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SOSIAL HUMANIORA KOMUNIKASI

AN ANALYSIS OF METACOGNITIVE LEARNING STRATEGIES IN E-LEARNING

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Abstract: *This research is aimed to investigate how students' metacognitive learning strategies respond to E-learning or online learning in the covid-19 pandemic era. This study was conducted to 36 English Language Education Department students, the 6th semester of TBI-1 State Islamic University of North Sumatera (UIN SU). This study used a qualitative approach with questionnaire and interview method. Due to the pandemic times, both the questionnaires (consisted of ten open-ended questions) and interview were sent to students via E-Learning platform (LMS). The result showed that the students used most of all various types of metacognitive strategies in E-learning as strategies proposed by O' Malley and Chamot (1990), namely; overviewing the lesson before learning process, paying attention during learning process/centering, and doing self-monitor and self-evaluation after online learning. There were also modifications in students' learning strategies in responding to E-learning in the times of pandemic. Initially, the students were not really familiar with E-learning method and online learning application, but as time went by, they adjusted their own learning strategies to E-learning method and finally they get used to it.*

Keyword** : **Metacognition; Metacognitive Strategies; E-learning.

Abstrak: Tujuan dari penelitian ini adalah untuk mengetahui strategi belajar metacognitive sebagai respon terhadap perkuliahan E-learning atau online learning selama masa pandemic covid-19. Penelitian ini dilaksanakan terhadap 36 mahasiswa semester 6 jurusan Tadris Bahasa Inggris, Universitas Islam Negeri Sumatera Utara (UIN SU). Penelitian ini menggunakan pendekatan kualitatif dengan metode kuesioner dan interview. Disebabkan masa dalam masa pandemic, maka kuesioner (terdiri dari sepuluh pertanyaan open-ended) dan interview dikirim melalui aplikasi belajar online (LMS). Hasil penelitian ini menunjukkan bahwa mahasiswa menggunakan sebagian besar strategi metakognitif dalam perkuliahan E-learning seperti strategi yang dikemukakan oleh O' Malley and Chamot (1990), diantaranya, membahas materi perkuliahan,

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menyimak pada saat berlangsungnya perkuliahan, dan melakukan evaluasi dan refleksi diri setelah perkuliahan online berlangsung. Terdapat juga penyesuaian dalam strategi belajar mahasiswa dalam menyikapi perkuliahan online di masa pandemi. Awalnya, mahasiswa tidak terlalu terbiasa dengan metode perkuliahan E-Learning, namun seiring waktu, mereka menyesuaikan strategi belajar mereka dengan metode perkuliahan online dan akhirnya mereka mulai terbiasa dengan metode perkuliahan E-learning.

Kata Kunci : metakognitif; strategi metakognitif, E-learning.

Citation :

INTRODUCTION

Since mid-March 2020, our normal routines have been disrupted by the COVID-19 pandemic. It has created numerous effects to almost all aspect in life, include education. Since then, from primary to higher education, most classes have commenced online, and students have had to get acclimatized to a new process of virtual learning. Sitting in front of a computer monitor is not new for students. Over time, as teachers and learners all get used to the online classes.

Nevertheless, adapting a new habit is not always easy. For faculty which doesn't experience any distance learning before, this adaptation is quite challenging. It is equally a new experience for lecturers too. Lecturers must consider diverse ways of making an online course a pleasant experience for students and ensure the learning course content is delivered clearly at the same time. They use interactive videos or slides to explain as simply as possible what they're learning as well as opens discussions to make the learning experience more exciting and intriguing.

Different from face-to-face classroom setting, online classes have imposed a disciplined structure for students. They must adjust their own learning with virtual classroom experience. Several factors come into play, such as managing time to wake up early if they have virtual morning class with live discussions, their comfort level with and access to technology, high-speed internet, the platform being used by their institution etc. In another case, in making full use of the digital medium, lecturers assess students more frequently, which means instructors can track each student's progress and intervene as needed through online platforms.

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In respond to online learning experiences, students need to update their own metacognitive learning strategies. *Chamot(2004)* (in Fauziati, 2015) stated that metacognitive strategies involve thinking about the process of learning, planning for learning, monitoring comprehension or production while it is on progress, and self-evaluation after the activity of learning has been completed.

Metacognitive strategies help students to attend to the decisions that can make the significant difference in their learning performance; before, during and after the learning process. Before learning, a student plans her approach to learning a topic, specifically how she will digest or process the information. She will question; “what I am supposed to learn? “What strategies should I use? How much time do I have?”. During learning, a student will check her comprehension of the topic as she studies with actions such as practice tests. She may pause to monitor her learning and ask herself; “How I am doing?”, “Am I on track with my plan?”, “Do I understand what I am learning?”, “Should I adjust my pace?”.

The last, namely after learning stage, it is time for reflection and evaluation. She monitors her own learning so far by doing a self-reflection; “what did I learn?”, “did I achieve my goals, “could I have done differently?”, “is there anything I still do not understand?”. If the results of her learning are not good enough, she can modify her approach as needed. Similarly, Oxford (1990) divided metacognitive learning strategies into three similar phases, centering the learning; planning the learning; and evaluating the learning. The aim of centering learning is to give a focus to the learner so that the attention could be directed toward certain language activities or skills. Arranging and planning learning help learners to organize learning process, so they may get maximum benefit from their energy and effort. Evaluating learning helps learners to evaluate the problems faced in learning process. Rubin (1987) defines metacognitive strategies as management steps or operations by which learners control and manage their learning or problem-solving process via planning, monitoring, evaluating, and modifying their learning approaches” (p. 23). Vandergrift (2002) emphasizes the essential role of metacognitive strategies. He said that metacognitive strategies are crucial because they oversee, regulate, direct the language learning task, and involve thinking about the learning process (p.559). The importance of metacognitive strategies has been emphasized by O'Malley, J. M., & Chamot, A. U. (1990) by stating, "Students without metacognitive approaches are essentially learners without direction or opportunity to review their progress, accomplishment, and future directions" (p.8).

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This research was conducted to TBI-1 students, the sixth semester of State Islamic University of North Sumatera (UINSU). This study has crucial objective, namely to investigate metacognitive strategies used by TBI-1 the sixth semester students of UINSU in online learning. E-learning application used to gain responses from the participants.

Metacognitive knowledge and Metacognitive strategies

Learning strategy is very personal. One student has her own preferred learning strategies that makes her understand and enjoy the learning. Cohen in Larsen and Krashen (1998) state that appropriate learning strategy will get results in improvement of proficiency and greater self-confidence in many instances. A leaner develops metacognitive knowledge about her own thinking, learning approaches, learning preferences to solve a task in a simpler way, to monitor her learning performance, etc. Zhang & Goh (2006) said, when learners are equipped with this knowledge, they will understand their own thinking and learning process and accordingly, they are more likely to oversee the choice and application of learning strategies, plan how to proceed with a learning task, monitor their own performance on an ongoing basis, find solutions to problems encountered, and evaluate themselves upon task completion. This metacognitive knowledge will help students to strengthen their mental process and make their learning better and more organized.

Brown (in Rahimi & Katal, 2011) said metacognitive knowledge and metacognitive strategies are two distinct components of the term metacognition. Metacognitive knowledge refers to information learners acquire about their learning, while metacognitive strategies are general skills through which learners manage, direct, regulate, and guide their learning. The basic metacognitive strategies include connecting new information to the old one; selecting deliberate thinking strategies; and planning, monitoring and evaluating thinking processes (Oxford, 2002). They help learners regulate and oversee learning activities such as taking conscious control of learning, planning and selecting strategies, monitoring the process of learning, correcting errors, analyzing the effectiveness of learning strategies, and changing learning behaviors and strategies when necessary (Ridley et al., 1992). By understanding their own role in learning, the students will approach their learning goals.

Some previous studies about metacognitive strategies mostly focus on varied research problems, skills and the level of the students. Most studies discuss about metacognitive strategies linked with reading comprehension skill or reading strategy,

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vocabulary and writing skills. The level of students was ranging from junior high school to senior high school and university students and they were conducted in face-to-face classroom interaction (traditional classroom). Meanwhile, considering the importance of language learning strategy particularly in the time of pandemic, it is important to investigate how the students use metacognitive strategy in learning English through online learning. The absence of lecturer physically like in traditional classroom as the one who always give instructions and guide the students triggers students to learn independently and autonomously in processing the information from their lecturers.

E-Learning

Electronic Learning or online learning also called as E-Learning can be defined as the use of computer and Internet technologies to deliver a broad array of solutions to enable learning and improve performance. E-learning involves the use of a computer or electronic device (example: a mobile phone) in some way to provide training, educational or learning material (Stockley, & Derek, 2003). E-learning is increasingly important in this global era with the extensive use of digitization approaches in education. During pandemic covid-19, started on March 2020, many countries in this world have taken preventive steps to tackle the outbreak of corona virus. People are suggested to practice covid-19 protocols, social distancing and avoid crowds to slow the spread of corona virus. Therefore, the use of e-learning especially in learning process is highly required. Students can access the learning material from home, they do not have to go to school or college to minimize individual contact. Thus, electronic driven technologies can be used to facilitate and enhance learning process particularly in times of pandemic. E-learning is having different benefits over traditional learning process, namely:

- E-learning can be either an asynchronous or synchronous activity: Traditionally, e-learning has been asynchronous, which means there is no predetermined time for the learning to take place. Everyone can go at their own pace, and take their time to learn what they need to know, when they need to know it. However, more synchronous e-learning is now being offered through web conferencing and chat options. The great thing about e-learning is it gives you the option to do one, or both.
- E-learning has a global reach: E-learning can simply be placed online and easily accessed by people around the world. There is no need for expensive travel or meetings across multiple time zones.

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- E-learning spans multiple devices/mobile: Online courses can work on computers as well as on mobile devices, such as smartphones and tablets. This means e-learning courses can literally be in the hands of the people who need them, at all times.
- E-learning is just-in-time/needs-based: It is possible to create, publish, and share a course within a few hours. The software is so easy to use that almost anyone can create engaging courses.
- E-learning reduces costs: All of the above-mentioned factors result in a cost savings for organizations that use e-learning courses to replace some of their traditional instructor-led training.

To be able to apply E-learning, an instructor is expected to be able to understand several competencies to produce a good quality of E-learning course. The quality of an e-learning course is enhanced by:

- *learner-centered content*: E-learning curricula should be relevant and specific to learners' needs, roles and responsibilities in professional life. Skills, knowledge and information should be provided to this end.
- *granularity:* E-learning content should be segmented to facilitate assimilation of new knowledge and to allow flexible scheduling of time for learning.
- *engaging content*: Instructional methods and techniques should be used creatively to develop an engaging and motivating learning experience.
- *interactivity:* Frequent learner interaction is needed to sustain attention and promote learning.
- *personalization:* Self-paced courses should be customizable to reflect learners' interests and needs; in instructor-led courses, tutors and facilitators should be able to follow the learners' progress and performance individually.

E-learning can offer effective instructional methods, such as practicing with associated feedback, combining collaboration activities with self-paced study, personalizing learning paths based on learners' needs and using simulation and games. Further, all learners receive the same quality of instruction because there is no dependence on a specific instructor.

RESEARCH METHOD

This study was conducted with qualitative methodology of research. Qualitative research explores attitude, behavior and experiences. In this research, the writer used case study method. Creswell (2003) defines case study as researcher explores

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in depth a program, an event, an activity, a process or one or more individuals. The case study can be either a single or a case bounded by time and place (Creswell, 1998).

This research was conducted virtually to one class of TBI (Tadris Bahasa Inggris) of State Islamic University of North Sumatera (UIN SU), namely TBI-1, sixth semester students. There were totally 36 participants who participated in this study. A set of questionnaires (each consisted of 10 open-ended questions) were distributed online by sending it via E-learning platform (LMS) to students to find out their learning behaviors, experiences and strategies before, during and after online learning. Especially for questions number 2, 3, 4, 5, 6, 7 and 10, students were allowed to choose one or more than one response that might be quite relevant to their learning experiences. From the questionnaire, the data were collected to give information regarding the students' metacognitive learning strategies in E-learning. The similar ideas or responses were grouped and marked. Besides, the writer also used interview to collect in-depth supporting data from the questionnaires. Ten students as representatives of their classmates were chatted via WhatsApp chat and voice note to validate their prior responses. Here are the questions:

Questionnaire: Metacognitive Learning Strategies in E-Learning:

1. What do you know about online learning especially in the time of pandemic COVID-19?
2. What do you prepare **before** online classroom?
3. What do you do **during** online learning?
4. Do you do an evaluation/ a reflection toward your learning **after** your online classroom ended?
5. How do you manage your time to do your online assignment?
6. How does online learning change the way you learn?
7. What skills do you learn from online learning?
8. Does the use of E-learning applications helps you to understand your subject better?
9. In your opinion, what are the disadvantages of online learning?
10. Do you miss actual face-to-face classroom? If this pandemic end, what will you improve towards your learning strategy?

RESEARCH FINDINGS AND DISCUSSIONS

To investigate the students' metacognitive learning strategies in e-learning or online learning, the writer focuses only calculating those questions which are

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relevant to the problem of study such as questions number 2, 3, 4, 5, 6, 7 and 10. To find out the percentage of the students" metacognitive learning strategy in E-learning, the researcher used the following formula:

$$P = \frac{f}{\Sigma f} \times 100\%$$

P: Percentage of responses answer
f: Frequency of responses for each category for a statement
Σf : Number of responses in the whole for a statement

The questionnaire was started with the introductory question about online learning to check their understanding about online learning. Most of them responded well, they elaborated e-learning as a learning activity that is implemented during covid-19 and it is internet-based learning, there is no face-to-face actual interaction between teacher and student like in traditional classroom in order to combat the spread of covid-19, all learning is carried out at students' respective homes. It uses online applications such as Zoom, Google meet, WhatsApp group, E-learning, etc.

For second question, the writer was initiating to ask the student's metacognitive learning strategies before online learning. The result showed that 36 students did some preparations before online classes was started. They prepared all the things that supports to the success of their learning such as fourteen students would prepare stationeries; books, pens, notebooks (38.88%), six students responded she/ he would dress neatly before online meeting (16.66%), seventeen students would read the materials first (47.22 %) most importantly, due to online learning, they must check the availability of their internet connections or find the right place to find better internet connections because some of them live in rural areas (77.77%). In addition to that, some students are managed to browse Google or YouTube to link with the materials that would be discussed.

During online learning, if their lecturerer were using face-to face virtual platform, such as Zoom or Google Meet, twenty two students would listen and watch it attentively (61.11%) while eight students also taking notes the important things from lecturer's explanation or presentation (22.22%). Three students responded irrelevant answers and those were not counted. For fourth question, the researcher questioned them whether they did an evaluation or a reflection after they finished with online learning, the responses were varied. There were 21 students (58.33%) responded yes, they did it regularly for better understanding. Meanwhile, 15 students (41.66%) wrote that they did it sometimes.

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The fifth question, the writer wanted to know about how they manage their time to do their online assignment, seventeen students (47.22%) wrote they would design task-to-do list priorities, it means they would prioritize which assignment needed to be submitted soon rather than the later assignment. Fourteen students (38.88%) would do their assignments after they finished with their house work, usually they do their assignments at night to avoid some noise. Meanwhile, there were five students (13.88%) would do the task immediately, right after their lecturers instructed them. The next question, question number 6, the question was, “how does online learning change the way you learn?” It is crucial question dedicated to the students, by reading their answers, the writer gains some information what kind of changes they transformed their learning into. Here is one of their responses, “online learning changed my learning where initially learning was held face-to-face in class and there was a lecturer who explained it directly in front of the class, but since online learning, it has changed. It is more difficult for me to understand a material or topic”. Some students, there were 14 students (38.88%) argued that during online learning, they must be more active, independent and responsible to their own learning due to the absence of lecturers physically to guide them all the time like in traditional classroom. They must initiate self-study. Students were encouraged to use another online source to enlighten them. Meanwhile, eleven students (30.55%) thought that learning process has shifted from an actual classroom to online platform in which mainly needs laptop, smartphone, and good internet connection. Three students (8.33%) wrote that they enjoyed e-learning because it was more flexible and could be accessed from home or another places. In contrast, there were nine students (25%) who wrote that this e-learning did not make any significant effect to their own learning. It made them bored and lazy due to lack of motivation in learning. The rest, there were two students (5.55%) who answered that online learning requires time management. Surprisingly, there was one student (2.77%) who benefitted from this online learning, it boosted her confidence in speaking skills compared to offline learning.

Question number 7 and 8 were specifically asked to find out what skills the students learn during online learning and how it affected them. The answers were not parallel one another. The students shared honestly about their experiences during online learning. There were 20 students (55.55%) reacted that online learning helped them to be more creative to create and edit their digital videos for accomplishing their assignments, access various educational websites which they did not know many before. Besides, they also get familiarized with various learning

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applications. They tended to be more technology-friendly. Other soft skills also improve. There were two students (5.55%) feels that they are more enthusiastic, more attentive, more active in responding to the lecturer's question. Related to their language skills, there were nine students (25%) students suggested that their listening skills have improved. Writing and reading skills enhanced as well. Furthermore, there were six students (16.66%) concluded that their communications skills also improved during online learning. Other skills like time-management skills and patience also made a progress as nine students (25%) felt the impact for time-management skills. There were two students (5.55%) responded that their level of patience developed. Another interesting response was found, one student (2.77%) wrote that her problem-solving skills were also raised.

To know students' experiences about online learning, the researcher also asked students' opinion about disadvantages of online learning (question number 9). The ideas of the answer are interrelated one another, there were twenty-three students explained sometimes they experienced incomplete understanding of the learning materials due to lack of internet connection or sudden lost connection (63.88%). A few of them also wrote that their lecturers gave assignments without explanation. Minimum teacher-student interactions in online learning were experienced by nineteen students (52.77%). There were five students (13.88%) responded they felt bored, lazy and unmotivated in online learning because of lacking supervision in learning. Three students (8.33%) commented sometimes they were distracted by notifications from their social media during online learning.

The last question (question number 10) guides students into a self-reflection towards their own learning so far during pandemic. The researcher asked them whether they miss actual face-to-face classroom and what will they improve toward their learning strategies if this pandemic ends. Honestly writing, there were thirty-six students (100%) responded that they really missed the actual classroom. In fact, based on the institution's regulation, the sixth semester students are still having online classed this semester. When the pandemic ends, they wish that they will improve their social skill and the way they study. Increasing knowledge and learning strategies are the future learning goals; twenty students (55.55%) committed to be more active, more focused (22.22%), reading more (5.55%), integrating technology (8.33%), developing communication skills (5.55%), applying better time-management in learning (13.88%) and the rest was enhancing teacher-student interaction and student-student interaction (13.88%) in actual classroom or offline learning. They believe that offline learning is better to promote social interactions in

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learning process. They can discuss with friends and ask lecturers about the learning materials or assignments without any barriers like in e-learning.

The research finding shows that the students use the most of all various types of metacognitive strategies, namely; overviewing the lesson before learning/ planning, paying attention during learning process/centering, and doing self-monitoring and self-evaluating after the online learning. This finding is also relevant to Anderson (2002) who stated, “the use of metacognitive strategies activates one’s thinking and leads to improved performance in learning in general” (p. 3). It also raises students’ awareness in a triadic process that involves metalinguistic, learning, and self-awareness (Penuela, 2018).

CONCLUSION

Metacognitive learning strategies have been employed by students in traditional classroom, especially by advanced learners. They are familiar with organizing, arranging, planning, monitoring and evaluating their learning. In the times of covid-19 pandemic, student must modify their learning strategies. Before, lecturers are available physically as the source of information, give instructions and guide students in conventional classroom. However, in e-learning, students get used to autonomous learning. As basic concept of e-learning, it presupposes that electronic-driven -technologies can be used to facilitate and enhance learning process as well. Students become more responsible to their learning. They prepare things they need for participating to e-learning such internet connections, pens, notebooks and their physical fitness. E-learning constraints such as poor internet connection, lack of internet quota leads to minimum face-to-face virtual interaction between lecturers and students have been experienced by most students and lecturers in higher education. As the result, lecturers may not explain or elaborate the subject fully, even though they have prepared a lot for their online teaching presentation. Yet, students must find additional information or online sources to help them understand the learning materials. Some of them browse websites, blogs, read e-book or watch YouTube video to resolve their assignments. Screen time is definitely increasing.

Apart from its constraints, e-learning results significant effect to students. They value their learning strategies. They pay attention, focus on listening, read more, discover language learning, organize, set goals and objectives, identify the purpose of language task, plan for doing a language task, seek practice opportunities in doing

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assignments, do self-monitoring, and self-evaluating to their learning. Hence, their level of self-awareness toward their metacognitive strategies improves.

On the other hand, from the interviews that were held by the researcher, it was concluded that the students learn better about reading, writing and listening and communication skills that may have been taken for granted before in traditional classroom. They read blogs, articles, e-books and summarize by their own. They focus on listening their lecturers while taking notes important points from online classroom. They express their ideas or opinion better since online learning encourages them to speak more for an active classroom engagement. Indeed, their communication skills improve. Their time-management skills and creativity develop as well. Slowly, they are familiar with technology. They become technology-friendly users. However, from their answers, the writer concludes that the students have learned a lot from this pandemic situation to be more disciplined and responsible to their own learning.

Students are suggested to use metacognitive knowledge wisely to ensure that the learning objectives are met, in the times of pandemic or in today “new” normal situation.

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