

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 samples in this study were students in classes XD and XE at Edu Global School High School. The results showed 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

Advancements in the modern era demand that individuals possess adequate knowledge and skills to remain competitive in the context of globalization. In this regard, education plays a crucial role in preparing individuals with relevant competencies, not only in academic aspects but also in social, emotional, and practical domains (Usman et al., 2024). To support this objective, teachers are expected to design learning experiences that are active, engaging, and enjoyable by utilizing diverse instructional models (Alpian et al., 2019). Learning motivation is a key factor that affects students' participation and persistence in the learning process. Bakar (2014) explains that motivation is closely related to how individuals make choices, exert effort, and sustain their involvement in an activity. Similarly, Cook & Artino (2016) describe motivation as a process that initiates and sustains goal-directed behavior. Filgona et al. (2020) further highlight that motivation influences the extent to which students benefit from their academic experiences. Motivation can be categorized into intrinsic motivation, which arises from internal satisfaction, and extrinsic motivation, which is driven by external factors such as rewards or recognition (Deci et al., 1999). The principles of learning motivation include stimulating learning activities, prioritizing intrinsic motivation, emphasizing rewards over punishment, aligning with learners' needs, and fostering a positive mindset (Jainiyah et al., 2023). In addition, Pintrich et al. (1991) identify five components of motivated learning strategies: value, expectancy, affective factors, cognitive and metacognitive strategies, and resource management. Rahman (2022) also found that learning motivation positively influences students' achievement in economics.

However, evidence from the field indicates that students' learning motivation remains relatively low, largely as a result of teaching approaches that are repetitive and less engaging (Napitupulu et al., 2024). One alternative strategy to address this issue is the implementation of the Contextual Teaching and Learning (CTL) approach, which links instructional content to students' real-life experiences (Febriyanti et al., 2023; Sung et al., 2022). Johnson (in Lago & Cruz, 2021) describes CTL as a comprehensive learning system comprising several key elements, such as meaningful connections, self-directed learning, critical and creative thinking, and authentic assessment. The implementation of CTL follows seven main stages, namely constructivism, inquiry, learning community, questioning, modeling, reflection, and authentic assessment (Rusman, 2013). A number of studies have shown that CTL can enhance students' learning motivation (Alpian et al., 2019; Rafzan et al., 2024; Wati, 2015), Nevertheless, other research has reported non-significant effects (Rahmawati et al., 2019), suggesting that findings in this area are still inconsistent.

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 with a quasi-experimental design. The design used is a 2x3 factorial design. The dependent variable in this study is learning motivation, while the independent variable, which is the treatment, is the contextual teaching learning (CTL) model, 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 as the experimental class and class X E with 10 students as the control class. The data analysis technique used 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 ₁ B ₁	130	-	1
A ₁ B ₂	178,333	9,585	6
A ₁ B ₃	199,667	5,859	3
A ₂ B ₁	113,667	12,662	3
A ₂ B ₂	151,125	18,689	8
A ₂ B ₃	191	-	1

Source: Research results, 2024 (Data processed)

Based on Table 5, which presents the results of descriptive analysis, it can be seen that there are variations in student learning motivation in the experimental class and control class at various levels of self-regulated learning (SRL). In the experimental class using the Contextual Teaching Learning (CTL) model, the average learning motivation score tended to be higher, with the high SRL group (A₁B₃) having an average score of 199.667, while the medium SRL group (A₁B₂) had an average score of 178.333. The low SRL group (A₁B₁) 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 (A₂B₁) having an average of 113.667, and the medium SRL group (A₂B₂) having an average of 151.125. The high SRL group (A₂B₃) 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 shows the results 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 indicates 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 of the Contextual Teaching and Learning (CTL) model 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 competency that significantly contributes to enhancing students' learning motivation. SRL can be understood as an individual's capacity to plan, manage, and evaluate their own learning activities (Widiatmoko & Herlina, 2021). Empirical findings indicate that SRL has a strong influence on motivation levels. Descriptive analysis shows that 45% of students with high SRL also demonstrate high learning motivation, whereas those with lower SRL tend to exhibit lower motivation (Widiatmoko & Herlina, 2021). This suggests that the ability to independently regulate one's learning is positively associated with internal drive and academic achievement. SRL encompasses several key components, including goal setting, time management, the use of appropriate learning strategies, and self-reflection. Students with strong SRL skills are able to establish clear objectives before beginning their studies, break down learning materials into manageable parts, and create structured study plans (Widiatmoko & Herlina, 2021). When learners feel in control of their learning process, they tend to develop greater confidence and satisfaction, which in turn strengthens their motivation. Moreover, students with high SRL are capable of selecting strategies that align with their learning needs. They can recognize challenging topics and allocate additional time and effort to better understand them, for instance by seeking extra resources, engaging in discussions with peers, or consulting teachers. This demonstrates that SRL enables students to remain motivated even when encountering difficulties. 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. Additionally, self-efficacy plays a key role in linking SRL with motivation. According to Albert Bandura (in Puspitaningsih, 2014), students who believe in their ability to manage their learning tend to

be more motivated, as they expect their efforts to yield positive outcomes. SRL strengthens this belief by equipping students with the skills needed to plan, regulate time, and evaluate their learning progress, ultimately leading to increased confidence and sustained motivation.

SRL competencies also enable students to regulate their emotional responses throughout the learning process. Learners with strong SRL skills are generally more capable of managing anxiety and fear of failure, as they possess structured plans and effective strategies to challenges. In contrast, students with lower levels of SRL are more likely to lose motivation when they encounter difficulties. 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).

Instructional models play a crucial role in shaping students' learning motivation. The Contextual Teaching and Learning (CTL) approach, for instance, has been shown to enhance motivation by connecting academic content with real-life situations, thereby making learning more meaningful and relevant (Sung et al., 2022). However, the effectiveness of CTL is also closely related to students' Self-Regulated Learning (SRL) abilities, which involve planning, monitoring, and evaluating their own learning processes (Panadero, 2017). Students who possess strong SRL skills are generally more motivated, confident, and capable of dealing with academic challenges (Ilishkina et al., 2022). They are able to maximize the benefits of CTL because they can set clear goals, choose appropriate strategies, and reflect effectively on their learning experiences. On the other hand, students with lower SRL levels often struggle to engage with contextual learning, tending to be more passive and less confident. Therefore, SRL functions as a moderating variable that influences how effectively the CTL model can improve learning motivation. Previous studies suggest that strengthening SRL is essential to optimize the positive effects of CTL (Lago & Cruz, 2021). In this context, teachers are encouraged to incorporate SRL-oriented activities, such as planning, reflection, and self-evaluation, into the learning process. By doing so, students can develop greater independence and higher motivation in their learning. In conclusion, integrating the CTL approach with the development of SRL skills leads to more effective and meaningful learning experiences, which in turn can sustainably enhance students' intrinsic motivation and academic achievement.

CONCLUSION

Based on the presentation of results and discussion, it can be concluded 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 with the support of Self-Regulated Learning (SRL) skills. 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 are expected to be able to 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 Childhood*, 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 Pendekatan 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 Teaching 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>