



Strategies of Arabic Students' Self-Regulated Learning Improvement in Language Proficiency in The Disruption Era

Saproni Muhammad Samin, Ismail Akzam, Harif Supriady

Universitas Islam Riau, Indonesia

Corresponding E-mail: saproni.abmad@edu.uir.ac.id

Abstract

This study aimed to develop strategies to improve students' Self-Regulated Learning in the Arabic Language Education Study Program at Universitas Islam Riau in the Arabic language proficiency course in the disruption era. This research is qualitative research using a descriptive approach. The data collection technique for the qualitative method in this study used several designs; the Interview Technique, Documentation, and Literature Study. The systematics of strategy development refers to five stages according to Hariadi's theory. This study shows the results of several strategies to improve Self-Regulated Learning for Arabic Language Education students at the Universitas Islam Riau for language proficiency courses; 1) Creation of environmental Arabic (*Bi'ah Luġawīyyah*), 2) monitoring and evaluation stages of the use of Arabic as a language of instruction lectures, 3) Coordination in the formulation of Semester Lesson Plan, 4) Orienting the religious subjects as subjects of knowledge and proficiency in the same time, 5) Motivation in competing, 6) Award Programs for student achievement, 7) Guidance lecturer in competing.

Keywords: *Self-Regulated Learning, Arabic Students, Proficiency Courses, Disruption Era*

Introduction

Knowledge of Self-Regulated Learning (SRL) improvement strategies for higher education students in language proficiency is essential for the stakeholders to have the right policies, especially in this era of disruption. The disruption era has changed the paradigm of human thinking in all aspects of life, including education. Disruption is a term that means, regardless of its roots, then interpreted as an era of fundamental innovation. The disruption era gave birth to very basic changes in people's lives on a massive scale (Kasali in Risdianto, 2019).

We can understand the characteristics of the disruption era through the term VUCA (Volatility, Uncertainty, Complexity, Ambiguity). 1) Volatility is a rapid, massive and unpredictable change, 2) Uncertainty is a change that makes it difficult for people to predict what will happen, 3) Complexity is a very complex relationship between the factors of change; and 4) Ambiguity is the emergence of direction unclear changes (LeBlanc, 2018). The disruption era also has changed the Education paradigm to focus on knowledge production and innovation applications of knowledge (Zubaidah, 2018).

SRL strategy is used to assist students in learning efficiently in college (Huang et al., 2022). SRL refers to one's ability to understand and control one's learning environment (Jeno et al., 2019). Self-regulation skills include goal setting, self-establishment, self-instruction, and self-reinforcement (Harris & Graham, 1999). SRL is self-aware, driven by oneself, and can learn to achieve its goals. SRL combines learner motivation, metacognitive awareness, cognitive skills, and beliefs about learning. One way to increase SRL is by using electronic media (Muis, 2007). However, rising students' SRL in learning Arabic - as a foreign language - still has to continue to look for the formulation of strategies. This strategy formulation will serve as a system for managing study programs, especially for higher-level learners who rely more on their metacognitive strategies, such as planning, organizing, and monitoring their cognitive processes (Habók et al., 2022).

Learning Arabic is also inseparable from students' need for SRL to respond to all changes in their environment and the times they live now, as explained above. In the researchers' observations, the SRL of Arabic Language Education (ALE) Study Program students at the Universitas Islam Riau (UIR) is not very encouraging. This problem exists, for example, in terms of their dependence on lecturers in the learning process in the classroom and their lack of ability to develop an understanding of lecture material by referring to various supporting literature from multiple sources and others. Therefore, there is a need for a strategy to improve the SRL of ALE students, especially in language skills (Samin et al., 2021).

Several studies have suggested that blended learning Model Problem-Based Learning Assisted by E-Learning, Guided Learning, the Edmodo application, Strategy Questionnaire through multidimensional modeling, and Moodle discussion forum could increase SRL (Aulia et al., 2019; Farida & Indah, 2018; Habók & Magyar, 2018; Kristin, 2018; Samin & Hikmah, 2021; Saputra, 2017), the artificial intelligence framework for Self-Regulated Learning (AIF-SRL) methods to improve student self-evaluation, self-regulation behavior, self-efficacy, learning acquisition, and self-satisfaction compared to other existing processes (Huang et al., 2022) and the SRL of Arabic Language Education students at the Universitas Islam Riau is pretty good in the aspects of self-confidence with a score of 65.7%, aspects of discipline with a score of 72.2%, and aspects of responsibility with a score of 73.1%, And not good in the part of the initiative with a score of 55.1% and motivational elements with 63.8% (Samin et al., 2021). from the suggestions of previous studies results above that several programs can improve students' SRL. The researchers study now trying to formulate comprehensive strategies which an institution, such as a study program, can implement to create a system that helps students to be able to improve their SRL; moreover, not all students can do SRL by themselves (Saint et al., 2020).

Method

This research is qualitative research by using a descriptive approach. The illustrative purpose is to explain or describe an event, situation, object, person, or everything related to variables defined using numbers and words (Punaji, 2013). The theoretical study in this study serves as a guide and support and a limitation and research focus. In formulating the strategy, the researchers used the theory proposed by Hariadi (2004) as the stages passed in this research. These stages include: (1) Identification of the environment, (2) Analyzing internal and external environment by measuring the strengths and weaknesses, opportunities and threats, (3) formulation of the factors that measure success (critical success factors) on strategies designed based on the previous analysis, (4) Determining measurable goals and targets, evaluating various alternative strategies by considering the available resources and external conditions faced, (5) Selecting the most appropriate strategy to achieve short-term and long-term goals.

The researchers conducted this study at the Arabic Language Education Study Program (ALE) of the Islamic University of Riau and the ALE-UIR Study Program to become a social situation, namely, as an object of research who wants to know "what happened" in it (Sugiyono, 2014). Data collection in this study was carried out in four ways, namely as follows: 1) Interview. Researchers interviewed the head of the ALE-UIR study program and the 2021 Curriculum Team, 2) Documentation. The documents in this study are a) Self-Evaluation Sheet Documents which the Fakultas Agama Islam has prepared in preparation for the 2020 BAN-PT Accreditation for ALE Study Programs, b) 2017 ALE Study Program Curriculum and 2021 ALE Curriculum, and c) Other documents related to teaching Study Programs in ALE-UIR, 3) Research literature, namely the method by using the library, either in the form of books, notes, and reports of research results from previous studies.

Data analysis in this study is descriptive analysis, which analyzes the data that the researchers have collected from the first step to the fourth step and refers to the theories used. The systematics of strategy formulation refers to the formulation of measurable targets related to developing strategies to increase the SRL of students' ALE-UIR in the language proficiency courses contained in the Fourth Step.

Result and Discussion

Strategy Management

Strategy comes from the Greek word "Strategia," which means "art of troop leader." Mean of Strategy in Online Cambridge Dictionary is a detailed plan for achieving success in situations such as war, politics, business, industry, or sport, or the skill of planning for such problems (Date Accessed 08/11/2022). While the meaning of strategy, according to Online Oxford Dictionary, is a plan intended to achieve a particular purpose (Date Accessed 08/11/2022). It means that Strategy is planned. So, it is necessary to determine how to formulate a strategy. According to (Hariadi, 2004), Strategy formulation must go through several steps; (1) Identification of the environment, (2) Analyzing the internal and external environment by measuring the strengths and weaknesses as well as opportunities and threats, (3) Formulating the critical success factors of the strategies designed based on the previous analysis, (4)

Determining measurable goals and targets, evaluating various alternative strategies by considering the available resources and external conditions faced, (5) Selecting the most appropriate strategy to achieve short-term and long-term goals.

Environmental Identification

In identifying the environment, the researchers first determined that the scope of identifying the background was the researchers using interview and documentation instruments with the head of the study program and the team for preparing the 2021 ALE Study Program curriculum. This interview revealed that the level of SRL of the ALE Study Program students was not in line with expectations. The ALE study program and these results are the results of the UIR internal research report from the researchers. Following the research contract number: 76/KONTRAK/LPPM_UIR/5-2020, which shows that the SRL of ALE-UIR students is at a reasonably good level with a percentage of 65.9% on the Likert scale, although this level is not in line with the study program's expectations, because the online teaching and learning process in this era of the covid-19 pandemic has been going on for more than a year, which should be higher than just good enough.

Conduct Internal and External Environmental Analysis by Measuring Strengths and Weaknesses as well as Opportunities and Threats

Albert Humphrey was the first to introduce the SWOT method when he conducted research at Stamford University in 1960-1970. SWOT analysis is one of the analyzes that organizations, companies, and government agencies have widely used. One of the reasons why SWOT analysis is widely used is because this analysis is quite fundamental as a weapon in determining the best solution in conflicts that may occur within the organization (Fatimah, 2020). To analyze the internal and external environment, the researchers used data collection instruments in interviews with the Head of the ALE Study Program and document inspection documentation in the form of a Self-Evaluation Sheet. The results of this environmental analysis produce a SWOT Analysis of the Study Program.

The ALE study program has strengths, among them are 1) It has the goal to realize Islamic and reliable graduates in Arabic Language Education who have advanced Arabic communication proficiency, are competitive at the national level, are independent, have a Malay culture, and have a global perspective, 2) The quality of the input of the ALE Study Program students is more dominant with the Islamic Boarding School (*pesantren*) background, 2) Reasoning, Interest, and Talent development programs exist, such as Language Arts Performances for ALE Study Program students, 3) There is a scholarship Services, 4) There is Health services, 5) User (Student) Satisfaction with Lecturers, 5) Improved Academy Service Satisfaction, 6) Campus facilities and infrastructure are very representative of supporting a good lecture process.

The ALE department at Universitas Islam Riau has several weaknesses, including 1) Student activities based on soft skills have not been maximized, 2) Developing the interests and talents of the ALE department students, especially the arts

related to language, has not been realized, 3) Some new students come from high school graduates from non-Islamic schools or Islamic boarding schools (*Pesantren*), 4) Scientific student activities have not been maximized, such as writing and study groups, 5) Academic, and non-academic achievements of ALE department students are still minimal, 6) Publication of research and student service is still very minimal, 7) The ability and willingness to study English are still low.

The ALE department at Universitas Islam Riau has several opportunities, including 1) The opening of vast employment opportunities for graduates, not only in the core profile of the department, based on the shape of graduates of the ALE department, there are 3: Arabic language educators, Arabic language researchers, practitioners/business actors based on Arabic language proficiency s, 2) There is a huge need for professional Arabic teachers in Islamic boarding schools and Islamic schools, 3) There is unlimited access to information, and easy to reach all people because of Information Technology, 4) Availability of UIR Internal Scholarships and External Parties, 5) The number of opportunities for student competitions, both academically and or non-academic, at the local, national, and international levels.

The ALE department at Universitas Islam Riau has several threats, including 1) The increasing number of the same department at other universities makes recruiting new students more stringent, 2) The ability to access information technology is still limited, 3) There is competition in an increasingly competitive world of work, where world work requires qualified graduates with high intellectual capacity and abilities, 4) The country's economic conditions and the global world require graduates with superior competencies and qualifications, 5) Agencies and companies are getting higher, so graduates must be qualified and have special skills, 6) The development of science and technology, information, and communication is accelerating. It requires the ALE department to make breakthroughs so that lecturers and students are not left behind.

Formulate Factors Measure the Success (Critical Success Factors) of the Strategies Designed Based on The Analysis Before

To formulate key success factors, the researchers collected data using a documentation instrument by studying the 2021 ALE curriculum document by studying the Vision, Mission, Objectives, and Strategies formulated by the ALE department as a measure of success. Besides that, researchers also use library research to achieve success in language proficiency courses. From the results of the review of the Vision, Mission, Goals, and Strategies ALE-UIR department, the drafting team has determined the Scientific Vision of the ALE department as follows; "The realization of an Arabic Language Education department that is competitive and produces Resources in the Field of Arabic Language Education, Researchers and Practitioners/Experts of Arab-Islamic Business Actors, Malay Culture and Global Insights in Indonesia." Then, there are three missions to realize the ALE department's scientific vision, three goals, and ten strategies. The measurement of language proficiency refers to the formulation of Rushdi Ahmad Thuaimah in Ahmad (2018), consisting of 23 standards for listening proficiency s, 23 for speaking proficiency s, 23 for reading proficiency s, and 22 for writing skills.

Setting Measurable Goals and Targets and Evaluating Various Strategic Alternatives, Taking into Account Available Resources

Measurable Goals and Targets

In the fourth Step in developing an SRL strategy to improve student's language proficiency, it is necessary to formulate objective and measurable targets and evaluate various strategic alternatives by considering the resources owned by the ALE department. Determine quantifiable goals and targets, referring to the researcher's data in the first, second, and third. From the document review results, it can be formulated that the goal of the ALE department related to developing strategies to increase the SRL of ALE students in proficiency courses is the realization of reliable graduates in Arabic Language Education. Their advanced Arabic language communication proficiency s is competitive at the national level. The targets that the ALE department wants to achieve are: 1) In-depth Knowledge of Arabic and Arabic Language Education, 2) Setting the minimum standard of Arabic language proficiency (TOAFL) for ALE graduates, at least with a score of 500, 3) Carry out Arabic language learning with a communicative approach and study of turrets by the latest scientific developments in Arabic Language Education, and 4) ALE department Improves student achievement in academic and non-academic fields at national and international levels.

Evaluating Various Strategic Alternatives

The table below shows the evaluation of strategies for increasing SRL in the 2017 ALE curriculum.

Table 1: Evaluation of Strategies for increasing SRL of Language proficiency ALE Students on the 2021 ALE Curriculum.

No	The strategy used in the 2017 ALE curriculum.	Evaluation
1.	The language matriculation for graduates from the public school	Enrollment is beneficial for new students from public schools, but the department has not evaluated the activity. Its development does not run consistently; one of them is due to the limited workforce and dense activities of lecturers in developing their capacity as novice lecturers.
2.	Placement tests for all new students	The placement test function to map students' abilities, so the students mapped the power of language proficiency and are the starting point treatment (handling) for each student, but it did not work consistently in its development.
3.	<i>Nasyâth Thullâb</i> (Student Creativity Program)	<i>Nasyâth Thullâb</i> is an activity that aims to create an Arabic language environment among students by grouping students into several groups and giving the task of presenting activities using Arabic as the

		language of communication. However, this activity is inconsistent along the way, only held a few times.
4.	The ALE Students Competition	The competition serves to motivate students to develop student's language proficiency. In its realization, this program only runs once, and the department has not implemented it in a programmed and measurable manner.
5.	Arabic Language Day	Arabic Day is an international day for the Arabic language. The department has not managed this moment well, so it becomes a moment of Arabic language development and strengthens pride as an Arabic speaker.
6.	<i>Muḥayyam 'Arabî</i> (Arabic Camping)	The Arabic Camping program is only a plan that the department has not realized during the 2017 ALE curriculum.
7.	Arabic Clubs	The Arab Club program is one of the department activities, but it's not been implemented.
8.	Social Media	The academic community has used social media, such as the WA Group, to communicate in Arabic. Still, the department has not been maximized to develop language skills for students.
9.	Arabic learning class	Learning Arabic proficiency uses Branch Theory, meaning each language proficiency becomes an independent subject. There has been no synchronization between the proficiency courses. The overall evaluation of the semester learning plans for the proficiency courses has not been carried out optimally by the department.
10.	Online Learning	During the COVID-19 pandemic, all courses are taught online. The department has surveyed student learning performance in responding to online learning. The department's internal survey results show that most students lack the mental readiness to do online learning.
11.	Arabic Teaching Approach	In the 2017 ALE curriculum, the approach used by the department in teaching language proficiency s is to use branch theory. Still, along the way, there is a synchrony between the contents of each skill capable of different lecturers.

The table above shows that the ALE department's strategies in the 2017 curriculum vary. Still, from the results of the evaluations that ALE departments have

carried out, many of the department's planned programs have not been appropriately realized.

Choose The Most Suitable Strategy to Achieve Short-Term and Long-Term Goals

To determine the most appropriate strategy to achieve the objectives of the ALE program study, the researcher, in this fifth Step, analyzed the data that the researchers had collected from the First Step to the fourth Step. The systematics of strategy formulation refers to the formulation of measurable targets related to developing strategies to increase the SRL of ALE-UIR students in the language proficiency courses contained in the Fourth Step. The formulation of the development strategy for the development of SRL for ALE students is as follows:

Creation of Arabic Environment (*Bi'ah Luḡhamiyyah*)

Arabic creates an environment that encourages students to use Arabic as a language of communication. Esmaili & Rakati's studies (2022) show that the Arabic environment that uses Arabic as the language of communication between them is a suggestion for the success of Arabic as a second language.

This language environment can be 1) hospitalization; the department held a program for boarding new students either in university dormitories or in collaboration with rental house owners for the department to have an intensive, structured Arabic language program, 2) *Nasyât Ṭullâb*; This activity consisted of Arabic student activities, groups, and individuals, managed by consistent schedules and measurements, collected directly by department or by a set of students led by the lecturer, 3) Arabic Day Moment; Making Arabic Day moment on December 18 as momentum to instill a love of Arabic, actively restore the spirit of Arabic-speaking students, and revitalize the moment with various exciting activities oriented towards developing students' Arabic proficiencies, such as *Muḥayyam 'Arabî* (Arabic Camping) activities, etc., 4) Student Arabic Club; It facilitates student interest talents by forming Arabic language clubs that accommodate the tendencies and interests of student talents, such as the polar reading club, calligraphy, sing Arabiya, etc., 5) Social Media; Utilization social media between students to habituate oral and written Arabic communication, guided by lecturers, such as Whatsapp, Instagram, Tiktok, and other media to communicate with students or students with department lecturers to convey information, 6) Make the ALE department to become the centre of the Language Environment creation program; It makes a model in living the Arabic language environment, where communication between lecturers and services to students are also in Arabic, 7) The department presents Arabic Native Speakers on various occasions, such as public lectures, guest lectures, seminars, and other academic activities.

The Bourina & Dunaeva Study (2019) shows that the necessary modern basis for a lingua-didactic language environment is the use of Information and Communication Technology, which makes it possible to access the world of native speakers. The lingua-didactic environment of language creates socio-cultural communication patterns, provides opportunities to become familiar with different

communication behaviors, ensures students' participation in honest communication, expands the boundaries of language learning situations, and enriches their communication experience.

Monitoring and Evaluation Stages of The Use of Arabic as A Language of Instruction Lectures

In planning the ALE department, the language of instruction for language proficiencies courses uses Arabic in stages. The first year uses a combination of 50% of languages, Arabic and Indonesian, the second year uses 75% Arabic language, and the third year uses 100% Arabic language. The department conducts Monitoring and evaluation for this plan to develop an improvement strategy. The study program translates this strategy into preparing semester learning plans through coordination between lecturers.

Coordination in the formulation of the Semester Lesson Plan

The ALE department's approach to learning Arabic uses a separate system for teaching language proficiency. A separated system in language learning is a learning system that presents language teaching into several subjects, such as listening skills, speaking skills, reading skills, and writing skills. A separated system in language learning is a learning system that presents language teaching into several subjects, such as listening skills, speaking skills, reading skills, and writing skills. (Effendi, 2017), so there needs to be coordination between lecturers who support proficiency courses in determining semester study materials in the Semester Lesson Plan. Apart from that, the Semester Lesson Plan for the proficiency course was born through joint discussions with department lecturers to unite the perception and achievement of department targets on student competencies through these courses. Learning with a heutagogy approach becomes important in learning models in the era of disruption where knowing with a heutagogy system makes students as people who can determine their learning goals independently and make lecturers like consultants, not as the foundation in the learning process (Samin, 2019; Samin et al., 2020).

Orienting The Subjects of Religious as Subjects of Knowledge and Proficiency at The Same Time

Orient religious subjects as the subjects of Knowledge and proficiency simultaneously. The body of Knowledge of the department curriculum 2021, including one of them, is religious sciences. Teaching subjects who entered religious course clumps can use a science-oriented approach and language proficiency by making obligatory references or textbook Arabic. This method makes the eyes of this lecture issues other than science also be subject proficiency *Turats* study.

The ALE body of knowledge picture of the department illustrates the variety of sciences that the department presents in the curriculum to achieve its scientific vision, including the religious sciences.



Figure 1. Body of Knowledge of 2021 ALE Curriculum.

Motivation in Competing

Competitive motivation. SRL is closely related to being mentally ready to compete. Therefore, students need to be encouraged, stimulated, motivated, and facilitated on an ongoing basis to be involved and enthusiastic in competing at local, national, and international levels. Students should be challenged to develop globally. High grades are now less critical if they are low in soft skills. The needs of the 21st century are learning and innovation skills in the form of critical, creative, and innovative thinking, communication skills, and good collaboration. This condition is so that students have a high level of involvement in their learning process because one of the successes in creating SRL in students is the active involvement of students (Zhang et al., 2022).

Awards Program for Student Achievement

The existence of an award program and raising the spirit of competition and a sense of being recognized and respected can also maintain the existing competitive nature, even more, to increase it. The era of disruption forced students to be out of the box. No longer a student who is too comfortable in a safe zone. Explore potential, and develop interests and talents to achieve achievements and relationships in the future.

Guidance Lecturer in Competing

Another critical strategy for ALE to prepare is to Guarantee guidance from departments and universities for students who will compete to increase student optimism and confidence. Saint et al. study (2020) showed that not all students could create SRL. Therefore, the role of other parties in supporting to present SRL became essential. Lau's study showed that students' baseline SRL levels and classroom

performance significantly affected the level of support provided by teachers and how much autonomy they would be given during class (Lau, 2022).

Conclusion

This study aimed to formulate strategies for improving student SRL ALE UIR Program Study on student proficiency courses in Arabic. The systematics of strategy formulation refers to the five stages. These stages include (1) Identification of the environment, (2) Analyzing internal and external environment by measuring the strengths and weaknesses, opportunities, and threats, (3) Formulate the factors measure of success (critical success factors) of strategies designed based on previous analysis, (4) Determine objectives and measurable targets, evaluating various strategic alternatives taking into account available resources and external conditions encountered, (5) Choose the most appropriate strategy to achieve short-term goals and long-term. This study shows the results of several strategies for improving student SRL in course proficiency; 1) Creation of environmental Arabic (*Bi'ah Lughawiyah*), 2) monitoring and evaluation stages of the use of Arabic as a language of instruction lectures, 3) Coordination in the formulation of Semester Lesson Plan, 4) Orienting the subjects of religious as subjects of Knowledge and proficiency in the same time, 5) Motivation in competing, 6) Program awards for student achievement, 7) Guidance lecturer in competing. The novelty of this research is to create a comprehensive plan that an institution, such as a department, can implement to create a system that helps students to be able to improve their SRL.

REFERENCES

- Ahmad, S. (2018). Al-Kitâb al-Madrasî li al-Ta'limi al-Lughah al-'Arabiyyah li al-Nâṭiqîna Bi Ġairiha: Ahamiyyatuhu wa Wazâifatuhu wa Ahdâfu Ta'limihâ. *Al-Manar*, 1(8).
- Aulia, L. N., Susilo, S., & Subali, B. (2019). Upaya Peningkatan Kemandirian Belajar Siswa dengan Model problem-based Learning Berbantuan Media Edmodo. *Jurnal Inovasi Pendidikan IPA*, 5(1).
- Bourina, H. v., & Dunaeva, L. A. (2019). The Conceptual Model of the Artificial Linguistic, Educational Environment for Achieving Oral Communication Skills in a Second Foreign Language. *E-Learning and Digital Media*, 16(1).
- Cambridge Dictionary. (2022). *STRATEGY* | *English meaning* - Cambridge Dictionary. Recuperado 8 de novembro de 2022, de <https://dictionary.cambridge.org/dictionary/english/strategy>
- Effendi, A. F. (2017). *Metodologi Pengajaran Bahasa Arab* (7^o ed). Malang: Misykat
- Esmaili, S., & Rakati, D. M. (2022). Phenomenology of Challenges in Creating Arabic Speaking Learning Environment from Students' Perspective. *Language Related Research*, 13(1).

- Farida, A., & Indah, R. P. (2018). Penerapan Blended Learning untuk Peningkatan Kemandirian Belajar dan *Critical Thinking* Mahasiswa. *Jurnal Derivat*, 5(2).
- Fatimah, F. N. D. (2020). *Teknik Analisis SWOT*. Anak Hebat Indonesia.
- Habók, A., & Magyar, A. (2018). Validation of a Self-Regulated Foreign Language Learning Strategy Questionnaire through multidimensional modeling. *Frontiers in Psychology*, 9(AUG).
- Habók, A., Magyar, A., & Molnár, G. (2022). English as a foreign language learners' strategy awareness across proficiency levels from the perspective of self-regulated learning meta factors. *Frontiers in Psychology*, 13.
- Hariadi, B. (2004). *Strategi Manajemen*. Bayu Media Publising.
- Harris, K. R., & Graham, S. (1999). Programmatic intervention research: Illustrations from the evolution of self-regulated strategy development. *Learning Disability Quarterly*, 22(4).
- Huang, X., Dong, L., Chandru Vignesh C., & Praveen Kumar D. (2022). Self-Regulated Learning and Scientific Research Using Artificial Intelligence for Higher Education Systems. *International Journal of Technology and Human Interaction*, 18(7).
- Jeno, L. M., Adachi, P. J. C., Grytnes, J. A., Vandvik, V., & Deci, E. L. (2019). The effects of m-learning on motivation, achievement and well-being: A Self-Determination Theory approach. *British Journal of Educational Technology*, 50(2).
- Kristin, F. (2018). Pengaruh Pembelajaran Terbimbing (*Guided Teaching*) terhadap Peningkatan Kemandirian Belajar Mahasiswa. *Jurnal Pendidikan dan Ilmu Sosial*, 28(1).
- Lau, K. L. (2022). Exploring achievement-level differences in implementing self-regulated learning instruction in a classical Chinese reading intervention program. *Frontiers in Education*, 7.
- LeBlanc, P. J. (2018). Higher Education in a VUCA World. *Change: The Magazine of Higher Learning*, 50(3–4).
- Muis, K. R. (2007). The Role of Epistemic Beliefs in Self-regulated Learning. *Educational Psychologist*, 42(3), 173–190. <https://doi.org/10.1080/00461520701416306>
- Oxford Dictionary. ([s.d.]). *Strategy noun - Definition, pictures, Pronunciation, and Usage Notes | Oxford Advanced American Dictionary at OxfordLearnersDictionaries.com*. Recuperado 8 de novembro de 2022, de https://www.oxfordlearnersdictionaries.com/definition/american_english/strategy
- Punaji, S. (2013). *Metode Penelitian Pendidikan dan Pengembangan*. Jakarta: Kencana.
- Risdianto, E. (2019). *Analisis Pendidikan Indonesia di Era Revolusi Industri 4. 0*. April, 0–16.

- Saint, J., Whitelock-Wainwright, A., Gasevic, D., & Pardo, A. (2020). Trace-SRL: A Framework for Analysis of Microlevel Processes of Self-Regulated Learning from Trace Data. *IEEE Transactions on Learning Technologies*, 13(4).
- Samin, S. M. (2019). Heutagogy in Arabic Class: How It Is Applied in The Islamic Education Study Program of Universitas Islam Riau. *Journal of Arabic Linguistics and Education*, 5(1).
- Samin, S. M., & Hikmah, H. (2021). Self-Regulated Learning of Arabic Education Students Via Moodle Discussion Forum. *Journal of Arabic Linguistics and Education*, 7(1).
- Samin, S. M., Pebrian, R., & Zulkifli, A. (2020). *Heutagogy Approaches for Arabic Learning in Higher Education in Industrial Revolution 4.0. ICoSEEH 2019.*
- Samin, S. M., Yunita, Y., & Akzam, I. (2021). Strategi Peningkatan Kemandirian Belajar Mahasiswa Pendidikan Bahasa Arab di Era Revolusi Industri 4.0. *Perspektif Pendidikan Dan Keguruan*, 12(2).
- Saputra, J. (2017). Penggunaan Model Problem Based Learning Berbantuan E-Learning Terhadap Kemandirian Belajar Mahasiswa. *Kalamatika Jurnal Pendidikan Matematika*, 2(2).
- Sugiyono. (2014). *Metode Penelitian Kualitatif dan Kuantitatif dan R&D*. Alfabeta.
- Zhang, M., Du, X., Hung, J.-L., Li, H., Liu, M., & Tang, H. (2022). Analyzing and Interpreting Students' Self-regulated Learning Patterns Combining Time-series Feature Extraction, Segmentation, and Clustering. *Journal of Educational Computing Research*, 60(5).
- Zubaidah, S. (2018). Mengenal 4C: Learning and Innovation Skills untuk Menghadapi Era Revolusi Industri 4.0. *2nd Science Education National Conference, April*, 1–18. https://www.researchgate.net/publication/332469989_MENGENAL_4C_LEARNING_AND_INNOVATION_SKILLS_UNTUK_MENGHADAPI_ERA_REVOLUSI_INDUSTRI_40_1