Edcomtech: Jurnal Kajian Teknologi Pendidikan
Vol 9, No 1, April 2024, pp. 14-26
https://doi.org/10.17977/um039v9i12024p14-26
pISSN: 2548-9879 (print) eISSN: 2599-2139 (online)
http://journal-fip.um.ac.id/index.php/edcomtech

Trends in Self-Regulated Learning (SRL) in Indonesia Based on Web of Science (WOS) Data

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Article Info
Article history:
Received 01-03-2024
Revised 01-07-2024
Accepted 23-07-2024
Published 21-09-2024

How to cite:
Oktaviani, H. I., & Kuswandi, D. (2024). Trends in Self-Regulated Learning (SRL) in Indonesia Based on Web of Science (WOS) Data. *Edcomtech: Jurnal Kajian Teknologi Pendidikan*, 9(1), 14–26. https://doi.org/10.17977/um039v9i12024p14-26

Abstrak
Studi ini dilakukan untuk mengungkapkan tren dan hasil penelitian tentang pendekatan SRL yang diterbitkan antara tahun 2008 sampai dengan 2023 dengan metode analisis deskriptif review untuk mengungkap tren terkait kinerja artikel dan jurnal, pola kolaborasi, dan konstituen penelitian. Hasil penelitian menunjukkan bahwa penerapan SRL meningkat signifikan pada tahun 2018, seiring dengan pergeseran menuju pembelajaran daring akibat dampak pandemi COVID-19. SRL sangat relevan dalam pembelajaran di era digital karena mendorong kemandirian belajar, pengelolaan waktu, dan pemanfaatan teknologi secara optimal, sehingga pembelajaran lebih fleksibel dan adaptif. Pendekatan ini tetap menjadi tren hingga tahun 2023, dengan publikasi terbanyak dalam prosiding penelitian pendidikan.

Kata kunci: Self-regulated, Pembelajaran, Analisis Deskriptive

Abstract
This study was conducted to reveal trends and research findings on the SRL approach published between 2008 and 2023, using descriptive review analysis to uncover trends related to article and journal performance, collaboration patterns, and research constituents. The findings indicate that the implementation of SRL increased significantly in 2018, coinciding with the shift to online learning due to the impact of the COVID-19 pandemic. SRL is highly relevant in digital-era learning as it fosters self-directed learning, time management, and the optimal use of technology, leading to more flexible and adaptive learning experiences. Therefore, this approach remained a trend through 2023, with the highest number of publications in educational research proceedings.

Keywords: Self-Regulated Learning, Analysis, Descriptive Analysis Review

INTRODUCTION

Learning that prioritizes students as the central figures in the educational process is increasingly prevalent today. The aim is to move beyond the traditional model where teachers are the sole sources of knowledge; instead, students should actively construct

the concepts they learn. This shift in the learning paradigm moves from a teacher-centered approach to a student-centered model, which requires students to become self-regulated learners who take responsibility for controlling and monitoring their learning processes (Alharbi, Henskens, & Hannaford, 2012). Implementing a student-centered approach, facilitated by various educational stakeholders, can lead to more effective, directed, and meaningful student learning experiences (Majitol & Yunus, 2023). Research by Rusdiah (2021) indicates that self-regulated learning provides students with greater opportunities for self-actualization and personal development. Additionally, student satisfaction in solving problems and collaborating with peers is crucial for fostering high motivation in online learning environments.

Self-Regulated Learning (SRL) encompasses independent learning through metacognition, motivation, self-regulation, and self-evaluation. To facilitate this process, effective learning tools are needed that activate metacognitive processes and guide students through motivational learning steps (2018). Consequently, SRL can positively impact students, provided that the learning process is appropriately designed to achieve the intended educational outcomes. Self-regulated learning (SRL) is defined as the process by which learners actively manage their educational experiences by setting goals, monitoring their progress, and reflecting on their outcomes. This approach empowers students to take control of their learning, thereby fostering independence and motivation (Teng & Zhang, 2020). SRL involves cognitive strategies such as organizing and summarizing information, metacognitive strategies like planning and self-monitoring, and behavioral strategies that include time management and seeking assistance when necessary. By cultivating self-regulation skills, learners become more effective and adaptable, enabling them to overcome challenges and attain academic success.

Moreover, self-regulated learning aligns with the constructivist approach, which posits that learning occurs when students construct their own meanings through interactions with peers or by applying new knowledge outside the classroom (Suprapto, 2016). This concept emphasizes students' abilities to manage their thoughts, behaviors, and emotions during their learning experiences, paralleling the principles of student-centered learning. Furthermore, SRL requires students not only to select what they learn but also to comprehend the meanings behind how and why they learn. Thus, research related to the application of SRL, particularly in the context of Indonesia, is essential for enhancing the overall learning process.

Self-Regulated Learning (SRL) has emerged as a critical topic in the field of education, particularly in response to the growing prominence of digital learning paradigms. The significant increase in the application of SRL aligns with the shift towards online and blended learning models, which became especially prevalent following the COVID-19 pandemic (Panadero et al., 2018). In recent years, this approach has gained further popularity. Research indicates that SRL skills are particularly strong in online learning environments, as students are better equipped to manage their time, stay motivated, and minimize distractions effectively (Broadbent et al., 2020). During the pandemic, students who employed SRL strategies were more adept at adapting to the evolving nature of learning modalities (Korkmaz & Toraman, 2020). Furthermore, additional studies have highlighted the significant contribution of SRL to academic outcomes, particularly in technology-enhanced learning settings (Dignath & Büttner, 2021). Instructional strategies that support SRL development, such as project-based and

problem-based collaborative learning, have proven to be effective in fostering these skills (Pardo et al., 2019). The growing trend of SRL provides valuable insights into its importance and efficacy in enhancing the learning process.

METHOD

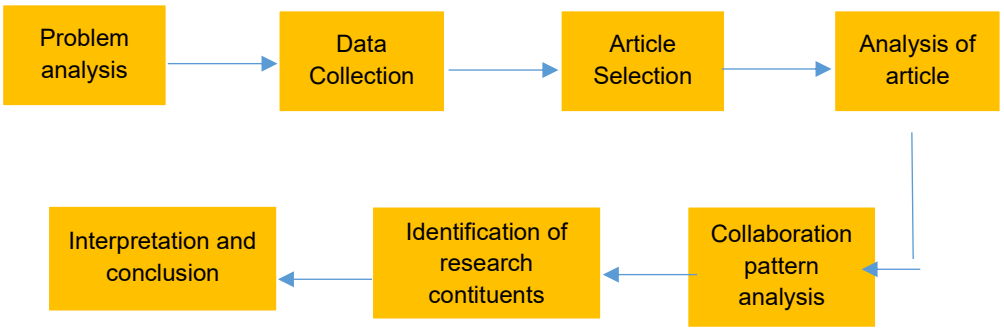

Figure 1. Method of Descriptive Review

In this article, the method used is a descriptive review (Snyder, 2019), a systematic approach for assessing and analyzing literature to identify trends, collaboration patterns, and research constituents related to Self-Regulated Learning (SRL) published from 2008 to 2023. This method involves several key steps:

1. Problem Analysis: The initial step involves identifying Self-Regulated Learning (SRL) as an essential topic due to the evolving learning paradigm. The characteristics of new learner generations, industrial advancements, and the emphasis on meaningful, autonomous learning approaches provide the rationale for SRL's application. Therefore, this article aims to illustrate how this theme has become a research trend, particularly in Indonesian scholarly publications.
2. Data Collection: Identifying and gathering relevant articles within the specified timeframe. These articles are primarily sourced from educational research proceedings and indexed academic journals.
3. Article Selection: Articles are selected based on specific criteria, such as relevance to the SRL theme and digital-era online learning.
4. Analysis of Article and Journal Performance: Conducting a quantitative analysis of the number of publications per year, trends in publication growth, and journal performance metrics to identify publication peaks, such as the increase observed in 2018.
5. Collaboration Pattern Analysis: Mapping collaborations between institutions or countries involved in SRL research.
6. Identification of Research Constituents: Identifying key research constituents, such as university affiliations, that dominate SRL research (e.g., Sebelas Maret University and Universitas Indonesia).
7. Interpretation and Conclusion: Synthesizing the analysis results to understand SRL's relevance in the digital era, particularly in the context of online and self-directed learning.

RESULTS AND DISCUSSION

Based on the search results on the Web Of Science (WOS) database which is specifically for affiliates in Indonesia from 2008 to 2023, it shows that the SRL trend was widely discussed in 2017 with 11 articles and 2018 with 23 articles. This is related to the development of the industrial revolution 4.0 era which expects the use of technology, creativity and innovation in education and learning (Zubaidah, 2020).

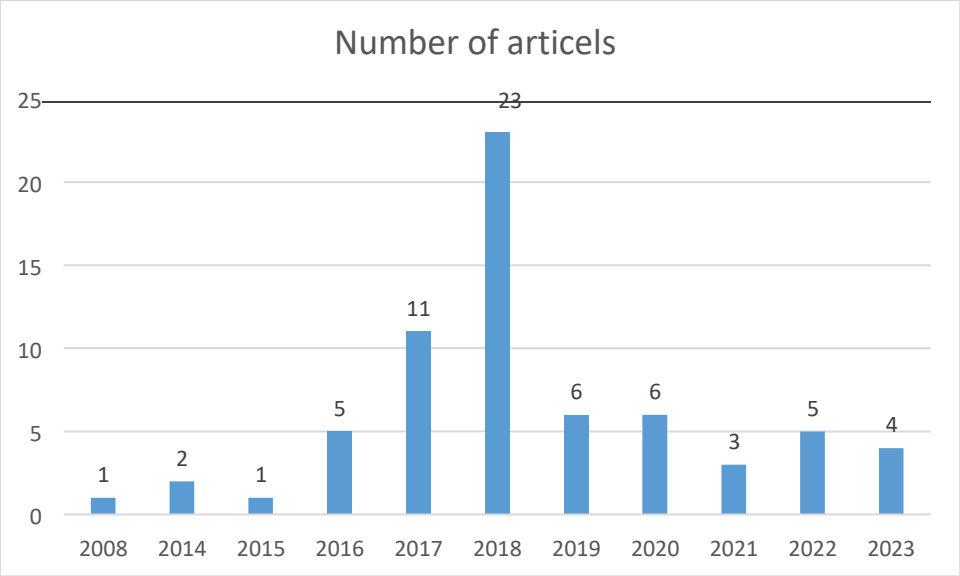

Figure 2. Number of articles from 2008 to 2023

The Industrial Revolution 4.0 era integrates automation with advanced information technologies such as Artificial Intelligence, big data, the Internet of Things, and adaptive technology. This industrial transformation has significantly impacted the implementation of cutting-edge technologies, including in Indonesia, through various programs aimed at advancing the industrial sector (Padmajati, 2020). Self-Regulated Learning (SRL) involves metacognition (thinking about one's own thinking), strategic actions (planning, monitoring, and evaluating personal progress), and the motivation to learn. Students who practice SRL are able to manage their learning and develop effective learning strategies.

In the context of the Industrial Revolution 4.0, SRL is considered critical in helping individuals adapt rapidly to the continuous advancements in technology and education. As illustrated by the graph, as early as 2008, journals had already started discussing the SRL approach. By 2018, there was a marked shift in the learning paradigm, with increased attention to developing independent learning skills in response to advancements in educational technology and the rise of online learning platforms. The year 2018 also witnessed significant growth in digital education, such as Learning Management Systems (LMS) and other online platforms, which became widely adopted.

This shift demands that students possess the ability to manage their learning processes independently, including setting goals, monitoring progress, and conducting self-evaluations (Schunk & Greene, 2018). Furthermore, the increasing emphasis on student-centered learning, critical thinking skills, self-management, and the

characteristics of the 21st-century learner have contributed to the rise in research and publications on the SRL approach in 2018.

In recent years, the evolution of the Industrial Revolution 4.0 has further intensified, with greater integration of Artificial Intelligence, machine learning, and big data analytics across sectors, including education. These technological advancements have not only accelerated innovation but have also shaped new educational models that demand adaptive and autonomous learning skills (Schwab, 2017; OECD, 2019). The rapid shift to digital platforms, especially during and after the COVID-19 pandemic, has underscored the importance of Self-Regulated Learning (SRL) as students and educators increasingly rely on technology-mediated environments for teaching and learning (Bond et al., 2021; Daniel, 2020).

This digital transformation has resulted in a substantial impact on educational practices globally, pushing the adoption of Learning Management Systems (LMS), remote learning tools, and personalized learning applications (Salmon, 2019; Trust & Whalen, 2020). In Indonesia, these changes are reflected in the government's initiatives to advance digital literacy and promote online education, making SRL a critical skill for students to thrive in these environments (Padmajati, 2020).

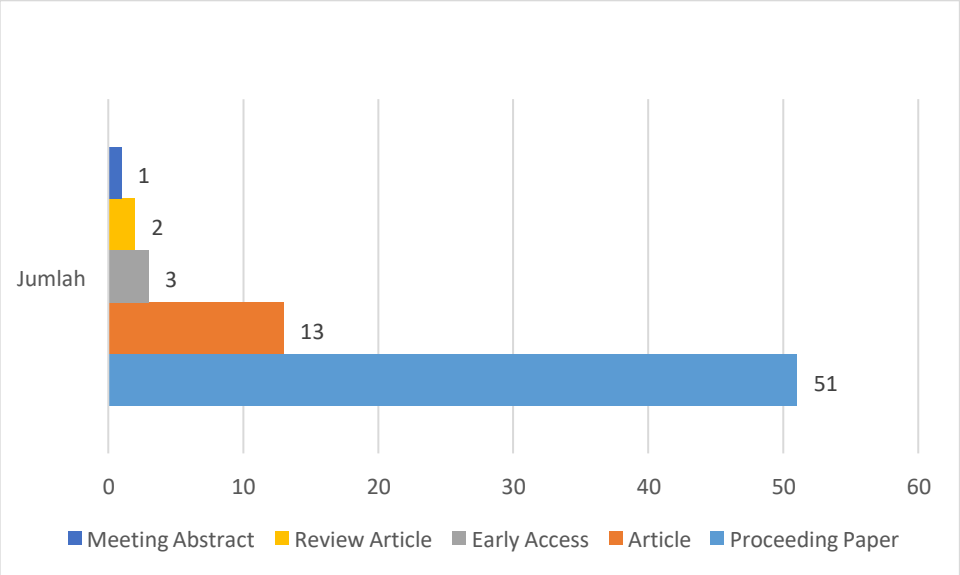

Figure 3. Types of Documents that Publish SRL

An analysis of the types of documents published on self-regulated learning (SRL) reveals the following distribution: one meeting abstract, two review articles, three early access documents, thirteen journal articles, and fifty-one proceeding papers. These findings indicate that the most prevalent document type is international conference proceedings articles (Wang & Yang, 2021; Schunk & Zimmerman, 2018; Zhang & Zhao, 2022; Tsai & Chai, 2020).

The dominance of international proceedings articles in SRL-related publications can be attributed to several key factors. First, SRL is a relevant and widely discussed topic across various fields, including education, psychology, and educational technology, making it a focal point at international conferences. Conferences serve as an important

platform for researchers to present their findings and engage with new ideas from other participants. Second, proceedings articles are often preferred because they have a quicker publication process compared to journal articles, enabling researchers to rapidly disseminate their findings to the global scientific community—an important consideration in an evolving field like SRL. Third, the large volume of proceedings also reflects the high number of international conferences dedicated to SRL. This trend underscores the significance and widespread application of SRL across diverse educational settings, from primary to higher education, as well as in technology-enhanced learning environments (Tarumasely, 2024).

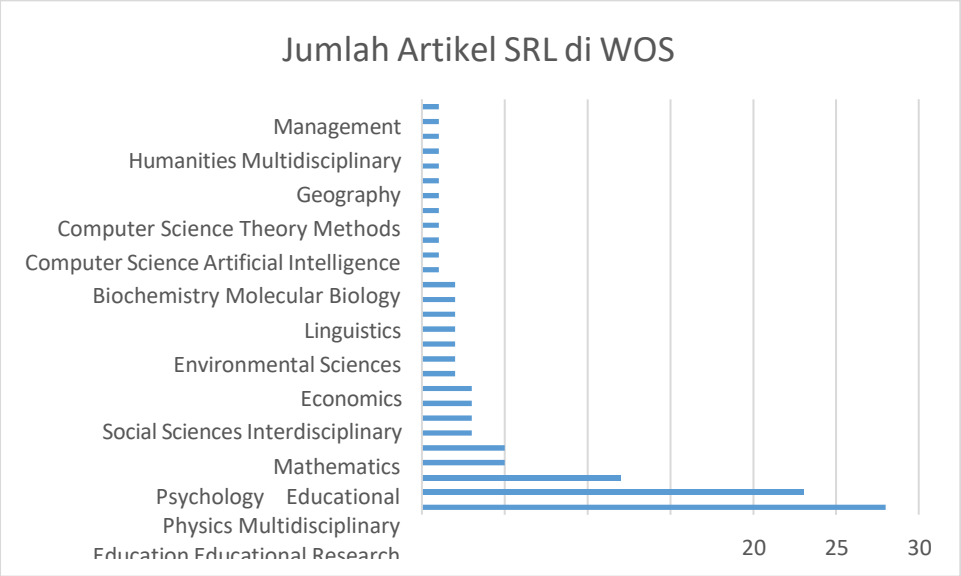

Figure 4. Number of SRL Articles in WOS

The figure presents the distribution of article topics related to self-regulated learning (SRL) indexed in the Web of Science, categorized as follows: Management (1 article), Multidisciplinary Humanities (1 article), Geography (1 article), Computer Science Theory & Methods (1 article), Computer Science Artificial Intelligence (1 article), Biochemistry & Molecular Biology (1 article), Linguistics (2 articles), Environmental Science (2 articles), Economics (2 articles), Interdisciplinary Social Sciences (3 articles), Mathematics (3 articles), Educational Psychology (3 articles), Multidisciplinary Physics (12 articles), Educational Disciplines (23 articles), and Educational Research (28 articles). The data indicate that the field of education, particularly within the categories of educational disciplines and educational research, contains the highest concentration of SRL discussions. This suggests that SRL is viewed as a significant innovation in education, particularly in enhancing students' independence in learning (Taranto & Buchanan, 2020).

The emphasis on SRL in today's educational landscape encourages students to develop competencies that are essential for lifelong learning. These competencies

include goal-setting, self-assessment, and resilience in adapting to new digital tools (Schunk & Greene, 2018). As students navigate these increasingly complex and autonomous learning environments, SRL equips them with the strategies needed to take control of their learning, manage their time effectively, and engage with content meaningfully, despite physical separation from traditional classroom structures (Panadero, 2017).

Moreover, the focus on SRL aligns with 21st-century skill requirements, which prioritize critical thinking, adaptability, and digital literacy. Consequently, SRL research has gained substantial traction in recent publications, reflecting a broader trend toward preparing students not only to engage with current educational technologies but also to become self-directed learners capable of thriving in the dynamic, technology-driven future (Azevedo et al., 2018; Dabbagh & Kitsantas, 2012).

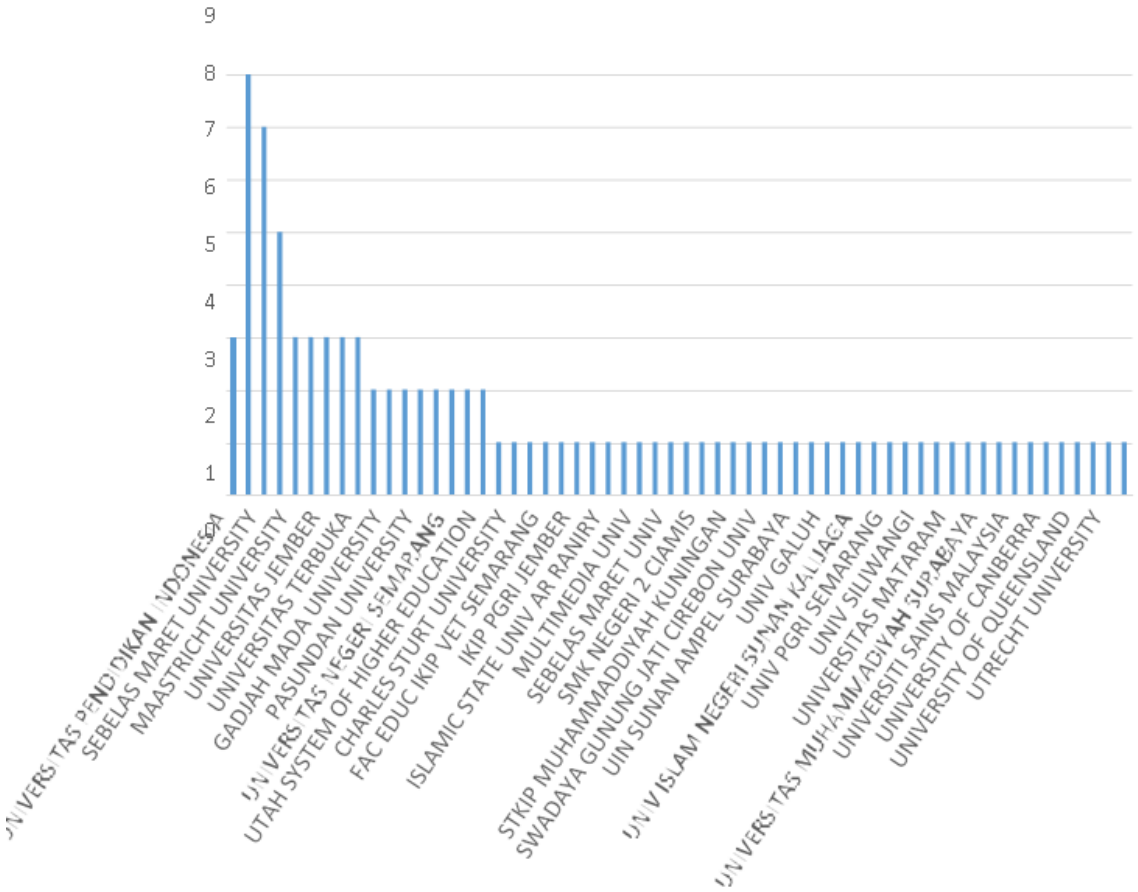

Figure 5. Number of articles based on affiliation

According to the data, the institutions with the highest number of published articles are Sebelas Maret University and Universitas Indonesia, as shown in the following table. Based on the data, Sebelas Maret University and Universitas Indonesia emerge as the institutions with the highest number of published articles related to Self-Regulated Learning (SRL). This trend indicates that both universities are at the forefront of SRL research, making significant contributions to the academic discourse on this learning approach. One factor influencing this is the research focus of these universities, which

have dedicated research programs in the fields of educational psychology, learning theories, and pedagogical innovations, including SRL. This focus is reflected in their high publication output.

Table 1. Journals and Proceedings that publish

Resources name	Articles
Advances in Social Science Education and Humanities Research	16
Journal Of Physics Conference Series	16
Advanced Science Letters	4
4th International Seminar of Mathematics Science and Computer Science Education	3
AEBMR Advances in Economics Business And Management Research	3
International Conference on Mathematics Science and Education 2017 ICMSE 2017	173
Proceedings of The International Conference on Educational Psychology and Pedagogy Diversity in Education ICEPP 2019	3
Future Academy Multidisciplinary Conference	12
Interactive Learning Environments	2
International Conference On Mathematics And Science Education 2019 (ICMSCE 2019)	2
Procedia Social And Behavioral Sciences	2
Proceedings Of The 3rd Asian EducationSymposium AES 2018	2
Proceedings Of The 4th International Conference On Early Childhood EducationSemarang Early Childhood Research And Education Talks Secret 2018	2
Proceedings Of The 5th Upi International Conference On Technical And VocationalEducation And Training ICTVET 2018	2
1st International Conference Of Education On Sciences Technology Engineering AndMathematics ICE STEM	1
1st International Conference On Science Mathematics Environment And Education	1
2014 IEEE Frontiers In Education Conference Fie	1
2016 4th International Conference On UserScience And Engineering	1
2017 5th International Conference On Information And Communication Technology ICOIC7	1
2017 7th World Engineering Education Forum(WEEF)	1
2nd International Conference Of Combinatorics Graph Theory And Network Topology	1
2nd International Conference On Science Mathematics Environment And Education2019	1
Aer Advances In Engineering Research	1
Aip Conference Proceedings	1
Asia Pacific Education Review	1
Behavioral Sciences	1
Biochemistry And Molecular BiologyEducation	1
BMC Medical Education	1
BMJ Open	1
British Journal Of Educational Psychology	1
Education And Information Technologies	1
Educational Psychology Review	1
First Ahmad Dahlan International	

Table 1. Journals and Proceedings that publish (Contd.)

Resources name	Articles
Conference On Mathematics AndMathematics Education	1
First International Conference On Environmental Geography And Geography Education ICEGE	1
Frontiers In Education Conference	1
Frontiers In Psychology	1
Heliyon	1
Ideas For 21st Century Education	1
IEEE Transactions On Learning Technologies1	1
Inted Proceedings	1
Inted2014 8th International TechnologyEducation And Development Conference	1
International Conference On Mathematics And Science Education ICMSCE	1
International Conference On Mathematics And Science Education ICMSCE 2018	1
International Conference On MathematicsAnd Science Education ICMSCE 2020	1
International Conference On User Science And Engineering	1
International Journal Of Psychology	1
International Seminar On Mathematics Science And Computer Science EducationMSCEIS 2016	1
Iop Conference Series Earth And Environmental Science	1
Proceedings Of 2017 International ConferenceOn Education And Multimedia Technology ICEMT 2017	1
Proceedings Of The 1st InternationalConference On Economics Business Entrepreneurship AndFinance ICEBEF 2018	1
Proceedings Of The 1st International Conference On Innovation In Education ICOIE 2018	1
Proceedings Of The 1st International Conference On Intervention And AppliedPsychology ICIAP 2017	1
Proceedings Of The 3rd Asean Conference OnPsychology Counselling And Humanities ACPCH 2017	1
Proceedings Of The 3rd International Conference On Education And Training ICET 2017	1
Proceedings Of The 5th Asia Pasific Education Conference AECON2018	1
Proceedings Of The 9th International Conference For Science Educators And Teachers ICSET 2017	1
Proceedings Of The International Conference On Tourism Economics Accounting Management And Social Science TEAMS 2018	1
Proceedings Of The Ninth International Conference On Applied Linguistics CONAPLIN9	91
Proceedings Of The Seminar Nasional KimiaNational Seminar On Chemistry SNK 2018	1
Proceedings Of The Third Padang International Conference On Economics Education Economics Business And Management Accounting And Entrepreneurship PICEEBA 2019	1

The Table 1 shows how many articles have been published through WOS on the theme of Self-Regulated Learning (SRL). This indicates that the theme remains popular and widely discussed, as it serves as a strategy to foster student independence in the

21st century (Dinata, Rahzianta, & Zainuddin, 2016). Moreover, Self-Regulated Learning also influences conceptual learning (Midun, Degeng, Kuswandi & Ulfa, 2019). Students with high SRL (Self-Management) demonstrate a positive impact on their academic achievement (Malik, Suryaman, & Rusmawati, 2019). Therefore, it can be concluded that SRL has proven to be effective in improving the quality of learning, from enhancing academic performance, increasing student engagement, managing student learning, to improving classroom learning activities, which ultimately impacts goal achievement and teacher professionalism.

Moreover, the integration of SRL into educational practices not only improves the learning outcomes of students but also supports the development of essential 21st-century skills such as critical thinking, problem-solving, and self-management. These skills are vital for fostering independent learners who can adapt to evolving educational environments, particularly in technology-enhanced and online learning contexts. As teachers implement SRL strategies, they enhance their instructional quality, which leads to more dynamic and effective teaching methodologies that ultimately contribute to higher levels of teacher professionalism and student success (Broadbent et al., 2020; Bannert et al., 2023).

CONCLUSION

Self-Regulated Learning (SRL) is a crucial learning approach that supports students in becoming more independent in their learning process and improving their academic performance. SRL involves various aspects, such as managing motivation, behavior, and the ability to plan, monitor, and evaluate learning progress. Through SRL, students can develop essential skills for independent learning, such as goal setting, time management, and self-assessment. In the context of education increasingly reliant on technology, particularly with the significant changes brought about by the Industrial Revolution 4.0 and the digital transformation during the COVID-19 pandemic, SRL has become even more relevant and important. Moreover, SRL positively impacts students' conceptual understanding, problem-solving abilities, and deeper knowledge retention. This is vital for creating meaningful and sustainable learning experiences. The approach encourages students to be more proactive in their learning, making them more confident and resilient in facing learning challenges, particularly in technology-mediated environments. As online learning and technology-based educational systems continue to grow, SRL becomes a highly relevant approach to help students manage their learning process effectively. Therefore, SRL is not only important for academic success but also for preparing students to face future educational challenges that are increasingly complex and digitally driven.

REFERENCES

Alharbi, A., Henskens, F., & Hannaford, M. (2012). Student-centered learning objects to support the self-regulated learning of computer science. http://hdl.handle.net/1959.13/1043855 . http://doi.org/10.4236/ce.2012.326116.

Azevedo, R., Moos, D. C., Greene, J. A., Winters, F. I., & Cromley, J. G. (2018). Self-

regulation in online learning environments: A critical analysis of the research on self-regulated learning and learning outcomes in online settings. *Educational Psychologist*, 45(2), 107–119. https://doi.org/10.1080/00461520.2010.488292.

Broadbent, J., Panadero, E., & Boud, D. (2020). Implementing self-regulated learning (SRL) in higher education: What are the challenges? *Educational Psychology Review*, 32(4), 601-622. http://doi.org/10.1007/s10648-020-09518-y.

Bannert, M., Reimann, P., & Sonnenberg, C. (2023). Enhancing self-regulated learning through digital learning environments: Implications for educational practice. *Computers & Education, 193*, 104680. https://doi.org/10.1016/j.compedu.2023.104680

Bond, M., Marín, V. I., Dolch, C., Bedenlier, S., & Zawacki-Richter, O. (2021). Emergency remote teaching in higher education: Mapping the first global online semester. *International Journal of Educational Technology in Higher Education*, 18(1), 1-24. https://doi.org/10.1186/s41239-021-00282-2

Dabbagh, N., & Kitsantas, A. (2012). Personal learning environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. *The Internet and Higher Education, 15*(1), 3-8. https://doi.org/10.1016/j.iheduc.2011.06.002.

Daniel, S. J. (2020). Education and the COVID-19 pandemic. *Prospects, 49*(1-2), 91–96. https://doi.org/10.1007/s11125-020-09464-3.

Dignath, C., & Büttner, G. (2021). Teacher training on self-regulated learning: A meta-analysis on the effects on students' academic performance. *Learning and Instruction*, 72, 101438. http://doi.org/10.1016/j.learninstruc.2020.101438

Dinata, P. A. C., Rahzianta, R., & Zainuddin, M. (2016). Self regulated learning sebagai strategi membangun kemandirian peserta didik dalam menjawab tantangan abad 21. In *Seminar Nasional Pendidikan Sains VI 2016*. Sebelas Maret University.

Donthu, N., Kumar, S., Pandey, N., & Soni, G. (2021). A retrospective overview of Asia Pacific Journal of Marketing and Logistics using a bibliometric analysis. *Asia Pacific Journal of Marketing and Logistics*, *33*(3), 783-806. http://doi.org/10.1108/APJML-06-2020-0416.

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of business research*, *133*,285-296. http://doi.org/10.1016/j.jbusres.2021.04.070.

Kelvin Febrianto, & Yunus Fadhillah. (2018). Implementasi Self-Regulated Learing Pada Aplikasi Pembelajaran Manajemen Proyek Sistem Informasi Pada Perguruan Tinggi Swasta X Di Jakarta. Jurnal Riset Informatika, 1(1), 51–56. https://doi.org/10.34288/jri.v1i1.15

Korkmaz, G., & Toraman, Ç. (2020). Are we ready for the post-COVID-19 educational practice? An investigation into what educators think as to online learning. *International Journal of Technology in Education and Science*, 4(4), 293-309. DOI:

10.46328/ijtes.v4i4.110.

Midun, H., Degeng, I. N. S., Kuswandi, D., & Ulfa, S. (2019). Effects of inverted classroom and self-regulated learning on conceptual learning. *International Journal of Innovation, Creativity and Change*, *8*(2), 181-200.

Majitol, D., & Yunus, M. M. (2023). Teacher's perception on student's self-regulated learning in a technology-based learning setting. International Journal of Evaluation and Research in Education (IJERE); Vol 12, No 3: September 2023; 1155-1164 ; 2620- 5440 ; 2252-8822 ; 10.11591/Ijere.V12i3. http://doi.org/10.11591/IJERE.V12I3.25123.

Malik, A., Suryaman, R. D. R., & Rusmawati, R. D. (2019). Pengaruh Pengelolaan Diri Siswa Dan Karakter Guru terhadap Prestasi Belajar Siswa Kelas X SMK Satya Widya Surabaya dan SMK Tri Tunggal Surabaya. *Teknologi Pendidikan*, *4*(2), 143-152. http://doi.org/10.17977/um039v4i22019p143.

OECD. (2019). OECD Skills Outlook 2019: Thriving in a Digital World. OECD Publishing, Paris. https://doi.org/10.1787/3b3d4b1d-en.

Padmajati, A. (2020). Fostering students' self-regulated learning through a flipped classroom in the 4.0 educational industry. In *Teacher Education and Professional DevelopmentIn Industry 4.0* (pp. 337–343). CRC Press.

Panadero, E., Jonsson, A., & Botella, J. (2018). Effects of self-assessment on self-regulated learning and self-efficacy: Four meta-analyses. *Educational Research Review*, 22, 74-98. http://doi.org/10.1016/j.edurev.2017.08.004.

Pardo, A., Han, F., & Ellis, R. A. (2019). Combining university student self-regulated learning indicators and engagement with online learning events to predict academic performance. *The Internet and Higher Education*, 42, 1-10. http://doi.org/10.1016/j.iheduc.2019.04.003.

Rusdiah, R. (2021). Pengunaan Self Regulated Learning Untuk Meningkatkan Motivasi Belajar Bahasa Arab Sistem Pembelajaran Online Di SMAN 1 Mataraman: Rusdiah. Jurnal Pendidikan Dan Kebudayaan (JURDIKBUD); Vol. 1 No. 3 (2021): November :Jurnal Pendidikan Dan Kebudayaan; 01-17 ; 2809-7173 ; 2809-7181 ; 10.55606/Jurdikbud.V1i3. http://doi.org/10.55606/Jurdikbud.V1i3.

Salmon, G. (2019). E-Moderating: The key to online teaching and learning. Routledge.

Schwab, K. (2017). The Fourth Industrial Revolution. Crown Business.

Schunk, D. H., & Greene, J. A. (Eds.). (2018). *Handbook of Self-Regulation of Learningand Performance* (2nd ed.). Routledge.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333-339. https://doi.org/10.1016/j.jbusres.2019.07.039

Suprapto, Y. (2016). Combination Of Constructivist Learning, Srl (SelfRegulated Learning), And Scl (Student Centered Learning)Using E-Learning. Jurnal TEKPEN; Vol. 1 No. 3 (2016): Elearning: Management ; 2356-3311. https://journal.unesa.ac.id/index.php/jtp/article/view/1152

Tarumasely, Y. (2024). *Meningkatkan Kemampuan Belajar Mandiri (Panduan untuk Mengembangkan Self-Regulated Learning)*. Academia Publication.

Taranto, D., & Buchanan, M. T. (2020). Sustaining lifelong learning: A self-regulated learning (SRL) approach. *Discourse and Communication for Sustainable Education*, *11*(1), 5-15. http://doi.org/10.2478/dcse-2020-0002.

Teng, L. S., & Zhang, L. J. (2020). Empowering learners in the second/foreign language classroom: Can self-regulated learning strategies-based writing instruction make a difference?. *Journal of Second Language Writing*, *48*, 100701. http://doi.org/10.1016/j.jslw.2020.100701.

Trust, T., & Whalen, J. (2020). K-12 teachers' experiences and difficulties with online teaching during the COVID-19 pandemic. *Journal of Digital Learning in Teacher Education, 36*(4), 221-226. https://doi.org/10.1080/21532974.2020.1837596.

Tsai, C.-C., & Chai, C. S. (2020). Technological pedagogical content knowledge in self-regulated learning: Implications for teacher education. *Journal of Computer Assisted Learning, 36*(6), 826-838. https://doi.org/10.1016/j.jcal.2020.101167.

Wang, H., & Yang, J. (2021). Self-regulated learning in higher education: A review of the literature. *Educational Studies, 47*(4), 470-489. https://doi.org/10.1080/02602938.2021.1871664.

Zhang, D., & Zhao, S. (2022). The impact of self-regulated learning on student learning outcomes: A meta-analysis. *Learning and Instruction, 77*, 101636. https://doi.org/10.1016/j.learninstruc.2022.101636.

Zubaidah, S. (2020). *Self Regulated Learning: Pembelajaran dan Tantangan pada EraRevolusi Industri 4.0*. 1–19.