

THE IMPACTS OF SELF-REGULATED LEARNING ON UNIVERSITY STUDENTS: A SCOPING REVIEW

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ABSTRACT

Students require self-regulated learning (SRL) skills to survive and succeed in academia. SRL is a dynamic process where the learner activates and maintains their actions, thoughts, and emotions to achieve the goals that the individual has set. This study aims to identify and summarize the existing literature on the impact of SRL on university students. This scoping review was conducted and reported based on the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines. A total of six databases were involved in the process of searching for relevant literature using keywords such as “self-regulated learning” and “college/university student”. Literature selection was based on six inclusion criteria and three exclusion criteria. A total of 654 articles were published between 2014 and 2024. The literature was selected based on six inclusion criteria and three exclusion criteria, and evaluated for eligibility based on four criteria (participants, theoretical framework, measurements, and results). Based on the inclusion, exclusion, and eligibility criteria; 16 articles were obtained. From the sixteen articles, 12 impacts of SRL were obtained. The twelve impacts of SRL were categorized based on ecological theory, divided into three levels: personal, microsystem, and mesosystem. By knowing the various impacts of SRL on students, it is expected that higher education organizers or practitioners can raise awareness about the importance of providing guidance to improve/maintain students' SRL.

Keywords: self-regulated learning, university students, higher education, scoping review

1. PREFACE

'Mahasiswa' (university student) is an Indonesian term for individuals who are completing studies in higher education such as universities, polytechnics, colleges, institutes, academies, or community colleges (Kamus Besar Bahasa Indonesia, n.d.; “Mahasiswa,” 2024). The Ministry of Education, Culture, Research and Technology of the Republic of Indonesia (Kemendikbudristek RI) notes that currently, the university student population in Indonesia is relatively large, reaching 9.3 million in 2022, spread across various public or private universities (Kemendikbudristek, 2022). The massive university student population shows the importance of the role and quality of education to form superior human resources; so that students play a role in building a sustainable society (Badan Perencanaan Pembangunan Nasional, 2017; Fahrurrazi & Jayawardaya, 2024).

In a conversation with K. Vanetta (October 2024), a student of X University, was informed that she uses storytelling and analogy learning strategies to help her understand the concept of lecture material. She also stated that, in addition to using the two strategies above, she also set study targets. By having a study target, she feels that she can avoid the desire to procrastinate on her academic assignments. Based on a conversation with another student, A. Zahra (October 2024), information was obtained that she tried to realize and adjust learning strategies that were considered suitable for her strengths and limitations. Because of her efforts, her learning process can produce satisfactory results.

Various behaviors in learning strategies by using storytelling, analogy, setting learning targets, and adjusting strategies that are suitable for the condition of limitations/strengths, are examples of the concept of self-regulated learning. Self-regulated learning (SRL) is a dynamic process in

which the learner activates and strives for their thoughts, emotions, and action to achieve the goals that the individual has determined (Zimmerman & Schunk, 2011).

SRL ability has various positive impacts on students. Studies (Angela et al., 2020; Hayat et al., 2020; Nabizadeh et al., 2019) discovered that students with strong self-regulated learning skills perform better academically compared to their peers. In addition, the ability of SRL makes students have a high level of motivation to learn (Marini & Boruchovitch, 2014; Nita & Agustika, 2023), able to overcome difficulties in the learning process (Sholihah et al., 2019; Suud et al., 2024); and able to manage time efficiently to support the learning process (Lau & Dewi, 2023; Wolters & Brady, 2021).

The previous studies (Angela et al., 2020; Hayat et al., 2020; Lau & Dewi, 2023; Marini & Boruchovitch, 2014; Nabizadeh et al., 2019; Nita & Agustika, 2023; Sholihah et al., 2019; Suud et al., 2024; Wolters & Brady, 2021) have revealed some impacts of SRL on students. However, the author assumes that there are still other impacts of SRL that have not been revealed. To reveal other impacts of SRL, it can be done through a literature study of the results of research on SRL that has been conducted since 1986 (Schunk, 1986). Based on SRL research that has been going on for more than three decades, it can help provide information about the various impacts of SRL.

Currently, there are literature studies on SRL (Luo & Zhou, 2024; Roth et al., 2016; Theobald, 2021; Urbina et al., 2021; Xu et al., 2023). However, the literature studies that have been conducted have not discussed the impacts of SRL. In this study, the author intends to summarize the impact of SRL based on existing research literature. Thus, it is expected that this study can complement some previous literature studies that have not discussed the impact of SRL on university students. By knowing the impact of SRL on students, higher education managers or practitioners can increase awareness about the importance of providing guidance to improve/maintain college students' SRL.

2. RESEARCH METHOD

The research procedure was carried out based on the framework by the Joanna Briggs Institute Scoping Review Methodology Group (Peters et al., 2020). This scoping review was carried out and presented following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines (Tricco et al., 2018).

Search strategy

The search strategy for relevant articles adopted the population, concept, and context (PCC) framework suggested by the Joanna Briggs Institute (Peters et al., 2020). In this scoping review, the intended population was university students; the main concept sought was the impact of self-regulated learning; and the context was higher education. To include as many relevant articles as possible; the researcher conducted an extensive search strategy using three categories of synonymous keywords. The first category referred to 'college/university student', the second to 'self-regulated learning/learning strategies'; and the third category was in addition to exclusionary keywords such as 'child/primary/preschool'. Keywords within the same category were combined with the Boolean operator OR; and keywords from different categories were combined with the Boolean operators AND (categories 1 and 2) and NOT (category 3).

The search process was conducted on six databases, namely: (a) American Psychological Association (APA) PsycNet; (b) Taylor and Francis Online; (c) PubMed; (d) ScienceDirect; (e) MDPI; and (f) Wiley Online Library.

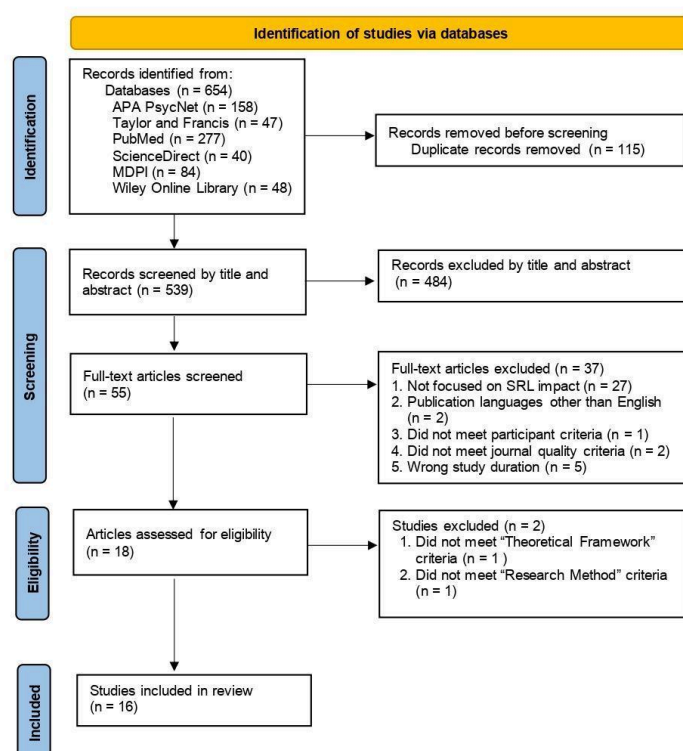
Inclusion and exclusion criteria

In conducting the scoping review research, articles discovered will be reviewed if they meet the inclusion criteria; and will be eliminated if they are detected to have characteristics in the exclusion criteria set by the researcher. The inclusion criteria of the articles applied are: (a) discussing the impact of SRL on university student populations in higher education; (b) empirical studies other than intervention and measurement tool development; (c) using English as the language of publication; (d) published in Q1 to Q3 accredited quality international journals; (e) freely accessible without charge (open access); and (f) published in the last ten years (between 2014 and 2024). Then, the exclusion criteria applied were: (a) research on case studies or meta-analysis; (b) research that does not discuss the impact of SRL; and (c) type of research publication other than scientific articles (book chapters, etc.).

Study selection

The collected research articles from the six databases were screened using Rayyan software. The search results of each database were imported into Rayyan to detect duplicate articles. After removing duplicate articles, the titles and abstracts of all remaining articles were reviewed, and those that did not meet or fit the exclusion criteria were eliminated. Finally, the remaining articles were read in full text and screened for eligibility. Based on the procedure, the initial number of articles collected was 654, and 20 articles were selected according to the criteria to be used in this scoping review. The process was conducted by two reviewers (ARA and PTYSS). The complete selection process can be seen in Figure 1.

Figure 1
PRISMA Flow Diagram



Data extraction

The articles or data collected from the study selection procedure were then extracted and summarized by the reviewers (ARA and PTYSS); based on a format consisting of four types of information, namely: (a) author name, year of publication, and country of origin; (b) purpose of the study; (c) sample of participants; and (d) main findings of the study (impact of SRL). The information contained in the abstract, results, and conclusion of the article were utilized to address the research questions.

Quality checklist and reporting

The selected articles will undergo another screening process to validate the quality of the articles listed in this literature study. The screening process goes through several stages of eligibility testing using a checklist modified from previous research (Yapputro et al., 2024), which can be seen in Table 1. The following four criteria were listed in the checklist: (a) participants (place, age, gender); (b) theoretical framework; (c) instruments used; and (d) research results. Each criterion was scored on a scale of 0 - 5. A score of 5 represented complete information in the article, while 0 represented information that was not included in the article. Articles were declared eligible if they had a total score of at least 12, and no score less than 3 in each criterion.

Table 1

Quality Checklist and Reporting Procedures

Criteria	Score
Participant	5 — Includes 5 information on research methods, particularly in the participant's part (total participants, research location, participants' gender, age, and education). 0 — Does not include the required information adequately
Theoretical Framework	5 — Includes 5 information related to the theoretical framework (name of the theory used; author, year, and explanation of the concept of the theory; explanation of the synthesis of SRL variables with impact variables; hypothesis development) 0 — Does not include the required information adequately
Measurements	5 — Includes 5 information on the measurement method (name of the measurement tool used; reference for the measurement; total number of items along with examples; information about the reliability; and validity of the measurement tool) 0 — Does not include the required information adequately
Results	5 — Includes 5 information regarding research results (data analysis methods used; presentation of statistical reports; combining tables/figures; interpretation of statistical findings; assessment of research results) 0 — Does not include the required information adequately

3. RESULT AND DISCUSSION

Study characteristics

This scoping review reviewed 16 articles that addressed the impact of self-regulated learning. The articles were published between 2014 and 2024 across 11 countries. The results of the quality assessment and report for each study can be seen in Table 2.

Table 2
Summary of Quality Assessment and Reporting

Author(s)	Title	Impact	Score				Total Score
			P	TF	RM	R	
Al-Abyadh et al. (2024)	Do smartphone addiction and self-regulation failures affect students' academic life satisfaction? The role of students' mind wandering	Mind Wandering	5	5	4	5	19
Bernardo et al. (2022)	A path model of university dropout predictors: The role of satisfaction, the use of self regulation learning strategies and students' engagement	Student Engagement	5	4	4	5	18
Elizondo et al. (2024)	Self-regulation and procrastination in college students: A tale of motivation, strategy, and perseverance	Procrastination	4	5	5	5	19
Hayat et al. (2020)	Relationships between academic self-efficacy, learning-related emotions, and metacognitive learning strategies with academic performance in medical students	Academic Performance	5	5	4	5	19
Hwang & Oh (2021)	The relationship between self-directed learning and problem-solving ability	Problem-Solving Skill	5	3	3	5	16
Kim (2019)	The structural relationship among digital literacy, learning strategies, and core competencies among South Korean college students	Social Skills	4	4	5	5	18
Li et al. (2023)	How do anxiety and stress impact the performance of Chinese doctoral students through self-regulated learning? —A multi-group analysis	Performance (Task and Contextual)	5	5	4	5	19
Limone et al. (2020)	Examining procrastination among university students through the lens of the self-regulated learning model	Procrastination	5	4	4	4	17
Lyu (2024)	The effect of self-regulated learning and community of inquiry on the online learning engagement of Chinese as foreign language learners	Learning Engagement and Cognitive Presence	4	4	3	5	16
Marini & Boruchovitch (2014)	Self-regulated learning in Students of Pedagogy	Intrinsic Motivation	5	4	4	5	18
Miao & Ma (2022)	Students' online interaction, self-regulation, and learning engagement in higher education: The importance of social presence to online learning	Social Presence	4	5	5	5	19
Nabizadeh et al. (2019)	Prediction of academic achievement based on learning strategies and outcome expectations among medical students	Academic Achievement	5	5	3	4	17
Nakhostin-Kh ayyat et al. (2024)	The relationship between self-regulation, cognitive flexibility, and resilience among students: A structural equation modeling	Cognitive Flexibility and Resilience	5	4	4	5	18
Suud et al. (2024)	The impact of family social support on academic resilience in Indonesian and Turkish students	Academic Resilience	4	3	4	4	15
Wang et al. (2022)	How and when goal-oriented self-regulation improves college students' well-being	Psychological Well-Being	4	4	3	5	16
Yin & Luo (2024)	The influence of perceived teacher support on online English learning engagement among Chinese university students	Learning Engagement	4	4	4	5	17

Impacts of self-regulated learning

Based on the 16 articles discussed, there are 12 impacts of SRL, namely: (a) mind wandering; (b) student engagement; (c) procrastination; (d) academic performance; (e) problem-solving skill; (f) social skill; (g) performance (task and contextual); (h) intrinsic motivation; (i) social presence; (j) cognitive flexibility; (k) resilience; and (l) psychological well-being.

The first impact of SRL (failure in SRL), namely *mind wandering*, $\beta(637) = 0.669$, $p < 0.001$. Mind wandering is a condition of shifting individual focus from what is being done to other irrelevant things (Smallwood & Schooler, 2015). The higher the students' SRL score, the lower the students' tendency to do something without realizing it.

The second impact of SRL is to increase *student engagement*, $r_s(875) = 0.520$, $p < 0.001$. *Student engagement* refers to how much an individual participates in his/her learning activities characterized by feelings of enthusiasm and perseverance (Dixson, 2015). The higher the students' SRL score, the higher their enthusiasm in the learning process.

The third impact of SRL is reducing *procrastination*, $r(431) = -0.730$, $p < 0.001$. *Procrastination* is the behavior of delaying to complete an activity without a clear reason (Milgram & Tenne, 2000). The higher the level of students' SRL, the lower the tendency of students to postpone a task that they think is difficult.

The fourth impact of SRL is increasing *academic performance*, $r(277) = 0.450$, $p < 0.01$. Academic performance refers to the extent to which students succeed in their learning process (Hayat et al., 2020). The higher the student's SRL level, the better the student's score on academic tasks.

The fifth impact of SRL is improving *problem-solving skills*, $r(191) = 0.528$, $p < 0.001$. *Problem-solving skills* include individual skills in identifying problems and creating strategies to solve them (Altun, 2003). The higher the SRL, the more students are skilled in overcoming various obstacles faced with effective solutions.

The sixth impact of SRL, namely improving *social skills*, $r(914) = 0.50$, $p < 0.01$. *Social skills* refer to individual skills in interacting positively and effectively with others (Kim, 2019). The more students have good SRL, the more students' social skills will improve, such as in the context of collaborating with others.

The seventh impact of SRL is to improve *performance*, $\beta(489) = 0.794$, $p < 0.01$. Performance is the potential of individuals to complete the main tasks efficiently and do things that exceed the expectations of the main task (Koopmans et al., 2011). The higher the students' SRL, the more students take initiative steps in the completion of their academic tasks both in the main obligation and other additional issues.

The eighth impact of SRL is increasing *intrinsic motivation*, $r_s(105) = 0.447$, $p < 0.05$. Intrinsic motivation is the drive within the individual to do an activity to fulfill the curiosity/challenge/interest within the individual (Ryan & Deci, 2000). The higher the level of SRL, the more students take the initiative to explore learning materials without having to be ordered.

The ninth impact of SRL, namely increasing *social presence*, $r(332) = 0.671$, $p < 0.01$. Social presence is the ability of individuals to build meaningful personal relationships with other individuals in the learning community (Garrison, 2007). The higher the level of students' SRL, the more students are able to have good relationships with fellow students and teachers.

The tenth impact of SRL, namely increasing *cognitive flexibility*, $r(300) = 0.221$, $p < 0.01$. Cognitive flexibility refers to the cognitive ability of individuals to switch from one idea to another when facing changes in stimulus from the surrounding environment (Dennis & Vander Wal, 2010). The higher the SRL score, the more students are skilled in recognizing and considering various alternatives to what they experience.

The eleventh impact of SRL is to increase *resilience*, $r(300) = 0.808$, $p < 0.01$. Resilience is the capacity of individuals to utilize their resources to adapt in difficult times (Windle, 2011). The higher the level of students' SRL, the more students are able to bounce back after illness or difficulty.

The twelfth impact of SRL is improving *psychological well-being*, $r(72) = 0.630$, $p < 0.01$. Psychological well-being is when individuals have the perception that they are satisfied with their lives (Andrews & Crandall, 1976). The higher the level of SRL, the more students feel positive changes in themselves.

Impacts of self-regulated learning

This scoping review aims to explore and identify existing studies related to the impact of SRL on university students. A total of 16 studies were identified discussing the impact of SRL. Based on the results of the research on those journal literature, it was found that there were 12 total impacts of SRL. In the study results, the twelve impacts can be classified into three criteria. The criteria are based on the ecological theory by Bronfenbrenner (1977). Based on the theory, the impact of SRL is included in the personal, microsystem, and mesosystem levels.

At the personal level, SRL has impacts on: (a) *problem-solving skill*; (b) *cognitive flexibility*; (c) *resilience*; (d) *psychological well-being*; (e) *mind wandering*; and (f) *intrinsic motivation*. This illustrates that the impacts of SRL are related to the internal aspects of the individual that can affect the development of the individual in a positive direction, especially in students with adequate SRL skills.

At the microsystem level, SRL has impacts on: (a) *student engagement*; (b) *academic performance/achievement*; (c) *performance*; and (d) *procrastination*. These impacts are linked to the immediate environment where individuals interact directly, such as in the school context, where social, emotional, and academic exchanges take place. At this systemic level, SRL plays a crucial role in supporting individuals' positive development by shaping and enhancing the five aspects previously mentioned.

At the mesosystem level, SRL has impacts on: (a) *social skills* and (b) *social presence*. At this systemic level, SRL aids students in managing interactions across the various environments (microsystems) they inhabit. When students possess strong SRL skills, it is anticipated that they will be better equipped to regulate their behavior effectively in diverse social contexts.

This study contributes by discussing and summarizing the impact of SRL that has not been addressed in previous literature studies on SRL (Luo & Zhou, 2024; Roth et al., 2016; Theobald,

2021; Urbina et al., 2021; Xu et al., 2023). Furthermore, the findings of this study have significant implications for both academics and practitioners, emphasizing the importance of enhancing students' SRL abilities. Of the twelve impacts identified, the most notable include improvements in resilience, task and contextual performance, and social presence. Given the importance of these effects, higher education administrators and policymakers, as well as curriculum developers, are encouraged to design and implement educational frameworks that promote the development of SRL in students.

However, this study still has some limitations that can be developed in future research. First, the studies reviewed were limited to the scope of English articles. Second, the articles reviewed were limited to those that could be accessed for free due to financial constraints. Third, the majority of the studies used self-report questionnaires to measure the level of SRL and the impact of SRL on students. Self-report measurement methodologically cannot be said to prove influence/impact. Future research could select studies that have experimental methods (at least quasi-experimental), could include articles written in languages other than English, as well as searches from different databases; which may potentially explain the impact of SRL that has not been revealed in the current study.

The results of this study indicate the importance of increasing SRL in students, especially to support students' resilience, task performance, and contextual performance. Higher education managers and policymakers are encouraged to develop curricula that enhance SRL. One is through activities that involve students in task interpretation and goal setting (Beckman et al., 2021). Educators also need to deeply understand task characteristics (explicit, implicit, and socio-contextual aspects of a task); to support students in understanding tasks, especially complex tasks that require interpretation and decision-making.

4. CONCLUSIONS AND SUGGESTIONS

This literature study contributes to explaining and summarizing the various impacts of SRL ability on students. There are at least 12 impacts of SRL that can affect students' living environment at three levels. The three levels are personal, microsystem, and mesosystem.

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REFERENCES

- Al-Abyadh, M. H. A., Alatawi, M. A., Emara, E. A. M., Almasoud, S. A., Alsetoohy, O., & Ali, A. R. M. (2024). Do smartphone addiction and self-regulation failures affect students' academic life satisfaction? The role of students' mind wandering. *Psychology Research and Behavior Management*, 17, 1231–1253. <https://doi.org/10.2147/PRBM.S437076>
- Altun, İ. (2003). The perceived problem solving ability and values of student nurses and midwives. *Nurse Education Today*, 23(8), 575–584. [https://doi.org/10.1016/S0260-6917\(03\)00096-0](https://doi.org/10.1016/S0260-6917(03)00096-0)
- Andrews, F. M., & Crandall, R. (1976). The validity of measures of self-reported well-being. *Social Indicators Research*, 3(1), 1–19. <https://doi.org/10.1007/BF00286161>
- Angela, Tiatri, S., & Sari, M. P. (2020). Investigation of grit and self regulation in learning and their role on academic achievement of medical students in Jakarta. *Proceedings of the 2nd Tarumanagara International Conference on the Applications of Social Sciences and Humanities (TICASH 2020)*. <https://doi.org/10.2991/assehr.k.201209.081>

- Badan Perencanaan Pembangunan Nasional. (2017, May 12). Pendidikan tinggi berperan penting meningkatkan produktivitas nasional. *Badan Perencanaan Pembangunan Nasional*. <https://www.bappenas.go.id/berita/pendidikan-tinggi-berperan-penting-meningkatkan-produktivitas-nasional>
- Beckman, K., Apps, T., Bennett, S., Dalgarno, B., Kennedy, G., & Lockyer, L. (2021). Self-regulation in open-ended online assignment tasks: The importance of initial task interpretation and goal setting. *Studies in Higher Education*, 46(4), 821–835. <https://doi.org/10.1080/03075079.2019.1654450>
- Bernardo, A. B., Galve-González, C., Núñez, J. C., & Almeida, L. S. (2022). A path model of university dropout predictors: The role of satisfaction, the use of self-regulation learning strategies and students' engagement. *Sustainability*, 14(3), 1–10. <https://doi.org/10.3390/su14031057>
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32(7), 513–531. <https://doi.org/10.1037/0003-066X.32.7.513>
- Dennis, J. P., & Vander Wal, J. S. (2010). The cognitive flexibility inventory: Instrument development and estimates of reliability and validity. *Cognitive Therapy and Research*, 34(3), 241–253. <https://doi.org/10.1007/s10608-009-9276-4>
- Dixon, M. D. (2015). Measuring student engagement in the online course: The online student engagement scale (OSE). *Online Learning*, 19(4), 143. <https://doi.org/10.24059/olj.v19i4.561>
- Elizondo, K., Valenzuela, R., Pestana, J. V., & Codina, N. (2024). Self-regulation and procrastination in college students: A tale of motivation, strategy, and perseverance. *Psychology in the Schools*, 61(3), 887–902. <https://doi.org/10.1002/pits.23088>
- Fahrurrazi, F., & Jayawardaya, S. S. P. (2024, May 4). Pintu menuju masa depan: Menggali arti penting pendidikan tinggi dalam masyarakat global. *Kampus Edu Indonesia*. <https://kampusedu.id/opini/pintu-menuju-masa-depan-menggali-arti-penting-pendidikan-tinggi-dalam-masyarakat-global/>
- Garrison, D. R. (2007). Online community of inquiry review: Social, cognitive, and teaching presence issues. *Journal of Asynchronous Learning Networks*, 11(1), 61–72. <https://eric.ed.gov/?id=EJ842688>
- Hayat, A. A., Shateri, K., Amini, M., & Shokrpour, N. (2020). Relationships between academic self-efficacy, learning-related emotions, and metacognitive learning strategies with academic performance in medical students: A structural equation model. *BMC Medical Education*, 20(1), 1–11. <https://doi.org/10.1186/s12909-020-01995-9>
- Hwang, Y., & Oh, J. (2021). The relationship between self-directed learning and problem-solving ability: The mediating role of academic self-efficacy and self-regulated learning among nursing students. *International Journal of Environmental Research and Public Health*, 18(4), 1–9. <https://doi.org/10.3390/ijerph18041738>
- Kamus Besar Bahasa Indonesia. (n.d.). Mahasiswa. *Dalam Kamus Besar Bahasa Indonesia*. Diakses pada 14 Agustus, 2024, dari, <https://kbbi.web.id/mahasiswa>
- Kemendikbudristek. (2022). *Statistik Pendidikan Tinggi* (F. Herdiyanto, D. A. Akbar, S. Herlina, & A. Hakim (eds.); 7th ed.). Sekretaris Direktorat Jenderal Pendidikan Tinggi.
- Kim, K. T. (2019). The structural relationship among digital literacy, learning strategies, and core competencies among south korean college students. *Educational Sciences: Theory and Practice*, 19(2), 3–21. <https://doi.org/10.12738/estp.2019.2.001>
- Koopmans, L., Bernaards, C. M., Hildebrandt, V. H., Schaufeli, W. B., de Vet Henrica, C. W., & van der Beek, A. J. (2011). Conceptual frameworks of individual work performance. *Journal of Occupational & Environmental Medicine*, 53(8), 856–866. <https://doi.org/10.1097/JOM.0b013e318226a763>

- Lau, A., & Dewi, F. I. R. (2023). Regulasi diri sebagai strategi manajemen waktu mahasiswa aktif berorganisasi. *Psychopolytan: Jurnal Psikologi*, 7(1), 21–33. <https://doi.org/10.36341/psi.v7i1.3678>
- Li, Z., Huang, J., Hussain, S., & Shu, T. (2023). How do anxiety and stress impact the performance of Chinese doctoral students through self-regulated learning?—A multi-group analysis. *Frontiers in Psychology*, 14, 1–13. <https://doi.org/10.3389/fpsyg.2023.985379>
- Limone, P., Sinatra, M., Ceglie, F., & Monacis, L. (2020). Examining procrastination among university students through the lens of the self-regulated learning model. *Behavioral Sciences*, 10(12), 184. <https://doi.org/10.3390/bs10120184>
- Luo, R., & Zhou, Y. (2024). The effectiveness of self-regulated learning strategies in higher education blended learning: A five years systematic review. *Journal of Computer Assisted Learning*, 1–25. <https://doi.org/10.1111/jcal.13052>
- Lyu, B. (2024). The effect of self-regulated learning and community of inquiry on the online learning engagement of Chinese as foreign language learners. *Education Sciences*, 14(7), 691. <https://doi.org/10.3390/educsci14070691>
- Marini, J. A. S., & Boruchovitch, E. (2014). Self-regulated learning in students of pedagogy. *Paideia*, 24(59), 323–330. <https://doi.org/10.1590/1982-43272459201406>
- Miao, J., & Ma, L. (2022). Students' online interaction, self-regulation, and learning engagement in higher education: The importance of social presence to online learning. *Frontiers in Psychology*, 13, 1–9. <https://doi.org/10.3389/fpsyg.2022.815220>
- Milgram, N., & Tenne, R. (2000). Personality correlates of decisional and task avoidant procrastination. *European Journal of Personality*, 14(2), 141–156. [https://doi.org/10.1002/\(SICI\)1099-0984\(200003/04\)14:2<141::AID-PER369>3.0.CO;2-V](https://doi.org/10.1002/(SICI)1099-0984(200003/04)14:2<141::AID-PER369>3.0.CO;2-V)
- Nabizadeh, S., Hajian, S., Sheikhan, Z., & Rafiei, F. (2019). Prediction of academic achievement based on learning strategies and outcome expectations among medical students. *BMC Medical Education*, 19(1), 1–11. <https://doi.org/10.1186/s12909-019-1527-9>
- Nakhostin-Khayyat, M., Borjali, M., Zeinali, M., Fardi, D., & Montazeri, A. (2024). The relationship between self-regulation, cognitive flexibility, and resilience among students: A structural equation modeling. *BMC Psychology*, 12(1), 1–8. <https://doi.org/10.1186/s40359-024-01843-1>
- Nita, N. K. A. A., & Agustika, G. N. S. (2023). Efikasi diri dan regulasi diri berpengaruh terhadap motivasi belajar pada siswa. *MIMBAR PGSD Undiksha*, 11(1), 81–90. <https://doi.org/10.23887/jjpsd.v11i1.58234>
- Peters, M. D. J., Marnie, C., Tricco, A. C., Pollock, D., Munn, Z., Alexander, L., McInerney, P., Godfrey, C. M., & Khalil, H. (2020). Updated methodological guidance for the conduct of scoping reviews. *JBIM Evidence Synthesis*, 18(10), 2119–2126. <https://doi.org/10.1112/JBIES-20-00167>
- Roth, A., Ogrin, S., & Schmitz, B. (2016). Assessing self-regulated learning in higher education: A systematic literature review of self-report instruments. *Educational Assessment, Evaluation and Accountability*, 28(3), 225–250. <https://doi.org/10.1007/s11092-015-9229-2>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Schunk, D. H. (1986). Verbalization and children's self-regulated learning. *Contemporary Educational Psychology*, 11(4), 347–369. [https://doi.org/10.1016/0361-476X\(86\)90030-5](https://doi.org/10.1016/0361-476X(86)90030-5)
- Sholihah, D. N., Sahrani, R., & Hastuti, R. (2019). Peran self-regulated learning terhadap

- emotional exhaustion yang dimediasi oleh student engagement pada santri. *Jurnal Muara Ilmu Sosial, Humaniora, Dan Seni*, 3(2), 423. <https://doi.org/10.24912/jmishumsen.v3i2.5949>
- Smallwood, J., & Schooler, J. W. (2015). The science of mind wandering: Empirically navigating the stream of consciousness. *Annual Review of Psychology*, 66, 487–518. <https://doi.org/10.1146/annurev-psych-010814-015331>
- Suud, F. M., Agilkaya-Sahin, Z., Na'Imah, T., Azhar, M., & Kibtiyah, M. (2024). The impact of family social support on academic resilience in Indonesian and Turkish students: The mediating role of self-regulated learning. *International Journal of Adolescence and Youth*, 29(1). <https://doi.org/10.1080/02673843.2024.2361725>
- Theobald, M. (2021). Self-regulated learning training programs enhance university students' academic performance, self-regulated learning strategies, and motivation: A meta-analysis. *Contemporary Educational Psychology*, 66, 1–19. <https://doi.org/10.1016/j.cedpsych.2021.101976>
- Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., ... Straus, S. E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, 169(7), 467–473. <https://doi.org/10.7326/M18-0850>
- Urbina, S., Villatoro, S., & Salinas, J. (2021). Self-regulated learning and technology-enhanced learning environments in higher education: A scoping review. *Sustainability*, 13(13), 1–12. <https://doi.org/10.3390/su13137281>
- Wang, H., Yang, J., & Li, P. (2022). How and when goal-oriented self-regulation improves college students' well-being: A weekly diary study. *Current Psychology*, 41(11), 7532–7543. <https://doi.org/10.1007/s12144-020-01288-w>
- Windle, G. (2011). What is resilience? A review and concept analysis. *Reviews in Clinical Gerontology*, 21(2), 152–169. <https://doi.org/10.1017/S0959259810000420>
- Wolters, C. A., & Brady, A. C. (2021). College students' time management: A self-regulated learning perspective. *Educational Psychology Review*, 33(4), 1319–1351. <https://doi.org/10.1007/s10648-020-09519-z>
- Xu, Z., Zhao, Y., Liew, J., Zhou, X., & Kogut, A. (2023). Synthesizing research evidence on self-regulated learning and academic achievement in online and blended learning environments: A scoping review. *Educational Research Review*, 39, 1–17. <https://doi.org/10.1016/j.edurev.2023.100510>
- Yapputro, N. E., Callista, V. C., Vercelli, T. A. De, Sinamo, M. A., Dewi, F. I. R., & Suyasa, P. T. Y. S. (2024). Psychological impact of corporate social responsibility practices. *Journal of Ecohumanism*, 3(6), 384–395. <https://doi.org/10.62754/joe.v3i6.4012>
- Yin, D., & Luo, L. (2024). The influence of perceived teacher support on online English learning engagement among Chinese university students: A cross-sectional study on the mediating effects of self-regulation. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1246958>
- Zimmerman, B. J., & Schunk, D. H. (2011). Self-regulated learning and performance: An introduction and an overview. *Handbook of Self-Regulation of Learning and Performance*, 1. <https://doi.org/10.4324/9780203839010.ch1>