



Heutagogy in Improving Metacognitive Intelligence of Students in Pesantren

M. Yunus Abu Bakar¹, Hasan Baharun^{2*}, Nur Silfiataun Hasanah³

¹UIN Sunan Ampel Surabaya, Indonesia

^{2,3}Universitas Nurul Jadid Paiton Probolinggo, Indonesia

¹elyunusy@uinsby.ac.id, ²ha54nbaharun@gmail.com, ³silfinur@gmail.com

*Correspondence

Article Information:

Received March 24, 2022

Revised September 15, 2022

Accepted September 21, 2022

Keywords:

Heutagogy, metacognitive intelligence, *Ma'had Aly*

Abstract

This study aims to analyze the heutagogical approach to improving the metacognitive intelligence of students at Ma'had Aly. This study used a qualitative approach with phenomenological research. The researchers attempted to understand the phenomena of education and learning activities in Ma'had Aly. Researchers conducted participatory observations, interviews, and documentation. Data analysis was carried out through the stages of data display, data reduction, and data conclusion. The results showed that the heutagogical approach implemented at Ma'had Aly improved students' metacognitive intelligence through some activities, including a reading test with the blank matter, meaning understanding, memorizing *nadzom*, and achieving the learning goal.

INTRODUCTION

The general objective of national education is to create advanced, independent, and prosperous people and societies, both physically and mentally, and in fields related to improving human quality (Sakarina et al., 2022); (Prestiana & Sugito, 2021). One of the pillars of education is the teacher (Amir, 2019; Tantowi et al., 2022; Maher et al., 2022). In educational activities, teachers are critical actors in the progress of a country (Segarra & Julià, 2022). Teachers are expected to shape today's young generation's personality, character, morality, and intellectual capabilities (Singh et al., 2020; van Geel et al., 2022). Through the teacher, students will know the knowledge, values, ethics, morals, enthusiasm, and general knowledge that students have not been able to reach in their lives (Asiri, 2020; Beni et al., 2022).

The success of education can be assessed through the ability of students to face the learning material that the teacher has taught in the classroom (Vemde et al., 2022; Chaudhuri et al., 2022). However, operationally, this success is primarily determined by education management and influenced by its educational factors. These factors are teachers, materials, and students (Tümen Akyıldız, 2019). These three factors have a very close correlation; they are even used as an integral component that must be present in learning activities (Erkan, 2019). However, the teacher is the most vital and dominant component in teaching and learning activities. Teachers have the role as planners and

implementers of learning and motivation to encourage students to do learning assignments (Irfan et al., 2019; Fauzan et al., 2022). This indicates the urgency of educators in the world of education, whose job is to teach and as motivators and facilitators in learning activities (Aboagye & Yawson, 2020).

Therefore, teachers should apply the transfer of knowledge, but they should also transfer values to their students. Teaching and educating are the obligations of educators that must be done. Therefore, teachers must have good character to be used as role models because the role models of educators determine the value of teachers (Muali et al., 2019). The position of the teacher has a critical situation and role because students' character can be formed after seeing firsthand an educator, especially in *Ma'had Aly* (college at boarding school) Nurul Jadid, Paiton, Probolinggo, East Java as the site for this research.

As a higher education institution oriented to spiritual development, educators or lecturers at *Ma'had Aly* Nurul Jadid, Paiton, Probolinggo should not assume that the success of learning can be measured by their completeness in delivering all the material in the curriculum. However, several factors support it, and one of them is the learning approach used to convey material to students, namely the heutagogical approach.

Heutagogy has generated new roles and ideas in education, where the educator is not the central icon in learning. Still, this approach focuses more on students who are the center of activities in learning (Racicot, 2020). Through this approach, *Ma'had Aly* Nurul Jadid students were trained to think deeply to solve their learning problems independently.

Researchers have widely studied research on heutagogy. Sulistia (2019) states that heutagogy can be an alternative teacher training approach to create educators' awareness of its essential role in learning. Lestari et al. (2019) also state that heutagogy can improve access to the quality of the higher education system, so it is very suitable for learning in higher education. Likewise, Febrina (2019) says that the heutagogical approach embodied in discussion activities on the yellow book material supported by various sources and learning media at Islamic boarding schools positively impacts students' learning.

Likewise, the study of metacognitive learning activities also affects students' learning. According to Othman et al. (2014), the metacognitive strategies used by students improved their understanding of the text they had read. To improve metacognitive intelligence, teachers and students can implement information literacy, as stated by Siyaya (2022). Vreeze-Westgeest & Vogelaar (2022) say that Mirjam G. J. de Vreeze-Westgeest and Bart Vogelaar state that all children made significant improvements in working memory and metacognition. Intelligence significantly predicted verbal and visual working memory.

According to Muhid et al. (2020), this metacognitive strategy positively affects students' reading achievement. James & Bulusan (2020) state that the participants demonstrated a high metacognitive awareness of reading strategies while reading

academic texts in English as their prime choices, followed by support strategies and a global system.

From the several studies mentioned above, it turns out that there are no researchers who have studied heutagogy in improving students' metacognitive intelligence. Therefore, this was the novelty of this research, in which the researchers tried explicitly to make a heutagogical approach as an alternative medium in increasing the students' intelligence at the Islamic religious higher education level, which focused explicitly on metacognitive intelligence possessed by students as a competitive advantage.

Given the importance of the heutagogical approach and metacognitive intelligence in learning activities, researchers were interested in integrating these two concepts into a new thesis in this research activity so that it became a rhythm that could provide a profound meaning for the scientific development of Islamic education. In this case, the researchers focused the study on the heutagogical approach to improving students' metacognitive intelligence in *Ma'had Aly Nurul Jadid*.

METHOD

This study used a phenomenological type of qualitative approach, in which researchers tried to understand the phenomenon of education and learning activities at *Ma'had Aly Nurul Jadid*, Paiton, Probolinggo, East Java in depth. In this case, the researchers attempted to analyze the phenomenon of what was experienced by the research subjects, for example, behavior, perception, motivation, design, and evaluation in learning. Researchers tried to find the essence or deep meaning of heutagogy in increasing the metacognitive skill of students at *Ma'had Aly Nurul Jadid*, Paiton Probolinggo.

To obtain valid information, the researchers conducted interviews with several teachers and eight students who were selected using a purposive sampling technique to obtain information about the heutagogy approach carried out by the *Ma'had Aly Nurul Jadid* community in improving the metacognitive intelligence of students. Furthermore, the researchers made observations and were directly involved in learning activities to understand the activities that occurred; then, the researchers documented a research theme. The data analysis technique was carried out through the data display stage, where the data obtained in the field was presented entirely, then some of the data were reduced according to the research theme. In this case, the researchers sorted and selected the data according to the research focus. The last step was drawing conclusions, where in this case, the researchers concluded a research finding.

RESULTS

The heutagogical approach in *Ma'had Aly Nurul Jadid* was implemented by educators to increase the cognitive intelligence of students. The design of heutagogy

learning activities implemented in *Ma'had Aly* Nurul Jadid in honing student intelligence was carried out as follows;

Academic Activity

Academic activities at *Ma'had Aly* Nurul Jadid were learning activities like informal education institutions in general (higher education). However, *Ma'had Aly* focused more on religious aspects. In learning activities at *Ma'had Aly* Nurul Jadid Paiton Probolinggo, lecturers implemented a heutagogical approach as a strategy to create student-centered learning, such as presentation, discussion, debate, and so on.

In implementing the heutagogical approach, lecturers usually gave students independent and group assignments and discussed them in the next week of the meeting, like the subjects taught by Imdad Robbani as a lecturer at *Ma'had Aly*. Several days before the teaching and learning activities took place, he first gave lecture material presented via audio media, which contained the translation of the yellow book, which would be reviewed and discussed at the next meeting. When the second teaching and learning activity took place, students already had a description of the material they would discuss at that time.

Yulianti as a student at *Ma'had Aly*, said, "it is time for us to learn independently and try to find what to learn. If you do not understand, you can consult with the lecturer". According to her, "learning with a heutagogical approach is a way of learning that brings much good, and this system is quite fun and makes us excited to continue learning. Through this approach, we are taught about the breadth of thought. When we discuss, various rational arguments are put forward and mutually answer each other; we are free to explore our reasoning and ideas as long as we do not exceed the limit. Moreover, he did invite us to ask various things about the material".

In practice in the field, students were asked to read, translate, and understand the lecture material independently. When some *lafadz* and definitions are challenging to understand, they try to understand themselves, even asking for their senior's and teachers' help. Their curiosity about the book's contents proved that their metacognitive intelligence began to increase in learning the yellow book. Several books used in the heutagogy approach can be presented as follows:

Table 1: Takhasus (Concentration on a Specific Program)

NO	SEMESTER	TAKHASUS (CONCENTRATION)
1	<i>Ma'had Aly</i> , Semester 3	Fathul Mu'in & Faroid
2	<i>Ma'had Aly</i> , Semester 3	Mantiq & Arud
3	<i>Ma'had Aly</i> , Semseter 5	Balagoh & Qowaidul Fiqh
4	<i>Ma'had Aly</i> , Semester 7	Ushul Fiqh

From the observations of researchers, it can be seen that these books are very suitable to be studied and understood with a heutagogical approach, considering that the material provides broad ideas and can be learned from different points of view.

Reading Test with Blank Matter

The reading test with blank matter is an activity of heutagogical approach implemented through student activity in reading a yellow book with no meaning (bald book). This follows the vision of *Ma'had Aly* Nurul Jadid, which is to produce students who master Islamic-based material. *Ma'had Aly* Nurul Jadid has *takhassus* Fiqih and Ushul Fiqih, aiming to create superior and capable students. This is manifested in teaching and learning activities that have been planned and systematic.

Heutagogical approach practice carried out to improve students' metacognitive intelligence through a reading with blank matter test is carried out in several stages. First, the teacher read the book aloud and interpreted it. Then, the students gave the meaning according to the explanation from the teacher. Moreover, the teacher explained the material they read, and students were asked to listen and understand what the teacher said. If they did not understand, they could ask. After the material had been explained, they were asked to reread the book by using a blank or bald yellow book as a medium to determine the level of students' understanding of what they had read and heard. This step was intended to hone students' reading skills of the yellow book and determine the level of experience and application of the *Nahwu* and *Shorrof* knowledge they have mastered.

According to Zainuddin, a teacher, "This technique is called "*bandongan*," where the teacher in each study group defines the book or provides an overview of the contents of each chapter studied before entering the stage of understanding the contents of the book and reasoning for themselves." This can hone the students' metacognitive intelligence in remembering complex and foreign *mufrodats* without memorizing them. Because someone who often says a word will automatically recognize it by himself without learning it.

Meaning Understanding

Meaning Understanding is an activity that students must do at *Ma'had Aly* to give meaning to the book they are studying and understand the importance of the book's text. Students are required to master the book well, both from the linguistic aspect, *Nahwu*, and *Shorrof*, the meaning contained in it, to provide a detailed explanation of the content contained in the material read by students.

Some students can read the *lafadz* only, but they cannot explain the content and meaning contained in the reading. Therefore, the teachers at *Ma'had Aly* have the power to apply a heutagogical approach so that students can master the material they are learning perfectly through independent learning activities.

Through these activities, students are expected to hone their abilities to provide meaning and understanding of what the content of the book is. According to Mudlori as a teacher at *Ma'had Aly*, Nurul Jadid said that "*murodiyah*" (understanding the contents of the yellow book) is one of the essential points for learning activities at *Ma'had Aly*, considering the learning target of the foundation of *Ma'had Aly* which is being able to understand the meaning of the yellow book and apply it in everyday life. The target to be

achieved through Murodiyah is that students must be able to read the book by themselves, understand it, convey it to others, and provide understanding to them.

Zainuddin also conveyed the same thing as a teacher, that reading and understanding the yellow book is not too difficult. Even generally, children over there are easy to read and understand the book. Their interpersonal communication makes them even have difficulty conveying their knowledge to others.

Knowing the facts above, it can be understood that the increase in students' metacognitive intelligence at *Ma'had Aly Nurul Jadid* through the heutagogy approach has been built by the existing system, where students are required to be proactive in their learning activities. They are required to continue to develop their knowledge directly through the delivery of the material they understand to others.

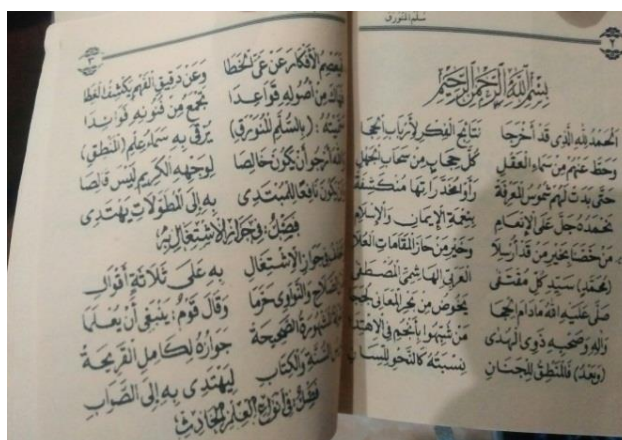
Through this activity, students can explore their competencies directly so that understanding the material obtained can be applied in natural form or project-based learning. In this case, students' metacognitive intelligence can be honed well.

Memorizing Nadzom

Memorizing Nadzom has become a habit for students at several pesantren (Islamic boarding schools). Of course, learning is not easy for every individual because it requires extraordinary intelligence. Therefore, *Ma'had Aly Nurul Jadid* has a unique strategy to make it easier for students to memorize, especially the *Nadzom* of "Idhohul Mubham."

The heutagological approach used in improving students' memorization is combined with the mnemonic learning approach through song rhythms. This is intended to simplify and remember learning that requires memorization for students at *Ma'had Aly Nurul Jadid*. Sulyanto as a teacher at *Ma'had Aly*, said that "to memorize the contents of the *Idhohul Mubham* book, we invite students to compose the *nadzom* into a song rhythm that is hit and is nice to hear, so they are happy and enjoy the song. It is through the repeated songs that they will easily remember and memorize what they have read".

Figur 2: Idhohul Mubham Book



The technique for singing songs accompanied by *nadzom* is unique and exciting; students used makeshift media or tools, such as "*kentongan*" made of bamboo, glasses, spoons, and gallons, to enliven and provoke students' motivation to read *nadzom*. Through this *nadzom* memorization activity, students can indirectly strengthen their cognitive intelligence because they must memorize and understand the meaning of the material they learn.

Yulianti as a student of *Ma'had Aly Nurul Jadid* conveyed that she was pleased with the reading of the *nadzom*, which was read together and used a song. Through the media of songs sung while reading the book's text, various difficulties in understanding the book are indirectly lost. Reading together, accompanied by songs and mediocre media, creates a happy mood. The activities are interesting and can increase imagination in learning.

This shows that to improve metacognitive intelligence, students at *Ma'had Aly Nurul Jadid* must take advantage of various tools in learning, starting from the material, methods or approaches to be used, media, and evaluation techniques to measure the level of learning success.

Achievement of Learning Goal

By the provisions of *Ma'had Aly Nurul Jadid*, students are trained to focus and be consistent in their learning. In that sense, they must focus on achieving predetermined targets from the affective, cognitive, and psychographic aspects. All students must complete all the targets *Ma'had Aly Nurul Jadid* set, both those listed in the academic system (curriculum) and non-academics. If they cannot meet the target, they are not allowed to take the test, which is carried out every three weeks to measure learning achievement and completeness, which implies whether the students will increase or not at the next level.

Learning evaluation at *Ma'had Aly Nurul Jadid* is intended to measure and evaluate the extent to which student learning completeness has been achieved. The assessment is carried out in a planned, systematic manner and is mandatory for all students. After students take the evaluation test and are declared that they have passed, they will continue with other *takhassus* programs. Meanwhile, remedies and intensive coaching will be carried out for students who do not reach the predetermined target. If intensive coaching has not been completed, students are not allowed to attend graduation or do not advance to the next level.

Graduation as an indicator of student completeness in taking lessons at *Ma'had Aly Nurul Jadid* is divided into three: graduation of *Tamhidiah*, *I'dadiyah*, and *Ma'had Aly*. Each *marhalah* has different *takhosus*, including *Tamhidiah* has *takhassus Nubdatul Bayan*, and practice reading *Fathul Qorib* book. *I'dadiyah* has *takhassus Fathul Mu'in* and *Faroid*. Meanwhile, *Ma'had Aly* has *takhassus Idohul Mubham*, *Husnus Siyagoh*, *Ilmu Arud*, *Qowaidul Fiqh*, and *Ushul Fiqh*. Of the many lessons taken

at *Ma'had Aly*, techniques, strategies, and approaches are adapted to the conditions and characteristics of the learners.

The heutagogical approach used in the three *marhalah* provides as many opportunities as possible for students to learn or process independently with the guidance of teachers or lecturers. This heutagogical approach is expected to have a good impact on improving students' metacognitive intelligence on an ongoing basis. This is because students are given full power and the opportunity to read, understand, and memorize the *nadzom*, and they will try to master these three competencies.

DISCUSSION

The heutagogical approach stems from a humanistic approach and a learning approach. Heutagogy is a study of learning determined independently by the learner. It can be seen as a natural improvement from previous educational methodologies, especially from the development of abilities and perhaps to prepare optimal approaches to learning in the 21st century (Iskandar, 2014). Heutagogical approach supports and completes pedagogical theory because heutagogy is about self-determined learning (Othman et al., 2014).

Heutagogical learning is the root of pedagogy. Heutogogy uses a holistic approach, in which students are free to determine their learning techniques and how they learn and prove that they have mastered the material, even though it still requires or involves teacher guidance (Sulistia, 2019). Therefore, heutagogy is known as an idea that emphasizes the learning process of students, which places more emphasis on aspects of developing students' abilities (Muhid et al., 2020). Someone who considers learning will know his self-concept about what he likes to know and grow.

The heutagogy design provides an opportunity for Mahasantri (university students staying in Islamic boarding school) at *Ma'had Aly* Nurul Jadid to conduct critical analysis, explore their potential, connect them with the surrounding environment, and build self-confidence, self-ability, and creativity in taking action (Chimpololo, 2019). Heutagogical approach is a learning model that emphasizes students' activeness in independent learning and struggling with texts through learning resources (Khoeriyah, 2019).

Transformation of heutagogy, namely the change of the pattern of education from "pedagogy" to "heutagogy." The teacher-oriented pedagogy (education 1.0) pattern slowly developed into andragogy, adult learning (education 2.0). Andragogy was designed with mobile learning (education 3.0), leading to a heutagogical practice that encourages self-determined learning (education 4.0). The essential elements in heutagogical learning are exploring, creating, collaborating, connecting, sharing, and reflecting (Nadelson et al., 2017).

In designing learning at *Ma'had Aly* Nurul Jadid, the heutagogical approach theoretically includes three critical stages, namely: (1) students and teachers work together to identify learning needs and outcomes, then they agree on an agreement

contract; (2) During learning activities, the teacher creates challenging tasks to complete, both independently and together; (3) learning is assessed based on the agreed outcomes to see whether these outcomes have been achieved.

This approach challenges the way of thinking about "learn and learn". From this, heutagogy is seen as the capability of providing direction for the future of students, which impacts the essential skills that are the stages of innovation. Therefore, learning is a form of experience that takes place in all environments and throughout life and is adjusted to the characteristics and competencies of students (Tümen Akyıldız, 2019). This is in line with the word of God in QS. Al-Nahl (16): 125

أَدْعُ إِلَى سَبِيلِ رَبِّكَ بِالْحُكْمَةِ وَالْمَوْعِظَةِ الْحَسَنَةِ وَجَادِهِمْ بِالَّتِي هِيَ أَحْسَنُ إِنَّ رَبَّكَ هُوَ أَعْلَمُ بِمَنْ ضَلَّ عَنْ سَبِيلِهِ وَهُوَ أَعْلَمُ بِالْمُهْتَدِينَ

It means : Invite (humans) to the way of your Lord with wisdom and good instruction and argue with them in a way that is best.

The verse explains the importance of a teacher in designing and managing his learning, how he should behave, and using various methods to develop his students' potential and learning interests. Students have intelligence in managing their learning and themselves through this, otherwise known as metacognitive intelligence.

One aspect of development that is always the focus of attention is the child's cognitive development, without neglecting other developmental aspects (Sulistia, 2019). Cognitive-related development is how children can manage or regulate these cognitive abilities in responding to situations. Therefore, a person must be aware of his thinking ability and be able to handle it. Metacognition is one of the factors supporting cognitive skills related to intellectual skills.

Metacognitive intelligence is understood as thinking or thinking about thinking. In other words, how do students understand their abilities and how to use them in some ways? Metacognitive learning is believed to create more meaningful learning, and students are invited to be aware of their strengths and weaknesses (Zhou, 2014). Metacognitive knowledge is knowledge about cognition, awareness, and understanding (Puspitasari, 2018).

Metacognitive strategies for students can be carried out in 3 stages: self-planning, self-monitoring, and self-evaluating (Muali et al., 2019). Metacognition has divided into three components: 1) personal knowledge, which is the self-confidence of someone who has better cognitive abilities than other people abilities (Sutama et al., 2021); (2) Task knowledge, which is an understanding that various variations in carrying out tasks have promising implications for someone in completing the task (Muhid et al., 2020); (3) The strategy of knowledge of awareness; that there is a sound effect even though only half of all the strategies given in solving the problem.

The purpose of metacognitive intelligence is to increase awareness of self-questioning (James & Bulusan, 2020). Through this approach, educators offer Mahasantri to be aware of their strengths and weaknesses. Metacognitive activities are urgent because they can train students to think deeply and plan and control all thinking activities that have been carried out. Applying metacognitive skills during learning will help students obtain knowledge that lasts long enough in students' memory and understanding.

Therefore, metacognitive intelligence is needed for student learning success, considering that metacognitive skills allow students to manage cognitive skills and see their weaknesses so that improvements can be made in subsequent actions. If a student applies metacognitive skills well, then the learning target has been achieved optimally.

CONCLUSION

The heutagogical approach implemented in learning activities at *Ma'had Aly Nurul Jadid* dramatically impacts students' metacognitive intelligence development. This approach was carried out using several ways, including; a reading test with the blank matter, meaning understanding, memorizing *nadzom*, and achieving the learning goal. The success of *Ma'had Aly Nurul Jadid* in developing students' metacognitive intelligence through the heutagogical approach cannot be generalized and applied to all levels of education. Still, this approach is only explicitly used and suitable in *Ma'had Aly Nurul Jadid* because it is adjusted to the characteristics and learning conditions. This implies developing advanced learning designs to create effective and efficient learning, especially in developing students' metacognitive intelligence. Therefore, this study had limited scope, thus providing opportunities for further researchers to develop studies on heutagogy in developing students' metacognitive intelligence.

REFERENCES

- Aboagye, E., & Yawson, J. A. (2020). Teachers' perception of the new educational curriculum in Ghana. *African Educational Research Journal*, 8(1), 6–12.
- Amir. (2019). Membangun Budaya Mutu Pada Lembaga Pendidikan Islam Menuju Madrasah Unggul. *Al-Tanzim : Jurnal Manajemen Pendidikan Islam*, 3(2), 1–12. <https://doi.org/10.33650/al-tanzim.v3i2.676>
- Asiri, A. A. (2020). Teachers' Perceptions of Educational Administrators' Support for Inclusive Education. *Journal of Education and Learning*, 9(6), 112. <https://doi.org/10.5539/jel.v9n6p112>
- Baharun, H., Muali, C., Minarti, S., & Qurohman, M. T. (2019). Analysis of Metacognitive Capability and Student Learning Achievement Through Edmodo Social Network. *IOP Conf. Series: Journal of Physics, Conf. Seri*, 1–4. <https://doi.org/10.1088/1742-6596/1175/1/012150>
- Beni, S., Fletcher, T., & Ní Chróinín, D. (2022). 'It's not a linear thing; there are a lot of intersecting circles': Factors influencing teachers' implementation of Meaningful Physical Education.' *Teaching and Teacher Education*, 117(103806), 1–11. <https://doi.org/10.1016/j.tate.2022.103806>
- Bernadette M. Racicot. (2020). *Metacognitive Strategies on Reading English Texts of ESL Freshmen: A Sequential Explanatory Mixed Design*. 15(1), 20–30.
- Chaudhuri, S., Muhonen, H., Pakarinen, E., & Lerkkanen, M. K. (2022). Teachers' visual focus of attention in relation to students' basic academic skills and teachers' individual support for students: An eye-tracking study. *Learning and Individual Differences*, 98, 1–11. <https://doi.org/10.1016/j.lindif.2022.102179>
- Chimpololo, A. (2019). An analysis of heutagogical practices through mobile device usage in a teacher training programme in Malawi. *Journal of Learning for Development*, 7(2), 190–203. <https://doi.org/10.56059/jl4d.v7i2.391>
- Erkan, A. (2019). Impact of Using Technology on Teacher-Student Communication/Interaction: Improve Students Learning. *World Journal of Education*, 9(4), 30–40. <https://doi.org/10.5430/wje.v9n4p30>
- Fauzan, M., Groot, W., & Witte, K. De. (2022). Teachers' preferences for online professional development: Evidence from a discrete choice experiment. *Teaching and Teacher Education*, 119, 1–13. <https://doi.org/10.1016/j.tate.2022.103870>
- Febrina, E. (2019). Metakognitif Sebagai Keterampilan Berfikir Tingkat Tinggi Pada Pembelajaran Abad 21. *Jurnal Ilmu Pendidikan Dan Pengajaran*, 6(1), 25–32.
- Irfan, S., Soomro, K., & Hussain, N. (2019). Metacognitive Awareness of Reading Strategies, Reading Practices and Academic Attainments of University Students. *Journal of Education and Educational Development*, 6(1), 126–137. <https://doi.org/10.22555/joeeed.v6i1.2749>
- Iskandar, S. M. (2014). Pendekatan Keterampilan Metakognitif dalam Pembelajaran

- Sains di Kelas. *Erudio: Journal of Educational Innovation*, 2(2), 13–20. <https://doi.org/10.18551/erudio.2-2.3>
- James, H. D., & Bulusan, F. (2020). Metacognitive strategies on reading english texts of ESL freshmen: A sequential explanatory mixed design. *TESOL International Journal*, 15(1), 20–30.
- Khoeriyah, M. (2019). Heutagogy in the Course of Pesantren Education (Case Study At Pesantren Salaf Al-Luqmaniyyah). *Sunan Kalijaga International Journal on ...*, 3(1), 66–79. <https://doi.org/10.14421/skijier.2019.2019.31.07>
- Lestari, B., Nindiasari, H., & Fatah, A. (2019). Penrapan Pendekatan Metakognitif untuk Meningkatkan Kemampuan Berfikir Kritis Matematis Siswa SMA ditinjau dari Tahap Perkembangan Metakognitif. *Jurnal Pendidikan Matematika*, 3(2), 135–145. <https://doi.org/10.31000/prima.v3i2.1209>
- Maher, E. M., Jung, H., & Newton, J. A. (2022). Mathematics Learning, Teaching, and Equity in Policy and Programs: The Case of Secondary Mathematics Teacher Education in the United States. *International Journal of Education in Mathematics, Science and Technology*, 10(2), 308–327. <https://doi.org/10.46328/ijemst.2110>
- Muali, C., Minarti, S., Taufik Qurohman, M., & Haimah. (2019). Analysis of metacognitive capability and student learning achievement through edmodo social network. *Journal of Physics: Conference Series*, 1175(1). <https://doi.org/10.1088/1742-6596/1175/1/012150>
- Muhid, A., Amalia, E. R., Hilaliyah, H., Budiana, N., & Wajdi, M. B. N. (2020). The effect of metacognitive strategies implementation on students' reading comprehension achievement. *International Journal of Instruction*, 13(2), 847–862. <https://doi.org/10.29333/iji.2020.13257a>
- Nadelson, L. S., Berg, W., Fox, B., Grandbouche, P., Harris, M., Kroschel, T. L., & Sandoval, S. (2017). Snap, Tweet and Post: College Student Social Media Perceptions and Heutagogic Practices and Uses. *International Journal of Higher Education*, 6(4), 11–27. <https://doi.org/10.5430/ijhe.v6n4p11>
- Othman, Y., Mahamud, Z., & Jaidi, N. (2014). The effects of metacognitive strategy in reading expository texts. *International Education Studies*, 7(13), 102–111. <https://doi.org/10.5539/ies.v7n13p102>
- Prestiana, K. E., & Sugito, S. (2021). Managing human resource development of educators in inclusion-based elementary school. *Journal of Education and Learning (EduLearn)*, 15(1), 1–10. <https://doi.org/10.11591/edulearn.v15i1.16749>
- Puspitasari, I. N. N. (2018). Pendidikan Pragmatis-Progresif Islamic Internasional (IIS) Kediri Di Era Industri 4.0. *REALITA; Jurnal Penelitian Dan Kebudayaan Islam*, 16(2), 115–128. <https://doi.org/10.30762/realita.v16i2.1034>
- Sakarina, S., Pratiwi, R., & Surahman, S. (2022). Strategic Management of Islamic

- Education: Revealing The Challenges of Professionalism. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 06(03), 778–788.
- Segarra, J., & Julià, C. (2022). Mathematics Teaching Efficacy Belief and Attitude of Pre-service Teachers and Academic Achievement. *European Journal of Science and Mathematics Education*, 10(1), 1–14. <https://doi.org/10.30935/SCIMATH/11381>
- Singh, S., Kumar, S., & Singh, R. K. (2020). A Study of Attitude of Teachers towards Inclusive Education. *Shanlax International Journal of Education*, 9(1), 189–197. <https://doi.org/10.34293/education.v9i1.3511>
- Siyaya, M. C. (2022). Information Literacy and Metacognitive Abilities of Teachers: Case of a South African Rural School. *International Journal of Education and Literacy Studies*, 10(1), 173. <https://doi.org/10.7575/aiac.ijels.v.10n.1p.173>
- Sulistia, R. (2019). Heutagogy As A Training Approach For Teachers In The Era Of Industrial Revolution 4.0. *Jurnal Pendidikan Dan Kebudayaan*, 4(1), 127–138. <https://doi.org/10.24832/jpnk.v4i2.1222>
- Sutama, S., Anif, S., Prayitno, H. J., Narimo, S., Fuadi, D., Sari, D. P., & Adnan, M. (2021). Metacognition of Junior High School Students in Mathematics Problem Solving Based on Cognitive Style. *Asian Journal of University Education*, 17(1), 134–144. <https://doi.org/10.24191/ajue.v17i1.12604>
- Tantowi, A., Subhan, A., & Romadon, S. (2022). Mutual Relationship Management Between Teachers and Parents: Strategies for Improving Student Learning Outcomes. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 06(03), 802–813.
- Tümen Akyıldız, S. (2019). Do 21st Century Teachers Know about Heutagogy or Do They Still Adhere to Traditional Pedagogy and Andragogy? *International Journal of Progressive Education*, 15(6), 151–169. <https://doi.org/10.29329/ijpe.2019.215.10>
- Van Geel, M., Keuning, T., & Safar, I. (2022). How teachers develop skills for implementing differentiated instruction: Helpful and hindering factors. *Teaching and Teacher Education: Leadership and Professional Development*, 1(July), 1–11. <https://doi.org/10.1016/j.tatelp.2022.100007>
- Vemde, L. Van, Donker, M. H., & Mainhard, T. (2022). Teachers , loosen up ! How teachers can trigger interpersonally cooperative behavior in students at risk of academic failure. *Learning and Instruction*, 82, 1–14. <https://doi.org/10.1016/j.learninstruc.2022.101687>
- Vreeze-Westgeest, M. G. J. de, & Vogelaar, B. (2022). Cognitive Training in the Domain of Mathematics for Potentially Gifted Children in Primary School. *Education Sciences*, 12(2), 1–13. <https://doi.org/10.3390/educsci12020127>
- Zhou, M. (2014). Teachers' and Parents' Perceptions of Parental Involvement on Inner City Children's Academic Success. *Georgia Educational Researcher*, 11(1), 1–17. <https://doi.org/10.20429/ger.2014.110103>