose, strive, and persevere in an activity. Cook & Artino (2016) define motivation as a process that initiates and maintains goal-oriented activities. Filgona et al. (2020) emphasize that motivation determines how much students learn from their academic activities. Motivation is divided into two types: intrinsic—an internal drive to obtain personal satisfaction—and extrinsic—an external drive such as rewards or praise (Deci et al., 1999). The principles of learning motivation include encouraging learning activities, emphasizing intrinsic motivation, prioritizing praise over punishment, relating to learning needs, and fostering an optimistic attitude (Jainiyah et al., 2023). Pintrich et al. (1991) also proposed five aspects of motivated strategies for learning: values, expectations, affective, cognitive and metacognitive strategies, and resource management. Rahman (2022) research shows that learning motivation has a positive effect on economic learning outcomes.

However, facts in the field show that student learning motivation is still low due to monotonous and uninteresting learning methods (Napitupulu et al., 2024). One solution that can be used to increase learning motivation is the Contextual Teaching and Learning (CTL) model. This model connects lesson material with the real-life context of students (Febriyanti et al., 2023; Sung et al., 2022). Johnson (in Lago & Cruz, 2021) explains CTL as a holistic system that includes eight main components, including meaningful connections, self-regulated learning, critical and creative thinking, and authentic assessment. The CTL steps consist of seven syntaxes: constructivism, inquiry, learning community, questioning, modeling, reflection, and authentic assessment (Rusman, 2013). CTL has been proven to increase learning motivation (Alpian et al., 2019; Rafzan et al., 2024; Wati, 2015), although some studies show insignificant results (Rahmawati et al., 2019), indicating inconsistency in findings.

The novelty of this study lies in the addition of self-regulated learning (SRL) as a moderating variable to explain how CTL affects learning motivation. SRL is the ability of students to regulate the learning process independently, covering cognitive, motivational, and emotional aspects (Panadero, 2017). Based on Zimmerman's model (in Panadero, 2017), SRL consists of three main phases: forethought (planning), performance (implementation), and self-reflection. Students with high SRL tend to be more motivated because they focus on the learning process, not just the results (Ilishkina et al., 2022). In line with the opinion of Howse et al. (in Fauzia & Widjajanti, 2018), SRL has been proven to increase student motivation and learning

achievement. Thus, the application of the CTL model supported by SRL skills is expected to significantly and sustainably increase student learning motivation.

METHOD

This study is a quantitative study utilizing a quasi-experimental method. The method applied is a 2x3 factorial design. The variable affected in this research is learning motivation, while the independent variable, which is the treatment, which refers to the Contextual Teaching Learning (CTL) framework, and the moderator variable is the level of self-regulated learning. This study uses a Posttest Only Control Design, where there are two groups selected randomly (R). The first group is given treatment, which is the use of the CTL model (X), while the second group is not given treatment. In this design, data on student learning motivation was obtained through a questionnaire taken from the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 1991) (Pintrich et al., 1991). Meanwhile, to measure the level of self-regulated learning of students, an instrument from the Development and Validation of Academic Self-Regulated Learning Questionnaire (ASLQ) (Nambiar et al., 2022) was used. The questionnaire used was a closed questionnaire containing statements with answer choices provided by the researcher. The research sample consisted of class X D with 12 students in the experimental group and class X E with 10 students as the control class. The technique for analyzing data was two-way analysis of variance (Two-Way Anova). In experimental research, it is used to test the main and interaction effects. The main effect refers to the direct influence of the independent variable (CTL or Self-Regulated Learning Model) on the dependent variable (Learning Motivation). Meanwhile, the interaction effect is the joint effect of two independent variables (CTL*Self-Regulated Learning Model) on the dependent variable (Learning Motivation). The testing was conducted using the ANOVA method with the help of the SPSS version 25.0 program.

RESULTS AND DISCUSSION

The descriptive analysis found that the experimental class with CTL showed higher learning motivation, especially at the high SRL level, although the variation in learning motivation was greater in groups with more students. The following is a summary of the descriptive analysis according to the 2x3 factorial design.

Table 1. Summary of Descriptive Analysis Results

Group	Mean	Standard Deviation	Number of Students
A_1B_1	130	-	1
A_1B_2	178,333	9,585	6
A_1B_3	199,667	5,859	3
A_2B_1	113,667	12,662	3
A_2B_2	151,125	18,689	8
A_2B_3	191	-	1

Source: Research results, 2024 (Data processed)

Based on Table 5, which illustrates the outcomes of descriptive evaluation, it is evident that there are variations in student learning motivation within both the experimental and control groups at various levels of self-regulated learning (SRL). In the experimental class employing the Contextual Teaching Learning (CTL) framework, the average learning motivation score tended to be higher, with the high SRL group (A_1B_3) having an average score of 199.667, while the medium SRL group (A_1B_2) had an average score of 178.333. The low SRL group (A_1B_1) had only one student with a score of 130, so the standard deviation was not calculated. On the other hand, in the control class that used the conventional learning model, the average learning motivation score was lower, with the low SRL group (A_2B_1) having an average of 113.667, and the medium SRL group (A_2B_2) having an average of 151.125. The high SRL group (A_2B_3) only had one student with a score of 191, with no standard deviation calculated because the group consisted of only one student.

Next, a Two-Way ANOVA test was conducted. Two-Way ANOVA is a statistical method used to test the effect of two factors (independent variables) on one dependent variable (response variable) simultaneously. The following table demonstrates the findings of the two-way ANOVA test using SPSS.

Table 2. *Two Way Anova* Test

Dependent Variable: **Learning Motivation**					
Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Corrected Model	27662.455[a]	19	1455.919	647.075	.002
Intercept	597005.861	1	597005.861	265335.938	.000
Model	5776.000	1	5776.000	2567.111	.000
SRL	4421.417	17	260.083	115.593	.009
Model*SRL	841.000	1	841.000	373.778	.003
Error	4.500	2	2.250		
Total	641559.000	22			

Corrected Total	27666.955	21

a. R Squared = 1.000 (Adjusted R Squared = .998)

Source: Research results, 2024 (Data processed)

Based on the table above, the Corrected Model has a Sig. value of 0.002 (< 0.05), which means that the variation in learning motivation can be explained by a combination of these factors. In other words, this model is effective overall in increasing learning motivation. The Sig. value for the Intercept is 0.000, indicating that student learning motivation has a significant basis even without the influence of the CTL or SRL learning models. Thus, the Intercept results show that students have significant basic learning motivation, which can then be further enhanced by applying the CTL model and SRL skills.

The Sig. value in the Model has a Sig. value of 0.000, which is smaller than alpha (0.05). This significance value suggests that the application of the Contextual Teaching Learning (CTL) model significantly affects student learning motivation. It can be concluded that the use of the CTL method is effective in increasing learning motivation. The Sig. value of 0.009 in SRL shows that students' Self-Regulated Learning abilities significantly affect learning motivation. With a significance value of 0.009 (Sig < 0.05), this means that the better students are at regulating their own learning process, the higher their learning motivation. Furthermore, the interaction between the Model (CTL) and SRL shows that there is a significant interaction between the CTL model and SRL in influencing student learning motivation. The significance value of 0.003 (Sig. < 0.05) indicates that the effectiveness of the CTL model is influenced by the level of students' SRL. Students with high SRL benefit more from the application of the CTL model than students with low SRL.

The application regarding the Contextual Teaching and Learning (CTL) framework has been proven to significantly increase student learning motivation (Aziz & Munif Shaleh, 2019). Research shows that students who learn with the CTL model have higher learning motivation than students who are taught with conventional methods—as many as 40% of students in the experimental class showed high motivation, while in the control class, none did. The CTL model helps students understand material contextually by relating lessons to real-life situations, making learning more relevant, interesting, and meaningful. This approach also fosters intrinsic motivation, as students feel challenged, satisfied, and actively involved in learning activities such as discussions and exploration. Statistical test results (Two-Way ANOVA, Sig. < 0.05) confirm that CTL has a significant effect on learning motivation compared to conventional methods. Overall, CTL creates an active, contextual, and meaningful learning process, which encourages students to be more enthusiastic and responsible for their learning.

Self-Regulated Learning (SRL) is a crucial ability that plays a major role in increasing student learning motivation. SRL refers to an individual's ability to plan, organize, and evaluate their own learning process (Widiatmoko & Herlina, 2021). Research shows that SRL skills has a substantial effect on the motivation of students' learning. According to the findings descriptive analysis, 45% of students with high SRL levels have high learning motivation, while students with low SRL tend to have low learning motivation (Widiatmoko & Herlina, 2021). This shows that the ability to independently manage the learning process is positively correlated with internal motivation to continue learning and achieve academic success. SRL abilities include aspects of learning planning, time management, selection of effective learning strategies, and the ability to reflect and evaluate oneself. Students with high SRL are able to set clear learning goals before starting learning activities, divide the material into smaller parts, and develop an effective study schedule (Widiatmoko & Herlina, 2021). When students feel they can control their learning process, they develop confidence and satisfaction, which increases their learning motivation. In addition, students with high SRL are able to choose learning strategies that suit their needs. They can identify difficult parts of the material and allocate more time to understand those parts. For example, they look for additional sources, discuss with friends, or ask for explanations from teachers. This process shows that SRL helps students stay motivated even when faced with difficulties (Widiatmoko & Herlina, 2021). In the context of learning motivation, intrinsic motivation—the drive to learn for personal satisfaction and self-development—is more dominant in students with high SRL. This is because they are able to set clear goals, plan how to achieve them, and monitor their progress, which ultimately fosters a sense of accomplishment and personal satisfaction (Widiatmoko & Herlina, 2021). In addition, self-efficacy or self-confidence also plays an important role in linking SRL and learning motivation. According to Bandura (in Puspitaningsih, 2014), students who are confident in their ability to manage the learning process tend to have higher motivation because they believe that their efforts will produce positive results. SRL skills reinforce this belief by giving students the tools to plan, manage their time, and evaluate their learning progress. When students see positive results from their efforts, their self-confidence and motivation increase.

SRL skills also help students manage their emotions during the learning process. Students who are skilled in SRL are better able to cope with anxiety and fear of failure because they have clear learning plans and strategies for dealing with challenges. Conversely, students who are less skilled in SRL often lose motivation when faced with difficulties (Widiatmoko & Herlina, 2021). In addition, self-evaluation is an important part of SRL that plays a role in maintaining learning motivation. Students who can reflect on the learning process and evaluate the results tend to be more satisfied and motivated to continue trying. Self-evaluation helps students see progress, improve weaknesses, and adjust their learning strategies (Azmi et al., 2024). Thus, students feel they have greater control over their learning outcomes, which strengthens their intrinsic motivation. Overall, Self-

Regulated Learning (SRL) has a significant impact on student learning motivation. With the ability to plan, organize, and evaluate the learning process, students become more confident, independent, and focused on academic goals. Students with high SRL are able to overcome learning difficulties and maintain motivation in the long term, which ultimately contributes to improved academic achievement (Azmi et al., 2024; Puspitaningsih, 2014; Widiatmoko & Herlina, 2021).

Learning models exert a considerable impact on student motivation. The Contextual Teaching and Learning (CTL) model has been proven to increase motivation by linking lesson material to real life, making learning more relevant and meaningful (Sung et al., 2022). The success of CTL is also influenced by Self-Regulated Learning (SRL) skills, which are students' abilities to plan, monitor, and evaluate their own learning processes (Panadero, 2017). Students with high SRL tend to be more motivated, confident, and able to overcome learning challenges (Ilishkina et al., 2022). They can make optimal use of CTL because they are able to set goals, strategies, and reflect on their learning well. Conversely, students with low SRL find it more difficult to take advantage of contextual learning and tend to be passive and less confident. Thus, SRL acts as a moderating factor that determines the extent to which the CTL model can increase learning motivation. Research shows that strengthening SRL skills is important to maximize the positive impact of CTL (Lago & Cruz, 2021). Teachers need to integrate SRL training through reflection, planning, and self-evaluation activities so that students can learn more independently and be more motivated. Overall, the combination of the CTL model and SRL development creates more effective and relevant learning that can continuously improve students' intrinsic motivation and learning outcomes.

CONCLUSION

From the results and discussion presented, it can be summarized that the Contextual Teaching Learning (CTL) model is better at increasing student motivation than the conventional learning model. The positive effect of CTL on learning motivation is even stronger reinforced by Self-Regulated Learning (SRL) abilities. With good SRL, students can manage their learning process independently, set goals, and organize learning strategies, making learning more effective and significantly increasing learning motivation. This study can help teachers and important figures in the world of education to produce more effective learning by applying the Contextual Teaching Learning (CTL) model and encouraging the development of Self-Regulated Learning (SRL) skills in students. With the integration of these two aspects, students should be capable of learn independently, be more confident, and have high motivation to face learning challenges. For further research, it is recommended that a more in-depth exploration be conducted regarding the variations in the application of Contextual Teaching Learning (CTL) in various subjects and levels of education to see the consistency of its influence on student learning motivation. In addition, research can broaden its focus by examining the role of external factors such as parental support, learning environment, and educational technology in strengthening Self-Regulated Learning (SRL) skills.

REFERENCES

Alpian, Y., Anwar, A. S., & Puspawati, P. (2019). Pengaruh Model Pembelajaran Contextual Teaching and Learning (Ctl) Terhadap Motivasi Belajar Siswa. *Jurnal Basicedu*, *3*(3), 894–900. https://jbasic.org/index.php/basicedu/article/view/174

Aziz, A., & Munif Shaleh. (2019). Variasi Metode Pembelajaran Dan Peningkatan Motivasi Belajar Siswa. *Edupedia*, *4*(1), 87–94. https://doi.org/10.35316/edupedia.v4i1.529

Azmi, B., Fatmasari, R., & Jacobs, H. (2024). Aulad : Journal on Early Childhood Motivasi , Disiplin , Lingkungan Sekolah : Kunci Prestasi Belajar. *Aulad: Journal on Early Childood*, *7*(2), 323–333. https://doi.org/10.31004/aulad.v7i2.654

Bakar, R. (2014). the Effect of Learning Motivation on Student'S Productive Competencies in Vocational High School, West Sumatra. *International Journal of Asian Social Science*, *4*(6), 2226–5139. http://www.aessweb.com/journals/5007

Cook, D. A., & Artino, A. R. (2016). Motivation to learn: an overview of contemporary theories. *Medical Education*, *50*(10), 997–1014. https://doi.org/10.1111/medu.13074

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A Meta-Analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation. *Psychological Bulletin*, *125*(6), 622–688. https://doi.org/10.1007/978-3-031-04166-2_16

Fauzia, A., & Widjajanti, D. B. (2018). Self-regulated learning: the effect on student's mathematics achievement. *Journal of Physics: Conference Series*, *1097*(1), 1–7. https://doi.org/10.1088/1742-6596/1097/1/012139

Febriyanti, N. D., Hartati, S. J., & Setiawan, W. (2023). Pengaruh Pedekatan Contextual Teaching and Learning (CTL) terhadap Motivasi Belajar Siswa Kelas X Tanwirul Hija pada Materi Trigonometri. *JKIP : Jurnal Kajian Ilmu Pendidikan*, *3*(2), 123–129.

Filgona, J., Sakiyo, J., Gwany, D. M., & Okoronka, A. U. (2020). Motivation in Learning. *Asian Journal of Education and Social Studies*, *10*(4), 16–37. https://doi.org/10.9734/ajess/2020/v10i430273

Ilishkina, D. I., de Bruin, A., Podolskiy, A. I., Volk, M. I., & van Merriënboer, J. J. G. (2022). Understanding self-regulated learning through the lens of motivation: Motivational regulation strategies vary with

students' motives. *International Journal of Educational Research*, *113*(June 2021), 1–14. https://doi.org/10.1016/j.ijer.2022.101956

Jainiyah, J., Fahrudin, F., Ismiasih, I., & Ulfah, M. (2023). Peranan Guru Dalam Meningkatkan Motivasi Belajar Siswa. *Jurnal Multidisiplin Indonesia*, *2*(6), 1304–1309. https://doi.org/10.58344/jmi.v2i6.284

Lago, J. M. L., & Cruz, R. A. O. Dela. (2021). Linking to the real world: Contextual teaching and learning of statistical hypothesis testing. *Lumat*, *9*(1), 597–621. https://doi.org/10.31129/LUMAT.9.1.1571

Napitupulu, R. B., Manalu, G. J., Nababan, A., Simbolon, E. T., Simorangkir, N., Pendidikan, J., Kristen, A., Agama, I., & Negeri, K. (2024). Pengaruh Model Pembelajaran Contextual Teaching and Learning Terhadap Motivasi Belajar PAK dan Budi Pekerti Siswa Kelas XI SMA Negeri 2 Sibolga Tahun Pembelajaran 2023 / 2024. *Tri Tunggal: Jurnal Pendidikan Kristen Dan Katolik*, *2*(2), 81–97.

Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology*, *8*, 1–28. https://doi.org/10.3389/fpsyg.2017.00422

Pintrich, P. R. R., Smith, D., Garcia, T., & McKeachie, W. (1991). A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ). *Ann Arbor. Michigan*, *48109*(August 2016), 1259. https://doi.org/ED338122

Puspitaningsih, F. (2014). Pengaruh Efikasi Diri dan Pengetahuan Kewirausahaan terhadap Minat Berwirausaha Melalui Motivasi. *Jurnal Ekonomi Pendidikan Dan Kewirausahaan*, *2*(2). http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI

Rafzan, R., Rizal, B. T., & Roswati, R. D. (2024). Pengaruh Model Contextual Taching and Learning (CTL) terhadap Motivasi Belajar PPKn Siswa Sekolah Dasar di SD. *Edukatif : Jurnal Ilmu Pendidikan*, *6*(5), 6099–6110. https://doi.org/10.31004/edukatif.v6i5.7635

Rahman, S. (2022). Pentingnya Motivasi Belajar Dalam Meningkatkan Hasil Belajar Siswa. *Prosiding Seminar Nasional Pendidikan Dasar*. https://doi.org/10.59246/alfihris.v2i3.843

Rahmawati, A., Nuraeni, N., & Hasim, H. (2019). Model Pembelajaran Contextual Teaching Learning Terhadap Motivasi Belajar Mahasiswa Program Studi Pendidikan Agama Universitas Islam Syekh Yusuf Tangerang. *Islamika*, *13*(2), 62–70. https://doi.org/10.33592/islamika.v13i2.346

Rusman. (2013). *Model-Model Pembelajaran: Mengembangkan Profesionalisme Guru*. RajaGrafindo Persada.

Sung, H. Y., Hwang, G. J., Chen, C. Y., & Liu, W. X. (2022). A contextual learning model for developing interactive e-books to improve students' performances of learning the Analects of Confucius. *Interactive Learning Environments*, *30*(3), 470–483. https://doi.org/10.1080/10494820.2019.1664595

Usman, A. T., Nasrullah, Y. M., Hidayatulloh, W., & Masripah. (2024). Pengaruh Model Pembelajaran Contextual Teaching and Learning (Ctl) Terhadap Motivasi Belajar Siswa Pada Mata Pelajaran Sejarah Kebudayaan Islam. *JIIC: Jurnal Intelek Insan Cendikia*, *1*(6). https://jicnusantara.com/index.php/jiic/article/view/789%0Ahttps://jicnusantara.com/index.php/jiic/article/download/789/884

Wati, N. M. (2015). Pengaruh Penerapan Model Contextual Teaching And Learning Terhadap Motivasi Belajar Ipa Siswa Kelas V SD Negeri 1 Kebondalem Lor. *Basic Education*, *4*(11), 6.

Widiatmoko, M., & Herlina, I. (2021). Studi Deskriptif Profil Self-Regulated Learning Siswa. *Jurnal Selaras*, *4*(1), 43–50. https://doi.org/10.25215/0403.131