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Constructivist Learning Theory in Relation to Teacher Teaching Skills: Evidence from Suburban Secondary Schools in Melaka

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Abstract

Constructivist Learning Theory (CLT) emphasises active knowledge construction through meaningful engagement, social interaction, and contextualised learning. This study examines the relevance of CLT in understanding the relationships among student engagement, learning environment, student motivation, and technology integration towards teacher teaching skills in suburban secondary schools in Melaka. The findings indicate each variable positively influences teaching skills: engaged students, supportive learning environments, motivated learners, and effective technology use enable teachers to implement constructivist strategies more effectively. This study contributes to theoretical and practical knowledge by linking CLT principles with teaching practice and provides recommendations for enhancing teacher competencies in suburban educational settings.

1. Introduction

Constructivist Learning Theory (CLT) posits learning is an active and socially mediated process, where learners construct knowledge by connecting new information to prior experiences and real-world contexts (Piaget, 1970; Vygotsky, 1978). Unlike traditional teacher-centred pedagogies, CLT emphasises learner autonomy, inquiry, collaboration, and reflection, positioning teachers as facilitators of learning rather than mere knowledge transmitters (Kharroubi and ElMediouni, 2024). The theory underscores the significance of social interaction and contextual learning, arguing knowledge is co-constructed through dialogue, exploration, and scaffolding provided by teachers or peers (Rachmad, 2025).

Instructional challenges in suburban school may include limited engagement, diverse learning abilities, varying levels of student motivation, and restricted access to technology and educational resources (Kormos, 2022). These challenges can hinder the effectiveness of teaching and learning processes if traditional, teacher-centred approaches are employed. CLT offers a framework to address these challenges by promoting student-centred practices engage learners actively, create meaningful learning environments, and encourage reflective thinking. Through constructivist strategies, teachers can better facilitate learning, guide students in solving real-world problems, and cultivate higher-order thinking skills (Gradini et al. 2025).

Moreover, technology integration plays a crucial role in constructivist learning by providing tools support collaboration, exploration, and problem-solving (Ramaila and Molwele, 2022). Mobile applications, digital simulations, and interactive platforms enable learners to engage in active knowledge construction while allowing teachers to implement innovative instructional strategies (Tan et al. 2021). Suburban secondary schools which

may face resource limitations, can particularly benefit from technology-enhanced constructivist approaches, ensuring students remain motivated, engaged, and actively involved in their learning (Kuznetsov, 2025).

Finally, CLT provides a strong theoretical lens for examining how student engagement, learning environment, motivation, and technology integration collectively influence teacher teaching skills. Understanding these relationships is crucial for developing effective teaching strategies, promoting professional growth, and improving student learning outcomes in suburban school contexts.

2. Student Engagement and Teacher Teaching Skill

From a constructivist perspective, student engagement is a fundamental condition for meaningful learning (Al Abri et al. 2024), as learners must actively participate in constructing knowledge rather than passively receiving information (Allen, 2022). The findings indicate student engagement significantly influences teacher teaching skills in suburban secondary schools. When students demonstrate high levels of behavioural, emotional, and cognitive engagement, teachers are encouraged to adopt interactive instructional approaches such as questioning, collaborative activities, and inquiry-based learning (Gillies, 2023). This aligns with CLT's assertion teaching effectiveness is shaped through continuous interaction between learners and teachers (Zhang et al. 2024).

Furthermore, engaged students provide immediate feedback to teachers through their participation, responses, and learning behaviours (Irons and Elkington, 2021). This feedback enables teachers to reflect on and refine their instructional strategies, thereby strengthening their teaching skills (Zhang and Hyland, 2022). Constructivist classrooms rely heavily on such feedback loops, where teachers observe students' learning processes and adjust scaffolding accordingly (Ozkan, 2022). Student engagement in suburban context may be inconsistent due to varying academic backgrounds, constructivist approaches allow teachers to personalise instruction and enhance their pedagogical competence (Chummongkol et al. 2025).

In addition, student engagement fosters a dynamic classroom environment supports professional growth among teachers (Monteiro et al. 2021). When students actively participate, teachers are more likely to experiment with innovative teaching strategies, moving beyond traditional lecture-based methods (Cherukuri, 2025). This process enhances teachers' confidence, adaptability, and classroom management skills. Consistent with CLT, engaged learners not only benefit from improved learning experiences but also contribute to the development of more effective teaching practices (Al Abri et al. 2024). Findings suggest student engagement and teacher teaching skills share a reciprocal relationship. Constructivist theory posits effective teaching encourages engagement, while engaged learners further enhance teaching quality (Jumaah, 2024). This bidirectional relationship underscores the importance of designing learning activities actively involve students, particularly in suburban secondary schools where sustaining engagement is critical for instructional success.

3. Learning Environment and Teacher Teaching Skill

Learning environment is a central component of Constructivist Learning Theory, as knowledge construction occurs through interaction with both social and physical contexts (Wibowo at al. 2025). The findings indicate a supportive and structured learning environment significantly contributes to teacher teaching skills. Classrooms promote collaboration, mutual respect, and open communication allow teachers to implement constructivist strategies more effectively, such as group discussions, peer learning, and guided inquiry (Hamid et al. 2024).

A positive learning environment also enhances teachers' ability to provide scaffolding and differentiated instruction (Rusticus et al. 2023). Constructivist teaching requires teachers to recognise students' zones of proximal development and offer appropriate guidance to support learning progression (Rahman, 2024). The findings suggest teachers operating within conducive learning environments are better able to manage classroom interactions, monitor student progress, and adapt instructional strategies accordingly (Khasinah et al. 2024). This strengthens teachers' pedagogical and classroom management skills, particularly in diverse suburban school settings.

Moreover, when students feel psychologically safe and supported, they are more willing to participate actively, share ideas, and engage in collaborative tasks. This, in turn, enables teachers to practise and refine constructivist teaching skills (Al Abri et al. 2024). In suburban secondary schools, where classroom dynamics may vary widely, establishing a supportive learning environment is essential for effective constructivist instruction.

Finally, the findings highlight the learning environment influences teachers' instructional confidence and professional identity (Mukhalalati et al. 2024). Teachers who operate in positive and well-managed classrooms are more likely to demonstrate instructional creativity and reflective practice (Ashraf et al. 2022). This aligns with CLT's emphasis on the teacher's role as a facilitator who designs meaningful learning experiences rather than controlling the learning process (Harputra and Tambunan, 2024). Thus, the learning environment plays a crucial role in shaping teacher teaching skills through its impact on instructional practice and professional growth.

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4. Student Motivation and Teacher Teaching Skills

Student motivation is a key construct within constructivist pedagogy, as motivated learners are more likely to engage in deep learning and knowledge construction (Mishra, 2023). The findings of this study indicate student motivation has a significant relationship with teacher teaching skills. When students are intrinsically motivated, teachers are encouraged to design learning activities are challenging, meaningful, and relevant, thereby enhancing their instructional skills and creativity (Merdiaty and Sulistiasih, 2024).

From a constructivist standpoint, motivation is fostered through autonomy, competence, and social interaction (Kharroubi and ElMediouni, 2024). The findings suggest when teachers create learning environments that support these elements, students demonstrate greater willingness to participate and persist in learning tasks (Cayubit, 2022). This prompts teachers to adopt adaptive teaching strategies, such as differentiated instruction and formative feedback, which strengthen their pedagogical skills.

In addition, motivated students contribute to more productive classroom interactions, reducing disciplinary challenges and enabling teachers to focus on instructional quality (Abidin and Muhammad, 2024). Constructivist theory emphasises learning occurs through active engagement and reflection, both of which are more likely to occur in motivated learners (Alam, 2023). Consequently, teachers are better positioned to implement student-centred strategies to refine their teaching practices, particularly in suburban contexts where motivation levels may vary.

Furthermore, the findings suggest motivation and teaching skills influence one another in a cyclical manner. Effective teaching strategies enhance student motivation, while motivated students encourage teachers to innovate and improve their instructional approaches (Daniel et al. 2024). This reciprocal relationship supports CLT's assertion learning and teaching are interconnected processes, reinforcing the importance of fostering student motivation to enhance teacher teaching skills.

5. Technology Integration and Teacher Teaching Skills

Technology integration is increasingly recognised as a key enabler of constructivist learning, providing tools support exploration, collaboration, and problem-solving (Ramaila and Molwele, 2022). The findings indicate effective technology integration positively influences teacher teaching skills in suburban secondary schools. When teachers use technology as a cognitive and pedagogical tool, they are better able to design interactive and student-centred learning activities aligned with constructivist principles (Awidi, 2024).

From a constructivist perspective, technology facilitates experiential learning by allowing students to interact with content, simulate real-world scenarios, and collaborate beyond the classroom (Fitrianto and Saif, 2024). The findings suggest teachers who integrate technology effectively demonstrate enhanced instructional planning, classroom management, and assessment skills (Thelma et al. 2024). This is particularly important in suburban schools, where technology can help bridge gaps in learning resources and support diverse learning needs.

Moreover, technology integration encourages reflective teaching practices (Nurhidayat et al. 2024). Digital platforms provide teachers with real-time feedback on student participation and learning progress, enabling them to adjust instructional strategies accordingly (Josue et al. 2023). This aligns with CLT's emphasis on scaffolding and adaptive instruction. Teachers who engage with technology develop greater confidence and competence in facilitating constructivist learning, thereby strengthening their teaching skills (Lee et al. 2024).

Finally, when used effectively, technology enhances student engagement and motivation while supporting collaborative learning environments. This interconnected relationship underscores the role of technology as an integral component of constructivist teaching, contributing significantly to the development of teacher teaching skills in suburban secondary schools.

6. Contribution

This study reinforces Constructivist Learning Theory as a suitable framework for examining teaching and learning in suburban secondary schools. By explicitly linking student engagement, learning environment, motivation, and technology integration to teacher teaching skills, it provides a comprehensive understanding of how these variables interact within constructivist pedagogy. The study extends prior research by highlighting the contextual relevance of CLT in suburban education, particularly in Melaka, and emphasizes the role of constructivist strategies in enhancing teacher competencies.

Practically, the study offers guidance for teachers, school administrators, and policymakers. Teachers can implement strategies to enhance student engagement, motivation, and active participation. Creating supportive learning environments allows teachers to apply constructivist principles effectively, while integrating technology enables innovative and interactive instructional practices (Alam, 2023). The study highlights the importance of aligning teaching strategies with CLT principles to improve teaching effectiveness, particularly in suburban contexts with diverse learner needs and limited resources (Hamdoun, 2023).

Additionally, the findings inform professional development programmes. Training initiatives focus on constructivist-based pedagogy, classroom management, and technology integration can strengthen teacher competencies, leading to better learning outcomes.

7. Conclusion

Constructivist Learning Theory provides a robust framework for understanding how student engagement, learning environment, student motivation, and technology integration influence teacher teaching skills. The study demonstrates constructivist-oriented teaching practices contribute to enhanced instructional effectiveness in suburban secondary schools in Melaka. By fostering active, collaborative, and technology-enhanced learning environments, teachers can develop their professional skills while promoting positive learning experiences for students. CLT thus underscores the interconnectedness of learner engagement, motivation, environment, and technology in shaping effective teaching practices.

While this study contributes to theory and practice, several limitations exist. The research was conducted in suburban secondary schools in Melaka, which may limit generalisability to urban or rural contexts. Future studies could adopt comparative approaches to explore how CLT applies across different educational settings.

Declaration

We declare this manuscript is our original work and has not been submitted or published in any other journal. All authors have contributed significantly to the conception and completion of this study. Any remaining errors or oversights are entirely our own and occurred beyond our knowledge or observation.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of the paper.

Author Contribution

The authors are responsible for the study conception, research design, data collection, data analysis, result interpretation and manuscript drafting.

References

Abidin, Z., & Muhammad, N. (2024). Effective classroom management as a quick solution to improve student participation and motivation in the learning process. Zabags International Journal of Education, 2(2), 88-104. https://doi.org/10.61233/zijed.v2i2.22

Al Abri, M. H., Al Aamri, A. Y., & Elhaj, A. M. A. (2024). Enhancing student learning experiences through integrated constructivist pedagogical models. European Journal of Contemporary Education and E-Learning, 2(1), 130-149. https://doi.org/10.59324/ejceel.2024.2(1).11

Alam, M. A. (2023). From teacher-centered to student-centered learning: The role of constructivism and connectivism in pedagogical transformation. Journal of Education, 11(2), 154-167. https://cjoe.naspublishers.com/

Allen, A. (2022). An introduction to constructivism: Its theoretical roots and impact on contemporary education. Journal of Learning Design and Leadership, 1(1), 1-11. https://ldljournal.web.illinois.edu/wp-content/uploads/2022/09/Andrew-Allen-Constructivism_JLDL_Vol1Issue1September2022.pdf

Ashraf, M., Muhammad, Y., & Bokhari, T. B. (2022). Enhancing classroom management skills through critical reflection: A qualitative study of primary teachers. Journal of Educational Research and Social Sciences Review (JERSSR), 2(3), 105-114. https://ojs.jerssr.org.pk/index.php/jerssr/article/view/93/53

Awidi, I. T., & Paynter, M. (2024). An evaluation of the impact of digital technology innovations on students' learning: Participatory research using a student-centred approach. Technology, Knowledge and Learning, 29(1), 65-89. https://doi.org/10.1007/s10758-022-09619-5

Cayubit, R. F. O. (2022). Why learning environment matters? An analysis on how the learning environment influences the academic motivation, learning strategies and engagement of college students. Learning Environments Research, 25(2), 581-599. https://doi.org/10.1007/s10984-021-09382-x

Cherukuri, J. (2025). Beyond Lectures: Innovative Approaches to Promote Student Engagement Through Scenario-Based Learning (SBL). Journal of Engineering Education Transformations, 570-575. https://doi.org/10.16920/jeet/2025/v38is2/25083

Chummongkol, P., Tupsai, J., & Yuenyong, C. (2025). The Effect of Elementary School Size on Constructivism in Thailand. Journal of Research and Innovation for Sustainability (JRIS), 2(1), 58-79. https://so17.tci-thaijo.org/index.php/JRIS/article/view/591

Daniel, K., Msambwa, M. M., Antony, F., & Wan, X. (2024). Motivate students for better academic achievement: A systematic review of blended innovative teaching and its impact on learning. Computer Applications in Engineering Education, 32(4), e22733. https://doi.org/10.1002/cae.22733

Fitrianto, I., & Saif, A. (2024). The role of virtual reality in enhancing Experiential Learning: a comparative study of traditional and immersive learning environments. International Journal of Post Axial: Futuristic Teaching and Learning, 97-110. https://doi.org/10.59944/postaxial.v2i2.300

Gillies, R. M. (2023). Using cooperative learning to enhance students' learning and engagement during inquiry-based science. Education Sciences, 13(12), 1242. https://doi.org/10.3390/educsci13121242

Gradini, E., Noviani, J., & Ulya, K. (2025). Fostering higher-order thinking skills in mathematics education: Strategies, challenges, and classroom practices. Prisma Sains: Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram, 13(2), 135-163. https://doi.org/10.33394/j-ps.v13i2.15099

Hamdoun, W. M. A. (2023). Constructive alignment approach: Enhancing learning and teaching. British Journal of Multidisciplinary and Advanced Studies, 4(2), 162-170. https://doi.org/10.37745/bjmas.2022.0173

Hamid, S. H. B., Amin, E. F., & Khokhar, I. A. (2024). Constructing Collaborative Learning Environments: A Constructivist Approach to Curriculum Development. Multidisciplinary Journal of Emerging Needs of Curriculum, 1(1), 67-74. https://researchcorridor.org/index.php/MJENC/article/view/107/103

Harputra, Y., & Tambunan, E. E. (2024). The Role of Teachers as Facilitators in Managing Constructivist Classrooms: A Case Study on Students in the English Education Program. ETANIC Journal of English Language Teaching And Applied Linguistics, 2(2), 116-130. https://doi.org/10.55266/journaletanic.v2i2.416

Irons, A., & Elkington, S. (2021). Enhancing learning through formative assessment and feedback. Routledge. https://doi.org/10.4324/9781138610514

Josué, A., Bedoya-Flores, M. C., Mosquera-Quiñonez, E. F., Mesías-Simisterra, Á. E., & Bautista-Sánchez, J. V. (2023). Educational Platforms: Digital Tools for the teaching-learning process in Education. Ibero-American Journal of Education & Society Research, 3(1), 259-263. https://doi.org/10.56183/iberoeds.v3i1.626

Jumaah, F. M. (2024). Exploring constructivist learning theory and its applications in teaching English. The American Journal of Social Science and Education Innovations, 6(08), 7-19. https://doi.org/10.37547/tajssei/Volume06Issue08-02

Kharroubi, S., & ElMediouni, A. (2024). Conceptual review: cultivating learner autonomy through self-directed learning & self-regulated learning: a socio-constructivist exploration. International Journal of Language and Literary Studies, 6(2), 276-296. https://doi.org/10.36892/ijlls.v6i2.1649

Khasinah, S., Nurdin, S., & Panjaitan, A. M. (2024). Managing Classroom: Teachers' strategies And Challenges. Pionir: Jurnal Pendidikan, 13(2), 24-37. https://dx.doi.org/10.22373/pjp.v13i2.24134

Kormos, E. (2022). Technology as a facilitator in the learning process in urban high-needs schools: Challenges and opportunities. Education and Urban Society, 54(2), 146-163. https://doi.org/10.1177/00131245211004555

Kuznetsov, A. (2025). The Impact of Technology Integration on Student Engagement and Learning Outcomes in Secondary Education. https://doi.org/10.22541/au.174733546.60231616/v1

Lee, H. Y., Musa, N., Wong, Y. S., Nor, N. M., Mahsan, I. P., Wong, M. J., & Lee, H. L. (2024). Communication Technology-Enhanced Collaborative and Constructivism Learning in Improving Students' Skills on Artworks Production: A Structural Equation Modelling Approach. PaperASIA, 40(4b), 202-225. https://doi.org/10.59953/paperasia.v40i4b.176

Merdiaty, N., & Sulistiasih, S. (2024). Empowering Learning: The Mediating Role of Teachers in Enhancing Students' Intrinsic Motivation. Al-Ishlah: Jurnal Pendidikan, 16(4), 5163-5172. https://doi.org/10.35445/alishlah.v16i4.6430

Mishra, N. R. (2023). Constructivist approach to learning: An analysis of pedagogical models of social constructivist learning theory. Journal of research and development, 6(01), 22-29.

Monteiro, V., Carvalho, C., & Santos, N. N. (2021, June). Creating a supportive classroom environment through effective feedback: Effects on students' school identification and behavioral engagement. In Frontiers in Education (Vol. 6, p. 661736). Frontiers Media SA. https://doi.org/10.3389/feduc.2021.661736

Mukhalalati, B., Aly, A., Yakti, O., Elshami, S., Daud, A., Awaisu, A., ... & Austin, Z. (2024). Examining the perception of undergraduate health professional students of their learning environment, learning experience and professional identity development: a mixed-methods study. BMC Medical Education, 24(1), 886. https://doi.org/10.1186/s12909-024-05875-4

Nurhidayat, E., Mujiyanto, J., Yuliasri, I., & Hartono, R. (2024). Technology integration and teachers' competency in the development of 21st-century learning in EFL classroom. Journal of Education and Learning (EduLearn), 18(2), 342-349. https://doi.org/10.11591/edulearn.v18i2.21069

Özkan, E. Ç. (2022). Scaffolding as Teachers' Guidance Role in the Context of Constructivist Learning Approach. Journal of Educational Issues, 8(1), 399-419. https://eric.ed.gov/?id=EJ1344627

Rachmad, Y. E. (2025). Social Constructivism Theory. United Nations Economic and Social Council. https://doi.org/10.17605/osf.io/dhak5

Rahman, L. (2024). Vygotsky's zone of proximal development of teaching and learning in STEM education. International Journal of Engineering Research & Technology, 13(8), 389-94.

Ramaila, S., & Molwele, A. J. (2022). The Role of Technology Integration in the Development of 21st Century Skills and Competencies in Life Sciences Teaching and Learning. International Journal of Higher Education, 11(5), 9-17. https://doi.org/10.5430/ijhe.v11n5p9

Rusticus, S. A., Pashootan, T., & Mah, A. (2023). What are the key elements of a positive learning environment? Perspectives from students and faculty. Learning environments research, 26(1), 161-175. https://doi.org/10.1007/s10984-022-09410-4

Saleh, H., & Karim, N.A.K.A (2025). Impact of Mobile Computing and Gamification toward Teenagers Characteristic Development and Personality. ICTMT 2025 | International Journal of Research and Innovation in Social Science. https://doi.org/10.47772/IJRISS

Saleh, H., & Shahidan, N. S. (2023). Work Stress and Its Impact on Employee Performance, Turnover, and Absenteeism: A Comprehensive Study at E & E Manufacturing. International Journal of Magistravitae Management, 1(2), 70-80. https://doi.org/10.33019/ijomm.v1i2.13

Saleh, H., & Wahab, N. A. A. (2024a, December). Employers' Perspectives on Skills Falling Short, HEIs' Education System, and Graduates' Attributes. In 2024 International Conference on TVET Excellence & Development (ICTeD) (pp. 54-58). IEEE.

Saleh, H., & Wahab, N. A. A. (2024b). Employers' Perspectives Skills Matrix (EPSM): A Proposed Relationship Skill Matrix. International Journal of Academic Research in Business and Social Sciences, 14(9), 825-839. https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=10844675

Saleh, H., & Wahab, N. A. A. (2024c). Employers' Perspectives on Skills Falling Short, HEIs' Education System, and Graduates' Attributes: A Proposed Framework. International Journal of Academic Research in Business and Social Sciences, 14(8), 93-107. http://dx.doi.org/10.6007/IJARBSS/v14-i8/22119

Saleh, H., & Wahab, N. A. A. (2025). Employers' Perspectives on Malaysian Graduates' Skills: A Contemporary Study. Journal of TVET and Technology Review, 3(1), 16-23.

Tan, S. C., Chan, C., Bielaczyc, K., Ma, L., Scardamalia, M., & Bereiter, C. (2021). Knowledge building: Aligning education with needs for knowledge creation in the digital age. Educational Technology Research and Development, 69(4), 2243-2266. https://doi.org/10.1007/s11423-020-09914-x

Thelma, C. C., Sain, Z. H., Mpolomoka, D. L., Akpan, W. M., & Davy, M. (2024). Curriculum design for the digital age: Strategies for effective technology integration in higher education. International Journal of Research, 11(07), 185-201. https://doi.org/10.5281/zenodo.13123899

Wibowo, S., Wangid, M. N., & Firdaus, F. M. (2025). The Relevance of Vygotsky's Constructivism Learning Theory with the Differentiated Learning Primary Schools. Journal of education and learning (EduLearn), 19(1), 431-440. https://doi.org/10.11591/edulearn.v19i1.21197

Zhang, W., Cui, P., & Liu, Y. (2024). Constructivism in Action: Unraveling the Tapestry of Quality Education. Journal of Interdisciplinary Insights, 2(1), 25-35. https://doi.org/10.5281/zenodo.10903330

Zhang, Z. V., & Hyland, K. (2022). Fostering student engagement with feedback: An integrated approach. Assessing Writing, 51, 100586. https://doi.org/10.1016/j.asw.2021.100586