

INOVASI PEMBELAJARAN DI ERA DIGITAL

Nurul Shofiati Zuhro, M.Pd., dkk.
Editor: Nurul Rahmadesni, S. Hum.



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Inovasi Pembelajaran di Era Digital

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Puji syukur ke hadirat Tuhan Yang Maha Esa atas rahmat dan karunia-Nya, sehingga buku berjudul *Inovasi Pembelajaran di Era Digital* dapat hadir di tengah pembaca. Buku ini mengulas berbagai perubahan dan peluang pembelajaran yang berkembang seiring kemajuan teknologi digital dengan bahasa yang mudah dipahami.

Buku ini ditujukan untuk masyarakat umum yang ingin menambah wawasan tentang pemanfaatan teknologi dalam proses belajar. Melalui pembahasan yang praktis dan relevan, pembaca diajak memahami pentingnya inovasi dalam menghadapi perkembangan zaman.

Semoga buku ini bermanfaat, menambah pengetahuan, dan menjadi inspirasi untuk terus belajar serta beradaptasi di era digital. Selamat membaca.

Jakarta, Juni 2026

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- Aguilera, D., & Ortiz-Revilla, J. (2021). STEM vs. STEAM education and student creativity: A systematic literature review. *Education Sciences*, 11(7), 331.
- Al-Barakat, A. A., Alakashee, B., Kanaan, E., Al-Hassan, O. M., Alali, R. M., Aboud, Y., & Zaher, A. (2026). Mentoring for excellence: A constructivist approach to developing pre-service English language teachers' skills. *Research Journal in Advanced Humanities*, 7(2).
<https://doi.org/10.58256/wey5k552>
- Alfiyah, R. (2025). Rekonstruksi Pendidikan Berkelanjutan di Era Digital: sebuah Analisis Sosiologi Kritis dengan Pendekatan Pedagogi Paulo Freire. *Journal Peqguruang: Conference Series*, 7(2), 898–904. <https://doi.org/10.35329/jp.v7i2.6777>
- Alhayat, A., Pane, R., & Siregar, M. (2023). Paradigma baru pedagogi: Menggeser hafalan menuju pembelajaran bermakna. *Jurnal Inovasi Pendidikan Dasar*, 7(2), 145–158
- Alhebaishi, S., Stone, R., & Ameen, M. (2025). Emotional Engagement and Teaching Innovations for Deep Learning and Retention in Education: A Literature Review. *International Journal of Advanced Computer Science and Applications*, 16(3), 35–45.
<https://doi.org/10.14569/IJACSA.2025.0160304>

- Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the *e-learning* system usage during COVID-19 pandemic. *Education and Information Technologies*, 25(6), 5261–5280.
- Almulla, M. A. (2020). The effectiveness of the project-based learning approach as a way to engage students in learning. *SAGE Open*, 10(3)
- Álvarez-Chaves, A., & Saborío-Taylor, S. (2025). Hybrid learning in higher education: Considerations for its implementation in course design. *Journal of Digital Educational Technology*, 5(1), ep2505. <https://doi.org/10.30935/jdet/15859>
- Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Longman.
- Ando, K. N., Basilisco, J. S., Deniega, A. J., Gador, K. L., Geraldo, J. A., Elaisa, W., Gipulao, M. M., Redondo, M. R., Sumampong, M. S., Talledo, M. T., Villacis, F. T., Taneo, J. D., Cabello, C. A., & Minyamin, A. V. (2022). Learning without Learning in the New Normal: College Education Students Lived Experiences in Blended Learning Modality. *Psych Educ.* <https://doi.org/10.5281/zenodo.6791799>
- Badan Standar, Kurikulum, dan Asesmen Pendidikan. Kementerian Pendidikan Dasar dan Menengah. (2025). Panduan teknis pelaksanaan pembelajaran mendalam (deep learning) menuju pendidikan bermutu. Direktorat Jenderal Pendidikan Anak Usia Dini, Pendidikan Dasar, dan Pendidikan Menengah.

- Bahri, S. (2021). Peningkatan Kapasitas Guru di Era Digital melalui Model Pembelajaran Inovatif Variatif. *Jurnal Hurriah: Jurnal Evaluasi Pendidikan Dan Penelitian*, 2(4), 93–102.
- Bates, A. W. (2022). *Teaching in a digital age: Guidelines for designing teaching and learning* (3rd ed.). Tony Bates Associates Ltd.
- Bell, S. (2021). Project-based learning for the 21st century: Skills for the future. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 94(2), 39–43.
<https://doi.org/10.1080/00098655.2021.1888423>
- Bella, A.S. *et al.* (2025) “Tantangan Pembelajaran Berdiferensiasi dalam Implementasi Kurikulum Merdeka di SDN Kuin Utara 1,” *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(02), pp. 212–227.
- Bishop, J. L., & Verleger, M. A. (2013). The flipped classroom: A survey of the research. In *2013 ASEE Annual Conference & Exposition Proceedings* (pp. 23.1200.1–23.1200.18). ASEE. <https://doi.org/10.18260/1-2--22585>
- Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *International Journal of Educational Technology in Higher Education*, 17(1), Article 2. <https://doi.org/10.1186/s41239-019-0176-8>
- Bonfield, C. A., Salter, M., Longmuir, A., Benson, M., & Adachi, C. (2020). Transformation or evolution?: Education 4.0, teaching

- and learning in the digital age. *Higher Education Pedagogies*, 5(1), 223–246.
- Børte, K., & Lillejord, S. (2024). Learning to teach: Aligning pedagogy and technology in a learning design tool. *Teaching and Teacher Education*, 148, Article 104693. <https://doi.org/10.1016/j.tate.2024.104693>
- Branch, R. M. (2009). *Instructional design: The ADDIE approach*. Springer.
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (2000). *How people learn: Brain, mind, experience, and school (Expanded ed.)*. National Academy Press.
- Clark, R. C., & Mayer, R. E. (2023). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning* (5th ed.). Wiley.
- Crompton, H., & Burke, D. (2020). Mobile learning and pedagogical opportunities: A configurative systematic review of PreK-12 research using the SAMR framework. *Computers & Education*, 156, 103945.
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97–140. <https://doi.org/10.1080/10888691.2018.1537791>
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2020). Effective teacher professional development. *Learning Policy Institute*.

- Deák, C., Kumar, B., Szabó, I., Nagy, G., & Szentesi, S. (2024). A systematic review of STEAM education's role in nurturing digital competencies for sustainable innovations. *Education Sciences*, 14(3), 226.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining gamification. In *Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments* (pp. 9–15). ACM. <https://doi.org/10.1145/2181037.2181040>
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5–22.
- Duke, B., Harper, G., & Johnston, M. (2013). Connectivism as a digital age learning theory. *The International HETL Review*, 4(1), 4–13.
- Dumont, H., Istance, D., & Benavides, F. (Eds.). (2010). *The nature of learning: Using research to inspire practice*. OECD Publishing. <https://doi.org/10.1787/9789264086487-en>
- Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency framework. *Educational Technology Research and Development*, 68, 2449–2472. <https://doi.org/10.1007/s11423-020-09767-4>
- Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency framework. *Educational Technology Research and Development*, 68(5), 2449–2472.

- Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 68, 2449–2472. <https://doi.org/10.1007/s11423-020-09767-4>
- Fauziyah *et al.* (2025) “Diferensiasi dalam Pembelajaran: Strategi dan Praktik di Kelas,” *Jurnal Ilmiah Profesi Pendidikan*, 10(4), pp. 3555–3567. Available at: <https://doi.org/10.29303/jipp.v10i4.4114>.
- Fernández-Batanero, J. M., Montenegro-Rueda, M., Fernández-Cerero, J., & García-Martínez, I. (2022). Digital competences for teacher professional development. Systematic review. *European Journal of Teacher Education*, 45(4), 513–531.
- Filipe, J., Baptista, M., & Conceição, T. (2024). Integrated STEAM education for students’ creativity development. *Education Sciences*, 14(6), 676.
- Filo, Y. (2024). An artificial intelligence competency framework for teachers and students. *European Journal of Open, Distance and E-Learning*, 26(S1), 93–106.
- Fiock, H. (2020). Designing a community of inquiry in online courses. *International Review of Research in Open and Distributed Learning*, 21(1), 135–153.
- Fullan, M. (2015). *The new meaning of educational change (5th ed.)*. Teachers College Press.
- Fullan, M., & Quinn, J. (2019). *Evaluating deep learning: Tools and tactics for changing educational systems*. Corwin Press.

- Fullan, M., Quinn, J., & McEachen, J. (2018). *Deep learning: Engage the world change the world*. Corwin Press.
- Fuller, R., Joynes, V., Cooper, J., Boursicot, K., & Roberts, T. (2022). Technology enhanced assessment: Ottawa consensus statement and recommendations. *Medical Teacher*, 44(8), 836–850.
- Galindo-Domínguez, H., Delgado, N., Campo, L., & Losada, D. (2024). Relationship between teachers' digital competence and attitudes towards artificial intelligence in education. *International Journal of Educational Research*, 126, 102381.
- Garbett, D. (2011). Constructivism deconstructed in science teacher education. *Australian Journal of Teacher Education*, 36(6), 36–49. <https://doi.org/10.14221/ajte.2011v36n1.5>
- Garrison, D. R., & Vaughan, N. D. (2008). *Blended learning in higher education: Framework, principles, and guidelines*. Jossey-Bass.
- Guo, P., Saab, N., Post, L. S., & Admiraal, W. (2020). A review of project-based learning in higher education: Student outcomes and measures. *International Journal of Educational Research*, 102, 101586.
- Harris, A., & Jones, M. (2020). COVID-19 and school leadership: Responding to a global pandemic in education. *School Leadership & Management*, 40(4), 273–279.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.

- Henriksen, D., Creely, E., Henderson, M., & Mishra, P. (2021). Creativity and technology in teaching and learning: A literature review of the uneasy space of implementation. *Educational Technology Research and Development*, 69(4), 2091–2108. <https://doi.org/10.1007/s11423-021-10033-5>
- Henriksen, D., Mishra, P., & Fisser, P. (2021). Infusing creativity and technology in 21st century education: A systemic view for change. *Educational Technology and Society*, 24(1), 1–13.
- Herro, D., Quigley, C., & Jacques, L. (2020). Examining technology integration in STEAM classrooms: A mixed methods study. *Journal of Research on Technology in Education*, 52(4), 437–455.
- Hug, T. (2005). Micro learning and narration: Exploring possibilities of utilization of narrations and storytelling for the designing of “micro units” and didactical micro-learning arrangements. In *Proceedings of Media in Transition Conference*(pp. 1–8). Massachusetts Institute of Technology.
- Ifenthaler, D., & Yau, J. Y.-K. (2020). Utilising learning analytics to support study success in higher education: A systematic review. *Educational Technology Research and Development*, 68, 1961–1990.
- Irhamni, H., & Ashari, M. K. (2023). Digital Platform-Based Learning Innovation in Elementary Schools in The Industry 4.0 Era: Systematic Literature Review. *QALAMUNA: Jurnal Pendidikan, Sosial, Dan Agama*, 15(2), 945–958. <https://doi.org/10.37680/qalamuna.v15i2.3327>

- Juddin, S. and Pranahita, D.D. (2025) “Literature Review: Diferensiasi dan Pembelajaran Personal dalam Kegiatan IPA,” *Indonesian Journal of Applied Science and Technology*, 6(2), pp. 101–114.
- Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi. (2022). Kajian pengembangan Profil Pelajar Pancasila. Badan Standar, Kurikulum, dan Asesmen Pendidikan.
- Kirkwood, A., & Price, L. (2014). Technology-enhanced learning and teaching in higher education: What is “enhanced” and how do we know? A critical literature review. *Learning, Media and Technology*, 39(1), 6–36.
<https://doi.org/10.1080/17439884.2013.770404>
- Kwangmuang, P., Jarutkamolpong, S., Sangboonraung, W., & Daungtod, S. (2021). The development of learning innovation to enhance higher order thinking skills for students in Thailand junior high schools. *Heliyon*, 7(6).
<https://doi.org/10.1016/j.heliyon.2021.e07309>
- Larmer, J., Mergendoller, J., & Boss, S. (2015). Setting the standard for project-based learning: A proven approach to leading powerful learning. ASCD.
- Laurillard, D. (2012). *Teaching as a design science: Building pedagogical patterns for learning and technology*. Routledge.
- Leavy, A., Dick, L., Meletiou-Mavrotheris, M., Paparistodemou, E., & Stylianou, E. (2023). The prevalence and use of emerging technologies in STEAM education: A systematic review of the

- literature. *Journal of Computer Assisted Learning*, 39(4), 1061–1082.
- Lestari, D. I., & Kurnia, H. (2023). Implementasi Model Pembelajaran Inovatif untuk Meningkatkan Kompetensi Profesional Guru di Era Digital. *JPG: Jurnal Pendidikan Guru*, 4(3), 205–222.
- Maier, U., & Klotz, C. (2022). Personalized feedback in digital learning environments: Classification framework and literature review. *Computers and Education: Artificial Intelligence*. <https://doi.org/10.1016/j.caeai.2022.100080>
- Major, L., Francis, G.A. and Tsapali, M. (2021) “The effectiveness of technology-supported personalised learning in low- and middle-income countries: A meta-analysis. ,” *British Journal of Educational Technology*, 52(5), pp. 1935–1964.
- Maričić, M., Cvjetičanin, S., Anđić, B., Mumcu, F., & Lavicza, Z. (2023). Contribution of steam activities to the development of 21st-century skills of primary school students: Multiple case study. *STEAM-BOX*.
- Mavor, K. I., Bottomley, E., Marin, B., & Smyth, L. (2025). Discipline-based social identity and organizational identity as predictors of approaches to learning and evaluation of teaching. *European Journal of Psychology of Education*, 40(3). <https://doi.org/10.1007/s10212-025-00971-5>
- Mayer, R. E. (2020). *Multimedia learning (3rd ed.)*. Cambridge University Press. <https://doi.org/10.1017/9781316941355>

- Mayer, R. E. (2021). *Multimedia learning* (3rd ed.). Cambridge University Press.
- McCarthy, A. M., Maor, D., McConney, A., & Cavanaugh, C. (2023). Digital transformation in education: Critical components for leaders of system change. *Social Sciences & Humanities Open*, 8(1), 100479.
- Milara, I. S., & Orduña, M. C. (2024). Possibilities and challenges of STEAM pedagogies. *arXiv preprint arXiv:2408.15282*.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017–1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Mpungose, C. B. (2020). Emergent transition from face-to-face to online learning in a South African University in the context of the Coronavirus pandemic. *Humanities and Social Sciences Communications*, 7, 113.
- Mulenga, R., & Shilongo, H. (2024). Hybrid and Blended Learning Models: Innovations, Challenges, and Future Directions in Education. *Acta Pedagogica Asiana*, 4(1), 1–13. <https://doi.org/10.53623/apga.v4i1.495>
- Mulyasari, E. (2024). *Kurikulum Berbasis Understanding by Design (UbD) untuk Membangun Kemandirian Siswa Sekolah Dasar*. [Damera Press](#).
- Murdianti, W. (2024). Inovatif Media Pembelajaran Digital untuk Meningkatkan Minat Belajar di Era Digital. *Innovative: Journal of Social Science Research*, 4(1), 13200–13212.

- Nafsi, B.I. and Abdussakir, A. (2025) “IMPLEMENTASI DIFERENSIASI PEMBELAJARAN IPS BERBASIS DIGITAL LEARNING SPACE UNTUK MENINGKATKAN SELF REGULATED LEARNING BAGI SISWA,” *Dinamika Sosial: Jurnal Pendidikan Ilmu Pengetahuan Sosial*, 4(1), pp. 87–101. Available at: <https://doi.org/10.18860/dsjpips.v4i1.15223>.
- Nasrodin, Faishol, R. and Fauzi, A. (2025) “Optimalisasi Kreativitas Peserta Didik melalui Penerapan Pembelajaran Diferensiasi Produk,” *JurnalIlmiah Ar-Risalah*, 23(01), pp. 168–181.
- Ng, W. (2021). *New digital technology in education: Conceptualizing professional learning for educators*. Springer.
- Nielsen, J. (2012). *Usability 101: Introduction to usability*. Nielsen Norman Group. <https://www.nngroup.com/articles/usability-101-introduction-to-usability/>
- Noetel, M., Griffith, S., Delaney, O., Sanders, T., Parker, P., del Pozo Cruz, B., & Lonsdale, C. (2021). Video improves learning in higher education: A systematic review. *Review of Educational Research*, 91(2), 204–236. <https://doi.org/10.3102/0034654321990713>
- OECD. (2013). *Innovative learning environments*. OECD Publishing. <https://doi.org/10.1787/9789264203488-en>
- OECD. (2014). *Measuring innovation in education: A new perspective*. OECD Publishing. <https://doi.org/10.1787/9789264215696-en>

- OECD. (2016). *Innovating education and educating for innovation: The power of digital technologies and skills*. OECD Publishing. <https://doi.org/10.1787/9789264265097-en>
- OECD. (2023). *OECD digital education outlook 2023: Towards an effective digital education ecosystem*. OECD Publishing. <https://doi.org/10.1787/c74f03de-en>
- OECD. (2026). *OECD digital education outlook 2026: Exploring effective uses of generative AI in education*. OECD Publishing.
- Oproescu, A. (2017). The constructivist design of the assessment-an integrated teaching and learning process. *Proceedings of the 9th International Conference on Electronics, Computers and Artificial Intelligence, ECAI 2017*, 1–4. <https://doi.org/10.1109/ECAI.2017.8166495>
- Pane, S., dkk. (2025). Strategi implementasi deep learning: Menciptakan pengalaman belajar holistik dalam kurikulum merdeka. *Jurnal Pengkajian dan Pengembangan Pendidikan*, 12(1), 89–102.
- Paniagua, A., & Istance, D. (2018). *Teachers as designers of learning environments: The importance of innovative pedagogies*. OECD Publishing. <https://doi.org/10.1787/9789264085374-en>
- Partnership for 21st Century Learning. (2021). *Framework for 21st century learning definitions*. Battelle for Kids.
- Pasani, C. F., & Amelia, R. (2021). Introduction of the integrative STEAM approach as a learning innovation in the COVID-19 pandemic in South Kalimantan. *Journal of Physics:*

Conference Series, 1832(1). <https://doi.org/10.1088/1742-6596/1832/1/012029>

- Pattaufi, P., Aswan, D., & Hakim, A. (2023). The Development of Teaching Material for Blended Learning: A Strategy to Improve Students' Creativity and Innovation in the 21st Century. *Journal of Educational Science and Technology (EST)*, 9(1), 19. <https://doi.org/10.26858/est.v9i1.37916>
- Perignat, E., & Katz-Buonincontro, J. (2019). STEAM in practice and research: An integrative literature review. *Thinking skills and creativity*, 31, 31-43.
- Plomp, T., & Nieveen, N. (2013). *Educational design research*. Netherlands Institute for Curriculum Development (SLO).
- Porayska-Pomsta, K., Holmes, W., & Nemorin, S. (2024). *The ethics of AI in education*. arXiv. <https://doi.org/10.48550/arXiv.2401>
- Rachmad, Y. E. (2023). Future-Proof Learning: Equitable Education Strategies in a Tech-Savvy World. In *International Publishing of Child Care and Education Policy*. <https://doi.org/10.17605/osf.io/7bhfe>
- Rahmadi, I. F. (2020). Guru dan tantangan pembelajaran abad 21. *Jurnal Pendidikan Teknologi dan Kejuruan*, 17(1), 15–27.
- Rahmawati, A., Arifin, S. and Mustain (2025) “Strategi Diferensiasi Proses pada Pembelajaran PAI di SMAN 1 Gunungsari,” *Journal Of Education, Teaching, and Learning*, 2(2), pp. 299–310.

- Redecker, C. (2020). *European framework for the digital competence of educators: DigCompEdu*. Publications Office of the European Union.
- Redecker, C. (2022). *European framework for the digital competence of educators: DigCompEdu*. European Commission.
- Redecker, C., & Johannessen, Ø. (2013). Changing assessment—Towards a new assessment paradigm using ICT. *European Journal of Education*, 48(1), 79–96.
- Retnawati, H., Arlinwibowo, J., Wulandari, N. F., & Pradani, R. G. (2024). A systematic review of the use of technology in educational assessment practices. *International Journal of Research in Counseling and Education*, 8(1), 1–13.
- Ribble, M. (2021). *Digital citizenship in schools: Nine elements all students should know* (3rd ed.). International Society for Technology in Education.
- Riskiani, G., Annas, A. N., Kobandaha, F., Sultan, I., & Gorontalo, A. (2024). Inovasi Pembelajaran Digital: Tinjauan Literatur Tentang Model Dan Strategi Yang Efektif. *EDUCAZIONE: Jurnal Multidisiplin*, 120–128. <https://j-educa.org/index.php/educazione>
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- Sani, R. A. (2013). *Inovasi pembelajaran*. Bumi Aksara.
- Sari, A. P., & Munir, M. (2024). Pemanfaatan Teknologi Digital dalam Inovasi Pembelajaran untuk Meningkatkan Efektivitas

- Kegiatan di Kelas. *Digital Transformation Technology*, 4(2), 977–983. <https://doi.org/10.47709/digitech.v4i2.5127>
- Schmid, R. *et al.* (2022) “Implementation of technology-supported personalized learning—its impact on instructional quality,” *The Journal of Educational Research*, 115(3), pp. 187–198.
- Serdyukov, P. (2017). Innovation in education: What works, what doesn’t, and what to do about it? *Journal of Research in Innovative Teaching & Learning*, 10(1), 4–33. <https://doi.org/10.1108/JRIT-10-2016-0007>
- Shestakova, I., Morgunov, V., Novikova, E., & Bylieva, D. (2025). Analysis of the Advantages and Disadvantages of Distance Education in the Context of the Accelerated Digital Transformation of Higher Education. *Sustainability (Switzerland)*, 17(10). <https://doi.org/10.3390/su17104487>
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3–10.
- Subagia, I. W. (2020). *Roles Model of Teachers in Facilitating Students Learning Viewed from Constructivist Theories of Learning*. <https://doi.org/10.1088/1742-6596/1503/1/012051>
- Sweller, J. (2011). Cognitive load theory. *Psychology of Learning and Motivation*, 55, 37–76. <https://doi.org/10.1016/B978-0-12-387691-1.00002-8>
- Sweller, J. (2020). Cognitive load theory and educational technology. *Educational Technology Research and Development*, 68(1), 1–16.

- Tan, X. (2025). Artificial intelligence in teaching and teacher professional development: A systematic review. *International Journal of Educational Technology in Higher Education*.
- Timotheou, S., Miliou, O., Dimitriadis, Y., Villagr  Sobrino, S., Giannoutsou, N., Cachia, R., Mart nez Mon s, A., & Ioannou, A. (2023). Impacts of digital technologies on education and factors influencing schools' digital capacity and transformation: A literature review. *Education and Information Technologies*, 28, 6695–6726.
- Timotheou, S., Miliou, O., Dimitriadis, Y., Villagr  Sobrino, S., Giannoutsou, N., Cachia, R., Mart nez Mon s, A., & Ioannou, A. (2023). Impacts of digital technologies on education and factors influencing schools' digital capacity and transformation: A literature review. *Education and Information Technologies*, 28, 6695–6726.
- Tomlinson, C.A. (2017) *How to differentiate instruction in academically diverse classrooms (2nd ed.)*. ASCD.
- Tomlinson, C.A. (2021) *How to differentiate instruction in academically diverse classrooms (3rd ed.)*. ASCD.
- UNESCO. (2018). *UNESCO ICT competency framework for teachers (Version 3)*. UNESCO.
- UNESCO. (2023). *Global education monitoring report 2023: Technology in education*. UNESCO Publishing.
- UNESCO. (2023). *Global education monitoring report 2023: Technology in education: A tool on whose terms?* UNESCO.

- UNESCO. (2024). *AI competency framework for teachers*. UNESCO Publishing.
- Valverde-Berrocoso, J., Fernández-Sánchez, M. R., Revuelta Dominguez, F. I., & Sosa-Díaz, M. J. (2021). The educational integration of digital technologies preCovid-19: Lessons for teacher education. *PLOS ONE*, 16(8), Article e0256283. <https://doi.org/10.1371/journal.pone.0256283>
- Voogt, J., & Roblin, N. P. (2021). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. *Journal of Curriculum Studies*, 53(2), 239–258.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Wiggins, G., & McTighe, J. (2005). *Understanding by Design* (2nd ed.). Association for Supervision and Curriculum Development (ASCD).
- Yakman, G. (2008). *STEAM Education: an overview of creating a model of integrative*.
- Yakman, G., & Lee, H. (2012). Exploring the exemplary STEAM education in the US as a practical educational framework for Korea. *Journal of the korean Association for Science Education*, 32(6), 1072-1086.
- Yim, I. H. Y., Su, J., & Wegerif, R. (2025). STEAM in practice and research in primary schools: A systematic literature review. *Research in Science & Technological Education*, 43(4), 1065–1089.

- Yuni, Y., Hegar Harini, S. E., Parwati, N. W., & Arifannisa, S. P. I. (2025). EvoLearn: Inovasi pembelajaran digital inklusif bagi peserta didik disabilitas di era machine learning. *Repository Global Aksara Pers*, 5(1).
- Zahra, D.R. and Muttaqin, M.F. (2025) “Praktik Diferensiasi Pembelajaran Strategi Pendidikan Inklusi di Sekolah Dasar,” *PEDASUD: Jurnal Ilmu Pendidikan Guru Sekolah Dasar dan Usia Dini*, 02(03), pp. 70–75.
- Zainuddin, Z., Wah Chu, S. K., Shujahat, M., & Perera, C. J. (2020). The impact of gamification on learning and instruction: A systematic review of empirical evidence. *Educational Research Review*, 30, 100326. <https://doi.org/10.1016/j.edurev.2020.100326>
- Zhai, X. (2024). Transforming teachers’ roles and agencies in the era of generative AI: Perceptions, acceptance, knowledge, and practices. arXiv Preprint.
- Zhan, Z., Shen, W., Xu, Z., Niu, S., & You, G. (2022). A bibliometric analysis of the global landscape on STEM education. *Frontiers in Psychology*, 13, 826081.

Buku *Inovasi Pembelajaran di Era Digital* membahas berbagai perubahan dan perkembangan dunia pendidikan yang dipengaruhi oleh kemajuan teknologi. Pembaca diajak memahami bagaimana pemanfaatan perangkat digital, platform pembelajaran daring, serta berbagai media interaktif dapat menciptakan pengalaman belajar yang lebih menarik, fleksibel, dan efektif.

Dengan bahasa yang mudah dipahami, buku ini mengulas berbagai gagasan, strategi, dan tren pembelajaran yang relevan dengan kebutuhan zaman. Cocok untuk masyarakat umum, orang tua, pendidik, maupun siapa saja yang ingin memahami transformasi pendidikan di era digital serta peluang yang dihadapkannya dalam meningkatkan kualitas pembelajaran.

