DAFTAR PUSTAKA

Abd. Syakur, Sugirin, & Widiarni. (2020). The effectiveness of english learning media through google classroom in higher education. *Britain International of Linguistics Arts and Education (BIoLAE) Journal*, *2*(1), 475–483. https://doi.org/10.33258/biolae.v2i1.218

Abdul Ghani, M. T., & Wan Daud, W. A. A. (2018). Adaptation of ADDIE instructional model in developing educational website for language learning. *Global Journal Al Thaqafah*, *8*(2), 7–16. https://doi.org/10.7187/GJAT122018-1

Abdullah, K., Jannah, M., Aiman, U., Hasda, S., Fadilla, Z., Taqwin, N., Masita, Ardiawan, K. N., & Sari, M. E. (2022). Metodologi penelitian kuantitatif., *PT Rajagrafindo Persada*. Yayasan Penerbit Muhammad Zain.

Aiken, L. R. (1985). Three coefficients for analyzing the reliability and validity of ratings. *Educational and Psychological Measurement*, *45*(1), 131–142. https://doi.org/10.1177/0013164485451012

Aji, W. N., & Setiyadi, D. B. P. (2020). Aplikasi TikTok sebagai media pembelajaran keterampilan bersastra. *Jurnal METAFORA: Pembelajaran Dan Sastra*, *6*(2), 147–157. https://doi.org/10.30595/mtf.v6i1.7824

Akcay, H., Durmaz, A., Tuysuz, C., & Feyzioglu, B. (2006). Effects of computer based learning on students' attitudes and achievements towards analytical chemistry. *The Turkish Online Journal of Educational Technology – TOJET*, *5*(1), 5–9. https://files.eric.ed.gov/fulltext/EJ1102437.pdf

Al, M., Rizki, K., & Op, A. F. (2021). Rancang bangun aplikasi e-cuti pegawai berbasis website (studi kasus : pengadilan tata usaha negara). *Jurnal Teknologi Dan Sistem Informasi (JTSI)*, *2*(3), 1–13. http://jim.teknokrat.ac.id/index.php/JTSI

Aljawarneh, S. A. (2020). Reviewing and exploring innovative ubiquitous learning tools in higher education. *Journal of Computing in Higher Education*, *32*(1), 57–73. https://doi.org/10.1007/s12528-019-09207-0

Allahawiah, S., Altarawneh, H., & Almajaly, N. (2023). The impact of virtual classrooms and google sites on teaching computer skills courses: karak university college-jordan. *International Journal of Emerging Technologies in Learning (IJET)*, *18*(07), 194–209. https://doi.org/10.3991/ijet.v18i07.36591

Allela, M. (2021). *Introduction to microlearning*. Commonwealth of Learning. Diakses melalui https://oasis.col.org/server/api/core/bitstreams/07d80b84-b502-4ed4-8f9f-1504d4613084/content

Alti, R. M., Anasi, P. T., Silalahi, D. E., Fitriyah, L. A., Hasanah, H., Akbar, M. R.,

Arifianto, T., Kamaruddin, I., Malahayati, E. N., Hapsari, S., Jubaidah, W., Yanuarto, W. N., Agustianti, R., & Kurniawan, A. (2022). *Media pembelajaran*. PT. Global Eksekutif Teknologi.

Andi, I., Alang, A. H., Madi, Baharuddin, Ahmad, M. A., & Darmawati. (2018). *Metodologi penelitian*. Gunadarma Ilmu.

Andriotis, N. (2018). *What is microlearning: a complete guide for beginners*. elearning industry. https://elearningindustry.com/what-is-microlearning-benefits-best-practices

Arieno, R. N., Muti'ah, M., Hadisaputra, S., & Savalas, L. R. T. (2023). Pengembangan modul praktikum berpedoman pembelajaran berbasis masalah sebagai penunjang kegiatan praktikum kimia materi faktor-faktor yang mempengaruhi laju reaksi siswa kelas xi mia sman 1 lingsar. *Chemistry Education Practice*, *6*(1), 108–113. https://doi.org/10.29303/cep.v6i1.3709

Arifin, S. (2014). Meningkatkan aktivitas belajar dan pemahaman siswa dalam pembelajaran struktur atom melalui strategi peta konsep dengan penulisan jurnal belajar pada kelas x-2 sma negeri 2 tanjung. *Jurnal Inovasi Pendidikan Sains*, *5*(1), 47–56. https://doi.org/10.20527/quantum.v5i1.3292

Ariyana, R. Y., Erma Susanti, & Prita Haryani. (2022). Rancangan storyboard aplikasi pengenalan isen-isen batik berbasis multimedia interaktif. *INSOLOGI: Jurnal Sains Dan Teknologi*, *1*(3), 321–331. https://doi.org/10.55123/insologi.v1i3.375

Azis, T. N. (2019). Strategi pembelajaran era digital. *Annual Conference on Islamic Education and Social Sains (ACIEDSS 2019)*, *1*(2), 308–318. https://pkm.uika-bogor.ac.id/index.php/ACIEDSS/article/view/512/459

Basch, C. H., Hillyer, G. C., & Jaime, C. (2022). COVID-19 on TikTok: harnessing an emerging social media platform to convey important public health messages. *International Journal of Adolescent Medicine and Health*, *34*(5), 367–369. https://doi.org/10.1515/ijamh-2020-0111

Bates, A. W. (Tony). (1997). The impact of technological change on open and distance learning. *Journal of Distance Education*, *18*(1), 93–109. https://doi.org/10.1080/0158791970180108

Bloom, B. S., Max D, E., Furst, E. J., HiIl, W. H., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: a revision of bloom 's taxonomy of educational objectives*. Addison Wesley Lengman Inc.

Branch, R. M. (2009). Instructional design: the addie approach. In *Department of Educational Psychology and Instructional Technology University of Georgia* (Vol. 53, Issue 9). Springer US. https://doi.org/10.1007/978-0-387-09506-6

Bruck, P. A., Motiwalla, L., & Foerster, F. (2012). Mobile learning with micro-content: a framework and evaluation. *BLED Proceedings*, *2*. http://aisel.aisnet.org/bled2012http://aisel.aisnet.org/bled2012/2

Buchem, I., & Hamelmann, H. (2010). Microlearning : a strategy for ongoing

professional development Microcontent and Microlearning. *ELearning Papers*, *21*, 1–15. openeducationeuropa.eu/en/download/file/fid/19530

Cahyadi, R. A. H. (2019). Pengembangan bahan ajar berbasis addie model. *Halaqa: Islamic Education Journal*, *3*(1), 35–42. https://doi.org/10.21070/halaqa.v3i1.2124

Cahyo Nugroho, M. K., & Hendrastomo, G. (2021). Pengembangan media pembelajaran berbasis google sites pada mata pelajaran sosiologi kelas x. *Jurnal Pendidikan Sosiologi Dan Humaniora*, *12*(2), 59. https://doi.org/10.26418/j-psh.v12i2.48934

Chen, L. H. (2010). Web-based learning programs: use by learners with various cognitive styles. *Journal Computers and Education*, *54*(4), 1028–1035. https://doi.org/10.1016/j.compedu.2009.10.008

Chou, S., & Liu, C. (2005). Learning effectiveness in a web-based virtual learning environment: a learner control perspective. *Journal of Computer Assisted Learning*, *21*(1), 65–76. https://doi.org/10.1111/j.1365-2729.2005.00114.x

Comendulli, A. A. (2019). *Generation z in china: their importance in chinese market and how to reach them through social media* [Università Ca' Foscari].

Conde-Caballero, D., Castillo-Sarmiento, C. A., Ballesteros-Yánez, I., Rivero-Jiménez, B., & Mariano-Juárez, L. (2024). Microlearning through TikTok in higher education. An evaluation of uses and potentials. *Education and Information Technologies*, *29*(2), 2365–2385. https://doi.org/10.1007/s10639-023-11904-4

Crooks, S., Stark, P., Carlisle, S., McMullan, J., Copeland, S., Wong, W. Y. A., Blake, D., Lyons, E., Campbell, N., Carter, G., Wilson, C. B., & Mitchell, G. (2023). Evaluation of a co-designed Parkinson's awareness audio podcast for undergraduate nursing students in Northern Ireland. *BMC Nursing*, *22*(1), 370. https://doi.org/10.1186/s12912-023-01544-x

Culajara, C. J. (2022). Maximizing the use of google sites in delivering instruction in physical education classes. *Physical Education and Sports: Studies and Research*, *1*(2), 79–90. https://doi.org/10.56003/pessr.v1i2.115

De Gagne, J. C., Park, H. K., Hall, K., Woodward, A., Yamane, S., & Kim, S. S. (2019). Microlearning in health professions education: scoping review. *JMIR Medical Education*, *5*(2), e13997. https://doi.org/10.2196/13997

Díaz Redondo, R. P., Caeiro Rodríguez, M., López Escobar, J. J., & Fernández Vilas, A. (2021). Integrating micro-learning content in traditional e-learning platforms. *Multimedia Tools and Applications*, *80*(2), 3121–3151. https://doi.org/10.1007/s11042-020-09523-z

Escamilla-Fajardo, P., Alguacil, M., & López-Carril, S. (2021). Incorporating TikTok in higher education: pedagogical perspectives from a corporal expression sport sciences course. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *28*(2021), 100302. https://doi.org/10.1016/j.jhlste.2021.100302

Farha Shaafi, N., Yusof, M. M. M., Khalipah, N. N. M., & Hanif, N. M. (2022). Investigating TikTok as a learning tool for learning chemistry: a study among secondary school students in malaysia. *Journal of Creative Practices in Language Learning and Teaching (CPLT)*, *11*(1), 2023.

Febriana, B. W. (2020). *Pengembangan media pembelajaran teka-teki kimia (ttk) berbasis android pada materi struktur atom untuk peserta didik kelas x sma/ma/smk* [Universitas Islam Diponegoro].

Fedorova, O., Shumskyi, O., Golikova, O., Kutsenko, I., Serdiuk, N., & Zahorodna, O. (2022). Microlearning in forming the students' english competencies with vr involvement. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, *13*(1Sup1), 388–402. https://doi.org/10.18662/brain/13.1Sup1/326

Fikriadi, R. S., Zufria, I., & Nasution, A. B. (2022). Penerapan augmented reality berbasis android sebagai media pembelajaran pendidikan seni wayang dan tarian jawa. *Rabit : Jurnal Teknologi Dan Sistem Informasi Univrab*, *7*(1), 71–76. https://doi.org/10.36341/rabit.v7i1.2189

Fristi, R., Linda, R., & Azmi, J. (2020). Penerapan strategi belajar SQ4R untuk meningkatkan hasil belajar peserta didik pada pokok bahasan struktur atom di kelas x mia sma muhammadiyah 1 pekanbaru. *Jurnal Pendidikan Kimia Universitas Riau*, *5*(1), 33. https://doi.org/10.33578/jpk-unri.v5i1.7171

Gagne, R. M., Briggs, L. J., & Wager, W. W. (1992). Principles of instructional design. In C. Townsend (Ed.), *Book* (4th ed.). Harcourt Brace College. https://www.hcs64.com/files/Principles of instructional design.pdf

Hayes, C., Stott, K., Lamb, K. J., & Hurst, G. A. (2020). "Making every second count": utilizing tiktok and systems thinking to facilitate scientific public engagement and contextualization of chemistry at home. *Journal of Chemical Education*, *97*(10), 3858–3866. https://doi.org/10.1021/acs.jchemed.0c00511

Hsu, W.-Y., Lin, S. S. J., Chang, S.-M., Tseng, Y.-H., & Chiu, N.-Y. (2015). Examining the diagnostic criteria for Internet addiction: Expert validation. *Journal of the Formosan Medical Association*, *114*(6), 504–508. https://doi.org/10.1016/j.jfma.2014.03.010

Indiani, N. (2022). Pemahaman struktur atom pada model atom niels bohr. *Jurnal Pendidikan Kimia Indonesia*, *1*(1), 1–5. https://www.jurnal.syekhnurjati.ac.id/index.php/respec/article/view/12587

Ischak, N. I., Domu, S. A., Botutihe, D. N., Salimi, Y. K., Rumape, O., Aman, L. O., & Najmah, N. (2023). Deskripsi kemampuan kognitif siswa pada materi struktur atom. *Jambura Journal of Educational Chemistry*, *5*(2), 150–158. https://doi.org/10.34312/jjec.v5i2.12832

Jonnalagadda, R., Singh, P., Gogineni, A., Reddy, R. R. S., & Reddy, H. B. (2022). Developing, implementing and evaluating training for online graduate teaching assistants based on addie model. *Asian Journal of Education and Social Studies*, *28*(1), 1–10. https://doi.org/10.9734/ajess/2022/v28i130664

Jumila, J., Paristiowati, M., Zulhipri, Z., & Allanas, E. (2018). Analisis literasi digital (ict) peserta didik melalui pemanfaatan web kahoot dalam pembelajaran koloid. *JRPK: Jurnal Riset Pendidikan Kimia*, *8*(2), 36–41. https://doi.org/10.21009/JRPK.082.04

Kao, C. P., & Tsai, C. C. (2009). Teachers' attitudes toward web-based professional development, with relation to internet self-efficacy and beliefs about web-based learning. *Journal of Computers and Education*, *53*(1), 66–73. https://doi.org/10.1016/j.compedu.2008.12.019

Kapp, K. M., & Defelice, R. A. (2019). *Microlearning: short and sweet*. American Society for Training and Development.

Kennedy, M. J., Hirsch, S. E., Dillon, S. E., Rabideaux, L., Alves, K. D., & Driver, M. K. (2016). Using content acquisition podcasts to increase student knowledge and to reduce perceived cognitive load. *Teaching of Psychology*, *43*(2), 153–158. https://doi.org/10.1177/0098628316636295

Khalifa, M., & Lam, R. (2002). Web-based learning: effects on learning process and outcome. *IEEE Transactions on Education Journal*, *45*(4), 350–356. https://doi.org/10.1109/TE.2002.804395

Khlaif, Z. N., & Salha, S. (2021). Using TikTok in education: a form of micro-learning or nano-learning?. *Interdisciplinary Journal of Virtual Learning in Medical Sciences*, *12*(3), 213–218. https://doi.org/10.30476/ijvlms.2021.90211.1087

Kurniawan, N., & Sanjaya, R. (2013). *Website praktis dengan google sites*. Elex Media Komputindo.

Magdalena, I., Fatakhatus Shodikoh, A., Pebrianti, A. R., Jannah, A. W., Susilawati, I., & Tangerang, U. M. (2021). Pentingnya media pembelajaran untuk meningkatkan minat belajar siswa sdn meruya selatan 06 pagi. *EDISI : Jurnal Edukasi Dan Sains*, *3*(2), 312–325. https://ejournal.stitpn.ac.id/index.php/edisi

Meade, O., Bowskill, D., & Lymn, J. S. (2011). Pharmacology podcasts: a qualitative study of non-medical prescribing students' use, perceptions and impact on learning. *BMC Medical Education*, *11*(1), 2. https://doi.org/10.1186/1472-6920-11-2

Meduri, N. R. H., Firdaus, R., & Fitriawan, H. (2022). Efektivitas aplikasi website dalam pembelajaran untuk meningkatkan minat belajar peserta didik. *Jurnal Akademika*, *11*(02), 283–294. https://doi.org/10.34005/akademika.v11i02.2272

Minarni, M., & Muslim, M. A. N. (2018). Multimedia pembelajaran interaktif budaya alam minangkabau berbasis web untuk siswa kelas 3 (studi kasus: sdn 10 bandar buat). *JURNAL TEKNOIF*, *6*(2), 110–119. https://doi.org/10.21063/JTIF.2018.V6.2.110-119

Mohammed, G. S., Wakil, K., & Nawroly, S. S. (2018). The effectiveness of microlearning to improve students' learning ability. *International Journal of*

Educational Research Review, *3*(3), 32–38. https://doi.org/10.24331/ijere.415824

Mufida, L., Subandowo, M. S., & Gunawan, W. (2022). Pengembangan e-modul kimia pada materi struktur atom untuk meningkatkan hasil belajar. *JIPI (Jurnal Ilmiah Penelitian Dan Pembelajaran Informatika)*, *7*(1), 138–146. https://doi.org/10.29100/jipi.v7i1.2498

Muhammad Hasan, Milawati, Darodjat, Harahap, T. K., Tahrim, T., Anwari, A. M., Rahmat, A., Masdiana, & P, I. M. I. (2021). *Media pembelajaran*. Tahta Media Group Makna.

Muhson, A. (2010). Pengembangan media pembelajaran berbasis teknologi informasi. *Jurnal Pendidikan Akuntansi Indonesia*, *8*(2), 1–10. https://doi.org/10.21831/jpai.v8i2.949

Mukti, W. M., & Anggraeni, Y. B. P. N. Z. D. (2020). Media pembelajaran fisika berbasis web menggunakan google sites pada materi listrik statis. *Webinar Pendidikan Fisika*, 51–59.

Nikou, S. A., & Economides, A. A. (2018). Mobile-based micro-learning and assessment: impact on learning performance and motivation of high school students. *Journal of Computer Assisted Learning*, *34*(3), 269–278. https://doi.org/10.1111/jcal.12240

Nugraha, H., Rusmana, A., Khadijah, U., & Gemiharto, I. (2021). Microlearning sebagai upaya dalam menghadapi dampak pandemi pada proses pembelajaran. *JINOTEP (Jurnal Inovasi Dan Teknologi Pembelajaran): Kajian Dan Riset Dalam Teknologi Pembelajaran*, *8*(3), 225–236. https://doi.org/10.17977/um031v8i32021p225

Panina, T. (2019). *Micro-learning educational approach: the main characteristics of micro-learning, ability of implementation in lut, barriers and future perspectives*.

Park, Y., & Kim, Y. (2018). A design and development of micro-learning content in e-learning system. *International Journal on Advanced Science, Engineering and Information Technology*, *8*(1), 56. https://doi.org/10.18517/ijaseit.8.1.2698

Penfield, R. D., & Giacobbi, Jr., P. R. (2004). Applying a score confidence interval to aiken's item content-relevance index. *Measurement in Physical Education and Exercise Science*, *8*(4), 213–225. https://doi.org/10.1207/s15327841mpee0804_3

Prisanti, A. A., & Faidah, M. (2019). Kelayakan media pembelajaran powtoon pada sub kompetensi pegeritingan rambut teknik dasar siswa kelas xi tata kecantikan rambut. *E-Journal UNESA*, *8*(1), 14–17. https://ejournal.unesa.ac.id/index.php/jurnal-tata-rias/article/view/26520/24288

Rafli, M. A., & Adri, M. (2022). Pengembangan micro-learning pada mata kuliah kewirausahaan di universitas negeri padang berbasis media. *Jurnal*

Pendidikan Tambusai, *6*(1), 1149–1156. https://doi.org/10.31004/jptam.v6i1.3044

Ramasundrum, S., & Sathasivam, R. V. (2022). Effect of Google sites on science achievement among year five students. *MOJES: Malaysian Online Journal of Educational Sciences*, *10*(2), 12–34. https://mjlis.um.edu.my/index.php/MOJES/article/view/36062

Ramdani, N. S., Nugraha, H., & Hadiapurwa, A. (2021). Potensi pemanfaatan media sosial tiktok sebagai media pembelajaran dalam pembelajaran daring. *Jurnal Akademika*, *10*(02), 425–436. https://doi.org/10.34005/akademika.v10i02.1406

Rangkuti, A. N. (2016). *Metode pendidikan penelitian pendekatan kuantitatif, kualitatif, ptk, dan penelitian pengembangan*. Citapustaka Media.

Richey, R. C., & Klein, J. D. (2007). *Design and development research* (L. Akers (ed.)). Lawrence Erlbaum Associates Inc.

Riduwan, R. (2015). Belajar mudah penelitian untuk guru-karyawan dan peneliti pemula(10th ed.). Alfabeta.

Roberd, A., & Roslan, R. (2022). Social media and primary school science: examining the impact of tiktok on year 5 students' performance in light energy. *International Journal of Social Learning (IJSL)*, *2*(3), 366–378. https://doi.org/10.47134/ijsl.v2i3.173

Rockhill, C., Pastore, D., & Johnston, D. (2019). The effectiveness of podcasts in sport management education. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *25*(July), 100211. https://doi.org/10.1016/j.jhlste.2019.100211

Romanenko, Y. N., Solodovnikova, E., & Maksimenko, N. (2023). Microlearning as a new method of teaching soft skills to university students. *Frontiers in Education*, *8*(May). https://doi.org/10.3389/feduc.2023.1177516

Salleh, D., Khairudin, N., & Ibrahim, M. (2022). Micro learning: motivating students' learning interests. *Jurnal Psikologi Malaysia*, *36*(1), 153–162.

Sari, K. V., & Ulianas, A. (2021). Studi literatur penggunaan bahan ajar berorientasi chemistry triangle pada materi kimia terhadap hasil belajar peserta didik. *Ranah Research : Journal of Multidisciplinary Research and Development*, *3*(2), 88–94. https://doi.org/10.38035/rrj.v3i2.365

Sari, K. W., Saputro, S., & Hastuti, B. (2014). Pengembangan game edukasi kimia berbasis role playing game (rpg) pada materi struktur atom sebagai media pembelajaran mandiri untuk siswa kelas x sma di kabupaten purworejo. *Jurnal Pendidikan Kimia*, *3*(2), 96–104.

Sari, W. N., W, S. S., & Fajrie, N. (2024). Google sites-based educational web development in ecosystem learning materials for grade v elementary schools in winong district. *Uniglobal of Journal Social Sciences and Humanities*, *3*(1), 51–57. https://doi.org/https://doi.org/10.53797/ujssh.v3i1.8.2024

Semingson, P., Crosslin, M., & Dellinger, J. T. (2015). Microlearning as a tool to

engage students in online and blended learning. *Society for Information Technology & Teacher Education International Conference*, *2015*(1), 474–479.

Silahuddin, A. (2022). Pengenalan klasifikasi, karakteristik, dan fungsi media pembelajaran ma al-huda karang melati. *Idaarotul Ulum (Jurnal Prodi MPI)*, *4*(2), 162–175.

Su, Y., Baker, B. J., Doyle, J. P., & Yan, M. (2020). Fan engagement in 15 seconds: athletes' relationship marketing during a pandemic via TikTok. *International Journal of Sport Communication*, *13*(3), 436–446. https://doi.org/10.1123/ijsc.2020-0238

Sugiyono. (2013). *Metode penelitian kuantitatif, kualitatif dan r&d* (19th ed., Issue April). Alfabeta.

Sung, A., Leong, K., & Lee, C. (2023). A study of learners' interactive preference on multimedia microlearning. *Journal of Work-Applied Management*, *15*(1), 96–119. https://doi.org/10.1108/JWAM-01-2022-0007

Sweller, J. (1988). Cognitive load during problem solving: effects on learning. *Journal of Cognitive Science*, *12*(2), 257–285. https://doi.org/10.1016/0364-0213(88)90023-7

Team Jobstreet. (2023). *Google Sites: definisi, kegunaan, kelebihan, dan cara membuatnya*. Jobstreet by Seek. https://www.jobstreet.co.id/id/career-advice/article/google-sites-definisi-kegunaan-kelebihan-cara-membuat

Teeter, R., & Barksdale, K. (2009). *Google Sites & Chrome for Dummies*. Wiley Publishing Inc.

Tira Nur Fitria. (2022). Microlearning in teaching and learning process: a review. *CENDEKIA: Jurnal Ilmu Sosial, Bahasa Dan Pendidikan*, *2*(4), 114–135. https://doi.org/10.55606/cendikia.v2i4.473

Titus, A. K., Nasrul, R. H., & Fatim, N. (2019). Rancang bangun aplikasi inventaris berbasis website pada kelurahan bantengan. *Prosiding Seminar Nasional Teknologi Informasi Dan Komunikasi (SENATIK)*, *2*(1), 71–75.

Torgerson, C., & Iannone, S. (2020). *Designing microlearning*. American Society for Training and Development.

Torres Kompen, R., Edirisingha, P., Canaleta, X., Alsina, M., & Monguet, J. M. (2019). Personal learning Environments based on Web 2.0 services in higher education. *Telematics and Informatics*, *38*, 194–206. https://doi.org/10.1016/j.tele.2018.10.003

Turkoguz, S. (2012). Learn to teach chemistry using visual media tools. *Journal of Chemistry Education Research and Practice*, *13*(4), 401–409. https://doi.org/10.1039/C2RP20046E

Usman, & Basyiruddin, M. (2002). *Media pembelajaran*. Ciputat Press.

Veronika Asri Tandirerung, & Mangesa, R. T. (2022). Pengembangan e-learning

berbasis edukati pada sekolah menengah atas. *Information Technology Education Journal*, *1*(3), 46–49. https://doi.org/10.59562/intec.v1i3.252

Waldia, N., Sonawane, S., Mali, M., & Jadhav, V. (2023). Microlearning strategies for teacher professional development in the era of fourth industrial revolution in India. *Journal of E-Learning and Knowledge Society*, *19*(3), 74–81. https://doi.org/10.20368/1971-8829/1135866

Waluyo, J. (2021). Persepsi peserta pelatihan terhadap pemanfaatan google sites dalam pembelajaran. *Andragogi: Jurnal Diklat Teknis Pendidikan Dan Keagamaan*, *9*(2), 190–199. https://doi.org/10.36052/andragogi.v9i2.246

Warsih, Yusak, Y., & Pohan, L. A. (2021). Implementasi STAD menggunakan modul dan handout terhadap hasil belajar siswa pada materi struktur atom. *CHEDS: Journal of Chemistry, Education, and Science Vol.*, *5*(1), 33–38. https://doi.org/10.30743/cheds.v3i1.3890

Widiyaningtyas, T., & Widiatmoko, A. (2014). Media pembelajaran berbasis web pada mata pelajaran kimia. *Jurnal Tekno*, *21*, 47–51. https://journal.um.ac.id/index.php/tekno/article/viewFile/4661/3907

Writtenhouse, S. (2021). *What is google sites, and when should you use it?* HowtoGeek. https://www.howtogeek.com/749191/what-is-google-sites-and-when-should-you-use-it/

Wulandari, C., Susilaningsih, E., & Kasmui, K. (2018). Estimasi validitas dan respon siswa terhadap bahan ajar multi representasi : definitif, makroskopis, mikroskopis, simbolik pada materi asam basa. *Phenomenon : Jurnal Pendidikan MIPA*, *8*(2), 165–174. https://doi.org/10.21580/phen.2018.8.2.2498

Yang, F. Y., & Tsai, C. C. (2008). Investigating university student preferences and beliefs about learning in the web-based context. *Journal of Computers and Education*, *50*(4), 1284–1303. https://doi.org/10.1016/j.compedu.2006.12.009

Yang, S., Zhao, Y., & Ma, Y. (2019). Analysis of the reasons and development of short video application-taking tik tok as an example. *In Proceedings of the 2019 9th International Conference on Information and Social Science, ICISS*, 12–14. https://doi.org/10.25236/iciss.2019.062

Yellepeddi, V. K., & Roberson, C. (2016). The use of animated videos to illustrate oral solid dosage form manufacturing in a pharmaceutics course. *American Journal of Pharmaceutical Education*, *80*(8), 141. https://doi.org/10.5688/ajpe808141

Yin, J., Goh, T.-T., Yang, B., & Xiaobin, Y. (2021). Conversation technology with micro-learning: the impact of chatbot-based learning on students' learning motivation and performance. *Journal of Educational Computing Research*, *59*(1), 154–177. https://doi.org/10.1177/0735633120952067

Zhang, X., Wu, Y., & Liu, S. (2019). Exploring short-form video application addiction: socio-technical and attachment perspectives. *Journal of Telematics and Informatics*, *42*(June), 101243. https://doi.org/10.1016/j.tele.2019.10124