

**PENGEMBANGAN BAHAN AJAR BERBASIS CANVA AI UNTUK MENINGKATKAN
LITERASI MATEMATIS DAN MOTIVASI BELAJAR SISWA: A SYSTEMATIC
LITERATURE REVIEW**

Diajukan untuk Memenuhi Salah Satu Syarat
Memperoleh Gelar Magister Pendidikan (M.Pd)
pada Program Studi Pendidikan Matematika
Program Pascasarjana Universitas Pasundan



Oleh:

Feri Husada Susanto

NIM: 248060007

**PROGRAM STUDI PENDIDIKAN
MATEMATIKA SEKOLAH
PASCASARJANA UNIVERSITAS
PASUNDAN
BANDUN
G 2026**

QUOTES ISLAMI

يَا أَيُّهَا الَّذِينَ آمَنُوا إِذَا قِيلَ لَكُمْ تَفَسَّحُوا فِي الْمَجَالِسِ فَافْسَحُوا يَفْسَحِ اللَّهُ لَكُمْ وَإِذَا قِيلَ انشُرُوا فَانْشُرُوا يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنْكُمْ
وَالَّذِينَ أَوتُوا الْعِلْمَ دَرَجَاتٍ وَاللَّهُ بِمَا تَعْمَلُونَ خَبِيرٌ

*Yā ayyuhal-lazīna āmanū izā qīla lakum tafassahū fil-majālisi fafsahū yafsahillāhu lakum,
wa izā qīlansyuzū fansyuzū yarfa ‘illāhul-lazīna āmanū minkum, wal-lazīna ūtul- ‘ilma
darajāt(in), wallāhu bimā ta ‘malūna khabīr(un).*

"...Niscaya Allah akan mengangkat (derajat) orang-orang yang beriman di antaramu dan orang-orang yang diberi ilmu beberapa derajat..."
QS. Al-Mujadilah (58: 11)

QUOTES SUNDA

" Tungkul ka jukut, tanggah ka sadapan. Katresna jeung harepan geus manceran "

Sanggeus ngaliwatan rupa-rupa ujian di bangku S2, ayeuna waktuna neutep mangsa hareup anu caang gumilang ku élmu anu masagi.

Pengembangan Bahan Ajar Berbasis Canva AI untuk Meningkatkan Literasi Matematis dan Motivasi Belajar Siswa

Abstrak

Penelitian ini dilatarbelakangi oleh masih terbatasnya kajian komprehensif mengenai pemanfaatan bahan ajar berbasis Canva AI dalam meningkatkan literasi matematis dan motivasi belajar siswa. Tujuan penelitian ini adalah untuk mengidentifikasi, menganalisis, dan mensintesis temuan penelitian terkait efektivitas penggunaan Canva AI dalam pembelajaran matematika. Penelitian ini menggunakan metode systematic literature review (SLR) dengan tahapan identifikasi, penyaringan, kelayakan, dan inklusi terhadap artikel yang relevan. Sumber data diperoleh dari basis data ilmiah seperti Scopus, Google Scholar, dan ERIC dengan rentang publikasi tahun 2020–2026. Sebanyak 46 artikel terpilih dianalisis menggunakan instrumen lembar ekstraksi data dan kriteria inklusi-eksklusi yang telah ditetapkan. Hasil penelitian menunjukkan bahwa penggunaan bahan ajar berbasis Canva AI secara konsisten memberikan dampak positif terhadap peningkatan literasi matematis dan motivasi belajar siswa melalui penyajian visual yang interaktif, kontekstual, dan adaptif. Selain itu, integrasi teknologi ini juga mendorong keterlibatan aktif dan kemandirian belajar siswa. Dengan demikian, dapat disimpulkan bahwa bahan ajar berbasis Canva AI memiliki potensi yang signifikan sebagai inovasi pembelajaran untuk meningkatkan literasi matematis dan motivasi belajar siswa.

Kata kunci: Canva AI; Literasi Matematis; Motivasi Belajar; Pembelajaran Matematika; Systematic Literature Review.

Pamekaran Bahan Ajar Berbasis Canva AI pikeun Ningkatkeun Literasi Matematika jeung Motivasi Diajar Siswa

Abstrak

Panalungtikan ieu didadasaran ku masih saeutikna panalungtikan anu komprehensif ngeunaan pamakéan bahan ajar berbasis Canva AI pikeun ningkatkeun literasi matematika jeung motivasi diajar siswa. Tujuan panalungtikan ieu nyaéta pikeun ngaidentifikasi, nganalisis, jeung nyintésis hasil-hasil panalungtikan ngeunaan éféktivitas pamakéan Canva AI dina atikan matematika. Méthode *Systematic Literature Review* (SLR) digunakeun, ngawengku tahapan idéntifikasi, *screening*, penilaian kalayakan, sarta inklusi artikel nu relevan. Data dicokot tina pangkalan data akademik saperti Scopus, Google Scholar, jeung ERIC, pikeun périodeu publikasi taun 2020–2026. Aya 46 artikel nu dipilih sarta dianalisis ngagunakeun instrumén ékstraksi data jeung kritéria inklusi-éksklusi nu geus ditetepkeun. Hasilna nuduhkeun yén pamakéan bahan ajar berbasis Canva AI sacara konsistén méré dampak positif kana ningkatna literasi matematika jeung motivasi diajar siswa ngaliwatan tampilan visual anu interaktif, kontekstual, jeung adaptif. Salian ti éta, integrasi téhnologi ieu ngadorong partisipasi aktif jeung kamerdikaan diajar siswa. Ku kituna, bisa dicindekkeun yén bahan ajar berbasis Canva AI mibanda poténsi anu gedé salaku inovasi atikan pikeun ningkatkeun literasi matematika jeung motivasi diajar siswa.

Kecap konci: Canva AI; Literasi Matematika; Motivasi Diajar; Diajar Matematika; Systematic Literature Review.

DAFTAR PUSTAKA

- Abdullah, I., Wahyudi, D., Tonra, W. S., Tonra, W. S., & Hasbi, M. (2025). Development Of Digital Teaching Materials Based On Differentiated Learning Using Canva For Mathematics Subjects. *EduMatSains : Jurnal Pendidikan, Matematika dan Sains*. <https://doi.org/10.33541/edumatsains.v9i2.6322>
- Abylkassymova, A., Akperov, N., Tuyakov, Y., Ardabayeva, A., & Sydykova, Z. (2024). Contextual mathematical tasks as a means of developing students' functional literacy in school mathematics course. *Scientific Herald of Uzhhorod University Series Physics*. <https://doi.org/10.54919/physics/56.2024.121rb8>
- Afni, N., & H. (2020). Contextual teaching and learning (CTL) as a strategy to improve students mathematical literacy. *Journal of Physics: Conference Series*, 1581. <https://doi.org/10.1088/1742-6596/1581/1/012043>
- Agterberg, D., Oostdam, R., & Janssen, F. (2021). From speck to story: relating history of mathematics to the cognitive demand level of tasks. *Educational Studies in Mathematics*, 110, 49 - 64. <https://doi.org/10.1007/s10649-021-10093-6>
- Aguş, F. S., & Mutlu, M. E. (2026). Integrating generative AI for comprehensive ELT material development. *Innovation in Language Learning and Teaching*. <https://doi.org/10.1080/17501229.2026.2641791>
- A'la, N., & Elizar, E. (2025). The relationship between mathematical literacy and the realistic mathematic education approach: A systematic literature review. *Beta: Jurnal Tadris Matematika*. <https://doi.org/10.20414/betajtm.v18i1.696>
- Alagumalai, S., & Buchdahl, N. (2021). PISA 2012: Examining the influence of prior knowledge, time-on-task, school-level effects on achievements in mathematical literacy processes – Interpret, employ and formulate. *Australian Journal of Education*, 65, 173 - 194. <https://doi.org/10.1177/000494412111031674>
- Alam, M. M. (2016). Constructivism: Paradigm Shift from Teacher Centered To Student Centered Approach. *International Journal of Indian Psychology*. <https://doi.org/10.25215/0401.086>
- Alkhasawneh, S. (2025). AI-Driven Personalized Mathematics Learning Through Interactive Mobile Platforms: Effects on Achievement and Motivation. *Int. J. Interact. Mob. Technol.*, 19, 33-54. <https://doi.org/10.3991/ijim.v19i13.54947>
- Almarashdi, H., & Jarrah, A. M. (2023). Assessing Tenth-Grade Students' Mathematical Literacy Skills in Solving PISA Problems. *Social Sciences*. <https://doi.org/10.3390/socsci12010033>
- Al-Rahmi, W., Al-Adwan, A., Al-Maatouk, Q., Othman, M. B., Alsaud, A. R., Almogren, A. S., & Al-Rahmi, A. (2023). Integrating Communication and Task–Technology Fit Theories: The Adoption of Digital Media in Learning. *Sustainability*. <https://doi.org/10.3390/su15108144>
- Alshammary, F. M., & Alhalafawy, W. S. (2023). Digital Platforms and the Improvement of Learning Outcomes: Evidence Extracted from Meta-Analysis. *Sustainability*. <https://doi.org/10.3390/su15021305>
- Amidi, A., Zaenuri, Z., & Mariani, S. (2026). Developing Ethnomathematics-Based Outdoor PBL Materials for Mathematical Problem Solving. *Jurnal Pendidikan MIPA*. <https://doi.org/10.23960/jpmipa.v27i2.pp1086-1101>

- Asikin, M., Nurhidayat, M., & Ardiansyah, A. (2021). Development of STEM-nuanced textbook to improve students' mathematical communication skill. *Journal of Physics: Conference Series*, 1918. <https://doi.org/10.1088/1742-6596/1918/4/042064>
- Awidi, I., & Paynter, M. (2022). An Evaluation of the Impact of Digital Technology Innovations on Students' Learning: Participatory Research Using a Student-Centred Approach. *Technology, Knowledge and Learning*, 29, 65-89. <https://doi.org/10.1007/s10758-022-09619-5>
- Barbosa, A., & Vale, I. (2021). A Visual Approach for Solving Problems with Fractions. *Education Sciences*. <https://doi.org/10.3390/educsci11110727>
- Cârstea, A.-E., Ciocan, L., Vasilescu, V., Țâncu, A., Imre, M., Didilescu, A., & Pituru, S. (2026). Large Language Models in Medical and Dental Education: A Cross-Sectional Comparison of AI-Generated and Faculty-Authored Prosthodontic Materials. *Dentistry Journal*, 14. <https://doi.org/10.3390/dj14050249>
- Chen, L., Song, Y.-X., Guo, J., Sun, L., Childs, P., & Yin, Y. (2025). How generative AI supports human in conceptual design. *Design Science*, 11. <https://doi.org/10.1017/dsj.2025.2>
- Chiu, T. K. F., & Churchill, D. (2015). Exploring the characteristics of an optimal design of digital materials for concept learning in mathematics: Multimedia learning and variation theory. *Comput. Educ.*, 82, 280-291. <https://doi.org/10.1016/j.compedu.2014.12.001>
- Choi, S.-W., Kang, B., & Shin, Y. J. (2026). A Functional Framework for E-Learning Content Creation Using Generative AI Tools. *Applied Sciences*. <https://doi.org/10.3390/app16021124>
- Deshmukh, S., & Sasane, S. (2026). Visualization-Driven Approaches in Mathematics Education: A Conceptual and Pedagogical Analysis. *International Journal of Scientific and Research Publications*. <https://doi.org/10.29322/ijserp.16.02.2026.p17016>
- Dyrvold, A., & Bergvall, I. (2023). Digital teaching platforms: the use of dynamic functions to express mathematical content. *Scandinavian Journal of Educational Research*, 68, 861 - 877. <https://doi.org/10.1080/00313831.2023.2196555>
- Espinosa, C. (2025). Mathematics and Motivation. *EDUCATION AND INDUSTRY REVIEW*. <https://doi.org/10.62596/eir.ek2bxb63>
- Fadda, D., Pellegrini, M., Vivonet, G., & Callegher, C. Z. (2021). Effects of digital games on student motivation in mathematics: A meta-analysis in K-12. *J. Comput. Assist. Learn.*, 38, 304-325. <https://doi.org/10.1111/jcal.12618>
- Fatkurochman, M., Slamet, I., & Pramudya, I. (2024). Contextually Based Mathematics Learning Module Improves Students' Mathematical Literacy Abilities. *Journal of Education Research and Evaluation*. <https://doi.org/10.23887/jere.v8i1.73940>
- Foster, C., Woollacott, B., Francome, T., Shore, C., Peters, C., & Morley, H. (2024). Challenges in applying principles from cognitive science to the design of a school mathematics curriculum. *The Curriculum Journal*. <https://doi.org/10.1002/curj.249>
- Gallagher, M. A., Parsons, S. A., & Vaughn, M. (2020). Adaptive teaching in mathematics: a review of the literature. *Educational Review*, 74, 298 - 320. <https://doi.org/10.1080/00131911.2020.1722065>
- Gürefe, N., Öksüz, H., & Aktaş, G. S. (2025). Enhancing mathematical modeling competencies through AI-powered VR. *PLOS One*, 20. <https://doi.org/10.1371/journal.pone.0326440>
- Gustiningsi, T., Pasaribu, F. T., Junita, R., & Ismail, Z. (2026). Investigating students' mathematical literacy: How students solve PISA-like problems in the Jambi context. *Jurnal Elemen*. <https://doi.org/10.29408/jel.v12i2.34156>

- Hajek, B., Robinson, C. L., & Albrecht, A. (2019). Investigating undergraduate mathematics learners' cognitive engagement with recorded lecture videos. *International Journal of Mathematical Education in Science and Technology*, 50, 24 - 3. <https://doi.org/10.1080/0020739x.2018.1458339>
- Hariyadi, M., Prabowo, A., Avrilianda, D., & Widiarti, N. (2026). A Systematic Literature Review of Canva-Assisted Interactive Learning Media Development in Elementary School Mathematics (2021–2026). *Jurnal Kiprah Pendidikan*. <https://doi.org/10.33578/kpd.v5i2.p127-137>
- Hewawalpita, S. G., Perera, I., & Mahakalanda, I. (2026). AI-Assisted Infographic Design for Data Storytelling: Effects on Quality, Efficiency, and Creativity in Education. *Journal of Information Technology Education: Research*. <https://doi.org/10.28945/5878>
- He, M., Zhang, F., Ismail, Z., & He, X. (2025). Integrating Sustainable Development Goals Through Problem Based Learning in Enhancing Motivation in Learning Mathematics in Ningbo, China. *SAGE Open*, 15. <https://doi.org/10.1177/21582440251385217>
- Hidayana, R., & Lianingsih, N. (2025). Contextual Learning as a Means to Improve Elementary School Students' Mathematical Literacy Skills. *International Journal of Ethno-Sciences and Education Research*. <https://doi.org/10.46336/ijeer.v5i2.935>
- Hubbard, J., Russo, J., Livy, S., & Sullivan, P. (2026). Optimizing learning conditions for self-determination in primary mathematics education: A theoretical perspective. *Mathematics Education Research Journal*. <https://doi.org/10.1007/s13394-025-00555-y>
- Istiqomah, A., Zaenuri, Z., Mariani, S., & Rosyida, I. (2026). Meta Synthesis: Ethnomathematics-Based PISA Questions on Secondary School Students' Mathematical Literacy. *MATHEMA: JURNAL PENDIDIKAN MATEMATIKA*. <https://doi.org/10.33365/jm.v8i1.989>
- Istrate, O. (2026). Generative AI and multimodal pedagogy: implications for teaching, learning, and assessment. *Frontiers in Education*. <https://doi.org/10.3389/feduc.2026.1828953>
- Jamaludin, A. (2025). Improving Students' Mathematical Representation through Contextual Teaching Materials with a Scientific Approach: An ADDIE-Based Development Study. *Journal of Literacy Education*. <https://doi.org/10.64780/jole.v1i3.79>
- Jumrah, J., Sukmawati, S., & Nasrun, N. (2025). Needs analysis for electronic teaching materials based on the merdeka learning pathway to enhance students' mathematical creative thinking skills. *Beta: Jurnal Tadris Matematika*. <https://doi.org/10.20414/betajtm.v18i1.709>
- Karimah, S., Utami, R., Kustriyono, E., & Rohman, A. A. (2025). Development of Canva Based E-Module to Foster Multiliteracy in Fraction Material. *Phenomenon : Jurnal Pendidikan MIPA*. <https://doi.org/10.21580/phen.2025.15.1.28823>
- Khotimah, H., Mulianah, M., Rahman, A., & Bernard, B. (2026). Analisis Kognitif Siswa Berdasarkan Kerangka Formulate Employ Interpret pada Soal PISA Level 4. *Mandalika Mathematics and Educations Journal*. <https://doi.org/10.29303/jm.v8i1.11101>
- Kolar, V. M., & Hodnik, T. (2021). Mathematical Literacy from the Perspective of Solving Contextual Problems. *European journal of educational research*, 10, 467-483. <https://doi.org/10.12973/eu-jer.10.1.467>
- Komalig, S. W., Taroreh, J., & Winokan, A. (2026). FROM DIGITAL ACCESS TO PERCEIVED ACADEMIC VALUE: A DOCUMENTARY CASE SYNTHESIS. *EDUCATIONE*. <https://doi.org/10.59397/edu.v4i2.243>
- Kovtaniuk, I., Pidhornyi, O., & Kovtaniuk, M. S. (2025). The role of the online service Canva in the world of generative artificial intelligence. *Problems of Education*. <https://doi.org/10.52256/2710-3986.2-103.2025.31>

- Kusuma, A. C., Ekasari, S., & Weddakarti, E. (2022). Implementation of Interactive Mathematics Teaching E-Modul To Improve Student Motivation and Learning Outcomes. *Hipotenusa : Journal of Mathematical Society*. <https://doi.org/10.18326/hipotenusa.v4i1.7218>
- Lam, P., Ng, H. K. Y., Tse, A., Lu, M., & Wong, B. Y. K. (2020). eLearning technology and the advancement of practical constructivist pedagogies: Illustrations from classroom observations. *Education and Information Technologies*, 26, 89 - 101. <https://doi.org/10.1007/s10639-020-10245-w>
- Law, A. K., So, J., Chun, T.-L., Choi, Y. F., Cheung, K.-O.-H., & Graham, C. A. (2025). AI versus human-generated multiple-choice questions for medical education: a cohort study in a high-stakes examination. *BMC Medical Education*, 25. <https://doi.org/10.1186/s12909-025-06796-6>
- Lazzeretti, C. (2026). AI-Supported Design of Teaching Units for English to Young Learners: A Case Study in Initial Teacher Education. *Education Sciences*. <https://doi.org/10.3390/educsci16040614>
- Lestari, W., Suweken, G., & Sariyasa, S. (2025). Harnessing AI-Powered Learning Media in Mathematics Education: A Systematic Review on Improving Students' Problem-Solving Skills. *International Journal of Education, Management, and Technology*. <https://doi.org/10.58578/ijemt.v3i3.7922>
- Lestari, Y., As'ari, A., & Muksar, M. (2021). Analysis Of Students' Mathematical Literacy Skill In Solving PISA Mathematical Problems. *MaPan*. <https://doi.org/10.24252/mapan.2021v9n1a7>
- Lubis, A. H. (2025). The Influence of Picture Story Books with a Local Wisdom Approach on Students' Learning Motivation in Primary School Mathematics Learning. *Journal of Indonesian Primary School*. <https://doi.org/10.62945/jips.v2i2.756>
- Mainali, B. (2020). Representation in Teaching and Learning Mathematics. *International Journal of Education in Mathematics, Science and Technology*, 9, 1-21. <https://doi.org/10.46328/ijemst.1111>
- Marsyandia, I. P., Nusantara, D. S., & Gustiningsi, T. (2025). Assessing Students' Mathematical Literacy through PISA Items in the Space and Shape Content. *Brillo Journal*. <https://doi.org/10.56773/bj.v5i1.153>
- Maryati, I., Hamdani, N., & Sumartini, T. S. (2021). How to improve the mathematical literacy ability of elementary school teachers education student. *Journal of Physics: Conference Series*, 1987. <https://doi.org/10.1088/1742-6596/1987/1/012039>
- Marzi, G., Balzano, M., Caputo, A., & Pellegrini, M. (2024). Guidelines for Bibliometric-Systematic Literature Reviews: 10 steps to combine analysis, synthesis and theory development. *International Journal of Management Reviews*. <https://doi.org/10.1111/ijmr.12381>
- Mauluah, L., Ekantini, A., & Wijayanti, I. D. (2024). Development Of Teaching Materials Based On Realistic Algebra And Measurement Materials. *Al-Bidayah : Jurnal Pendidikan Dasar Islam*. <https://doi.org/10.14421/al-bidayah.v16i1.9571>
- Mayer, R. (2017). Using multimedia for e-learning. *J. Comput. Assist. Learn.*, 33, 403-423. <https://doi.org/10.1111/jcal.12197>
- Muhaimin, L. H., Sholikhakh, R. A., Yulianti, S., Ardani, A., Hendriyanto, A., & Sahara, S. (2024). Unlocking the secrets of students' mathematical literacy to solve mathematical problems: A systematic literature review. *Eurasia Journal of Mathematics, Science and Technology Education*. <https://doi.org/10.29333/ejmste/14404>
- Munthe, M., Sibarani, I., Sihite, R. A., Clara, E. D., & Silalahi, A. (2024). Practical Socialization Of The Use Of Canva Magic Ai As A Solution For Digital Learning Media Development For Teachers At State Primary School 091333 Rayausang Dolok

- Masagal District, Simalungun District Masagal Kabupaten Simalungun. *Journal of Community Research and Service*. <https://doi.org/10.24114/jcrs.v8i2.62220>
- Murni, D., H., & M. (2019). Validity and practicality of calculus teaching materials based on integrated ict contextual problems to improve students problem solving skills. *Journal of Physics: Conference Series*, 1317. <https://doi.org/10.1088/1742-6596/1317/1/012131>
- Murtaza, M., Ahmed, Y., Shamsi, J., Sherwani, F., & Usman, M. (2022). AI-Based Personalized E-Learning Systems: Issues, Challenges, and Solutions. *IEEE Access*, 10, 81323-81342. <https://doi.org/10.1109/access.2022.3193938>
- Musabbihan, M., S., & Dantes, N. (2024). Inquiry-Based Learning Model Assisted by Canva Media on Motivation and Mathematics Learning Achievement. *Jurnal Imiah Pendidikan dan Pembelajaran*. <https://doi.org/10.23887/jipp.v8i1.74257>
- Nanney, B. (2020). Student-Centered Learning. *The SAGE Encyclopedia of Higher Education*. <https://doi.org/10.4135/9781529714395.n530>
- Ng, D., Leung, J., Su, J.-H., Ng, R., & Chu, S. (2023). Teachers' AI digital competencies and twenty-first century skills in the post-pandemic world. *Educational Technology Research and Development*, 71, 137 - 161. <https://doi.org/10.1007/s11423-023-10203-6>
- Ningsih, L., Sumartini, T. S., & Luritawaty, I. P. (2025). Canva Site-Based Learning Media Development on Polyhedrons to Improve Mathematical Representation Skills. *Plusminus: Jurnal Pendidikan Matematika*. <https://doi.org/10.31980/plusminus.v5i3.3603>
- Pagiling, S. L., Munfarikhatin, A., Natsir, I., & Ma'dika, A. R. (2024). Development of Mathematics Teaching Modules Based on Differentiated Instruction to Stimulate Student Engagement. *Jurnal Didaktik Matematika*. <https://doi.org/10.24815/jdm.v11i1.36525>
- Parame_decin, M., B. (2023). Visual Representations in Teaching Mathematics. *Sprink Journal of Arts, Humanities and Social Sciences*. <https://doi.org/10.55559/sjahss.v2i05.107>
- Pedersen, M., Bach, C. C., Gregersen, R., Højsted, I., & Jankvist, U. (2021). Mathematical Representation Competency in Relation to Use of Digital Technology and Task Design—A Literature Review. 444. <https://doi.org/10.3390/math9040444>
- Pitriani, P. (2025). Need Analysis In Developing Rme-Based Digital Teaching Materials Of Mathematics For Junior High School. *SIGMA: JURNAL PENDIDIKAN MATEMATIKA*. <https://doi.org/10.26618/sigma.v16i2.15826>
- Prasetyo, R., & Aziz, T. A. (2025). Pengembangan Desain Pembelajaran dengan Pendekatan Gamifikasi sebagai Strategi Menumbuhkan Motivasi Belajar Siswa. *YASIN*. <https://doi.org/10.58578/yasin.v5i5.6582>
- Pratiwi, Y., & Subekti, F. E. (2026). Integrating canva-AI and deep learning approaches into interactive mathematics videos to enhance mathematical literacy and self-regulated learning in vocational education. *Journal of Advanced Sciences and Mathematics Education*. <https://doi.org/10.58524/jasme.v6i2.1174>
- Priatna, N., Sispiyati, R., & Lorenzia, S. (2019). Validation of mathematical teaching material's developed by project-based learning integrated STEM. *Journal of Physics: Conference Series*, 1280. <https://doi.org/10.1088/1742-6596/1280/4/042045>
- Pujiastuti, H., & Haryadi, R. (2022). Enhancing Mathematical Literacy Ability through Guided Inquiry Learning with Augmented Reality. *Journal of Education and e-Learning Research*. <https://doi.org/10.20448/jeelr.v10i1.4338>
- Rachmani, N., & Farah, N. (2023). The Development of STEM-nuanced Mathematics Teaching Materials to Enhance Students' Mathematical Literacy Ability Through Information and Communication Technology-Assisted Preprospec Learning Model.

- Rahmah, F., Rahmahwati, F., & Hamdani, R. (2026). The effectiveness of the contextual teaching and learning model on mathematical literacy skills in terms of learning motivation. *Union: Jurnal Ilmiah Pendidikan Matematika*.
<https://doi.org/10.30738/union.v14i2.22911>
- Ren, X.-Y., & Wu, M.-L. (2025). Examining Teaching Competencies and Challenges While Integrating Artificial Intelligence in Higher Education. *TechTrends*, 69, 519 - 538.
<https://doi.org/10.1007/s11528-025-01055-3>
- Rezat, S., Malik, S., & Leifeld, M. (2022). Scaffolding Close Reading of Mathematical Text in Pre-service Primary Teacher Education at the Tertiary Level: Design and Evaluation. *International Journal of Science and Mathematics Education*, 20, 215 - 236.
<https://doi.org/10.1007/s10763-022-10309-y>
- Romero-Fernández, A., Hernandez-Albino, E., Morandín-Ahuerma, F., Salazar-Morales, J., Contreras-González, J., & Villanueva-Méndez, L. (2026). AI Literacy and Teachers Digital Competencies. *International Journal of Sciences and Innovation Engineering*.
<https://doi.org/10.70849/ijsci03092634916>
- Sabirin, M., Hidayatullah, A., Saputri, R. A., Atsnan, M. F., & Nareki, M. L. (2022). MASTER (Motivating, Acquiring, Searching, Triggering, Exhibiting, Reflecting) learning model in terms of literacy ability and students' mathematics learning motivation. *Jurnal Riset Pendidikan Matematika*.
<https://doi.org/10.21831/jrpm.v9i1.48481>
- Safithri, R. (2026). Development of Mathematics Learning Media Using Kvisoft Flipbook Application for Linear Programming Material. *MATHEMA: JURNAL PENDIDIKAN MATEMATIKA*. <https://doi.org/10.33365/jm.v8i1.1001>
- Sarifayani, I., & Haqq, A. A. (2022). Development of handout teaching materials with a contextual approach to improve students' mathematical understanding. *International Journal of Education and Humanities*. <https://doi.org/10.58557/ijeh.v2i1.38>
- Sarma, N. (2026). AI-assisted Teaching-learning Materials for School Students: A Critical Narrative Review of Opportunities, Classroom Practices and Implementation Challenges. *Asian Journal of Education and Social Studies*.
<https://doi.org/10.9734/ajess/2026/v52i93314>
- Scharinger, C. (2024). Task-irrelevant decorative pictures increase cognitive load during text processing but have no effects on learning or working memory performance: an EEG and eye-tracking study. *Psychological Research*, 88, 1362 - 1388.
<https://doi.org/10.1007/s00426-024-01939-8>
- Seicalyanti, A. S., Mahardika, C. I., & Afriansyah, E. A. (2025). The implementation of the ICT-integrated realistic mathematics education using canva to improve conceptual understanding of polyhedra. *Jurnal Inovasi Pembelajaran Matematika: PowerMathEdu*.
<https://doi.org/10.31980/g8y6bp61>
- Serin, H. (2018). A Comparison of Teacher-Centered and Student-Centered Approaches in Educational Settings. *International Journal of Social Sciences & Educational Studies*.
<https://doi.org/10.23918/ijsses.v5i1p164>
- Shehata, B., Tlili, A., Huang, R.-H., Adarkwah, M., Liu, M.-Y., & Chang, T.-W. (2023). How are we doing with student-centered learning facilitated by educational technologies? A systematic review of literature reviews. *Education and Information Technologies*, 1-42. <https://doi.org/10.1007/s10639-023-12112-w>
- Sigurjónsson, J. Ö. (2024). Teaching mathematics with high cognitive activation: instructional formats and connection-making interactions in high-level Nordic lessons.

NOMAD Nordic Studies in Mathematics Education.
<https://doi.org/10.7146/nomad.v29i2.146422>

- Simbolon, A., & Nurjanah, N. (2024). Measuring Mathematical Literacy Skills of Indonesian Junior High School Students in Solving PISA-Like Problems. *Jurnal Pendidikan MIPA*.
<https://doi.org/10.23960/jpmipa/v25i3.pp1259-1272>
- Siregar, R., Subagiharti, H., Handayani, D. S., Hutagaol, D., & Barus, E. (2025). Teaching and Learning In Digital Technology Era: Method, Material Design and Media. *International Journal of Educational Research Excellence (IJERE)*.
<https://doi.org/10.55299/ijere.v4i2.1566>
- Solikhah, P. P., Rahaju, E. B., & Prihartiwi, N. R. (2022). Students' Mathematical Literacy Processes on PISA-Like Tasks with The Domain of Space and Shape. *MATHEdunesa*.
<https://doi.org/10.26740/mathedunesa.v11n3.p732-743>
- Song, Y., Kim, J., Xing, W., Liu, Z.-F., Li, C.-L., & Oh, H. (2024). Elementary school students' and teachers' perceptions toward creative mathematical writing with Generative AI. *Journal of Research on Technology in Education*, 58, 615 - 637.
<https://doi.org/10.48550/arxiv.2409.06723>
- Susanta, A., & Koto, I. (2021). The Development of Mathematics Teaching Material Based on Problem Solving to Support the Goal Achievement of Primary Education Mathematics Courses. *Proceedings of the International Conference on Educational Sciences and Teacher Profession (ICETeP 2020)*.
<https://doi.org/10.2991/assehr.k.210227.004>
- Susanti, E., Murtafiah, W., & Pradana, L. N. (2025). Interactive Digital Media Using Canva to Enhance Students' Literacy Skills in Integrated Mathematics–Science Learning for Fifth-Grade Students. *Jurnal Penelitian Pendidikan IPA*.
<https://doi.org/10.29303/jppipa.v11i12.13692>
- Syanti, E. C., Rakhmawati, D., & Sulianto, J. (2026). Enhancing motivation and mathematics achievement using AI-based Canva tug-of-war game media in deep learning. *Indonesian Journal of Educational Development (IJED)*.
<https://doi.org/10.59672/ijed.v7i2.6886>
- Tasdelen, O., & Bodemer, D. (2025). Generative AI in the Classroom: Effects of Context-Personalized Learning Material and Tasks on Motivation and Performance. *International Journal of Artificial Intelligence in Education*, 35, 3049 - 3070.
<https://doi.org/10.1007/s40593-025-00491-9>
- Taufik, A., & Zainab, N. (2021). Mathematical literacy of students in solving PISA-like problems based on cognitive styles of field-dependent and field-independent. *Journal of Physics: Conference Series*, 1918. <https://doi.org/10.1088/1742-6596/1918/4/042080>
- Taufiq, I., Adrias, A., & Fitria, Y. (2025). Efektivitas Media Canva dalam Meningkatkan Motivasi dan Hasil belajar Matematika Sekolah Dasar Tahun 2022–2025: A Systematic Literature Review. *Katalis Pendidikan : Jurnal Ilmu Pendidikan dan Matematika*.
<https://doi.org/10.62383/katalis.v2i4.2653>
- Truong, H.-H., & Nguyen, P. (2025). Mathematical literacy: Parallels between the PISA mathematics framework and Vietnam's mathematics curriculum. *The Curriculum Journal*. <https://doi.org/10.1002/curj.70022>
- Ulandari, N. W. A., Agustini, K., & Sudatha, I. G. W. (2026). Integrasi Canva Sebagai Media Presentasi Kolaboratif Dalam Pembelajaran Matematika. *Cetta: Jurnal Ilmu Pendidikan*.
<https://doi.org/10.37329/cetta.v9i1.5126>
- Verawati, U. J. (2023). Implementasi Pengembangan Bahan Ajar Berbasis Masalah untuk Meningkatkan Kemampuan Literasi Siswa. *Social Science Academic*.
<https://doi.org/10.37680/ssa.v1i1.3307>

- Wang, X., Huang, R., Sommer, M., Pei, B., Shidfar, P., Rehman, M., Ritzhaupt, A. D., & Martin, F. (2024). The Efficacy of Artificial Intelligence-Enabled Adaptive Learning Systems From 2010 to 2022 on Learner Outcomes: A Meta-Analysis. *Journal of Educational Computing Research*, 62, 1348 - 1383.
<https://doi.org/10.1177/07356331241240459>
- Wang, N., Wang, X., & Su, Y.-S. (2024). Critical analysis of the technological affordances, challenges and future directions of Generative AI in education: a systematic review. *Asia Pacific Journal of Education*, 44, 139 - 155.
<https://doi.org/10.1080/02188791.2024.2305156>
- Zambrano-Ramírez, J., Centeno Martínez, E. G., Márquez, E. J. L., Loaiza, A. C. B., & Alvarado, M. Y. (2024). The seductive details in online mathematics learning. *RIED-Revista Iberoamericana de Educación a Distancia*.
<https://doi.org/10.5944/ried.27.2.38772>
- Zheng, X., Lai, B., Zhang, Y., Liang, W., & Wu, X.-P. (2026). From motivation to literacy: Chain mediation of learning habits and mathematical reasoning in mathematical literacy development.. *Acta psychologica*, 268, 107195 .
<https://doi.org/10.1016/j.actpsy.2026.107195>

Development of Canva AI-Based Teaching Materials to Improve Students' Mathematical Literacy and Learning Motivation

Abstract

This research is motivated by the still limited comprehensive studies on the use of Canva AI-based teaching materials in improving students' mathematical literacy and learning motivation. The purpose of this research is to identify, analyze, and synthesize research findings related to the effectiveness of using Canva AI in mathematics learning. This research uses the systematic literature review (SLR) method with stages of identification, screening, eligibility, and inclusion of relevant articles. Data sources were obtained from scientific databases such as Scopus, Google Scholar, and ERIC with a publication range from 2020 to 2026. A total of 46 selected articles were analyzed using data extraction sheet instruments and established inclusion-exclusion criteria. The research results show that the use of Canva AI-based teaching materials consistently has a positive impact on improving students' mathematical literacy and learning motivation through interactive, contextual, and adaptive visual presentations. In addition, the integration of this technology also encourages active engagement and student independence in learning. Thus, it can be concluded that Canva AI-based teaching materials have significant potential as a learning innovation to enhance students' mathematical literacy and learning motivation.

Keywords: Canva AI; Mathematical Literacy; Learning Motivation; Mathematics Education; Systematic Literature Review.