



How to Prepare Student's Self-managed Learning in Gregorc's Learning Style

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Abstract. The purpose of this study was to find out how to prepare for their independent study according to the learning style of Gregorc's theory. There are 4 types of Gregorc's learning styles, namely, Concrete Sequential, Abstract Sequential, Concrete Random, and Abstract Random. Self-managed learning (SML) refers to a particular learning approach from elements of several other methods including self-development, learning, and independent action. SML is useful for students to improve their learning discipline and manage their learning. This study uses a qualitative descriptive method by analyzing data on the results of student Gregorc learning styles and the application of EMS in learning during the pandemic. Data was collected through interviews and learning style questionnaires. In this study, it is known that by knowing learning styles, students can manage their learning methods to be applied in daily activities. The benefits of independent learning are that students can learn more with an active attitude, students have greater motivation to learn, increase self-confidence in learning, and students can develop independent study skills.

Keywords: Gregorc's Learning Style · Self-managed Learning

1 Introduction

Learning can be interpreted as a process of change to develop new ways based on old ways [1]. Everyone interprets learning as a process that can produce change. Learning is a process of transferring knowledge from teachers to students. Learning provides an overview of the process components in the curriculum that have been implemented [2]. Learning carried out by teachers to students can occur in the classroom, outside the classroom, and in the laboratory depending on the needs and learning objectives. Effective learning can support the output of learning. In the era of the industrial revolution 4.0 the use of technology is one of the things that the world of education looks at to be able to improve the quality of education and learning in order to increase learning motivation [3].

In learning activities, each student brings characteristics in implementing their own way of learning. One of these characteristics is the student's learning style. Learning styles do not show how to learn, but students have a tendency to learn based on the

results of the student learning style questionnaire. In the world of education, learning styles are often seen in 3 types, namely visual, audio, and kinesthetic. Learning styles are measured based on certain instruments that have been tested for validity and reliability.

By knowing student learning styles, it can be applied to apply learning models that are in accordance with learning style tendencies to maximize each student's way of learning [4]. Every lecturer in doing learning, always determines how to do the learning. The tendency of this learning style will help lecturers to determine the appropriate learning model in teaching and learning activities. Dr. Anthony Gregorc suggests that there are 4 concepts of student learning style tendencies, namely concrete-sequential, abstract-sequential, concrete-random, and abstract-random. Each learning style has the characteristics of student's cognitive ways of thinking.

In the current pandemic, where teaching and learning activities are carried out through online learning, most students use their own learning methods due to limited meetings with lecturers. This way of learning helps students understand how to learn on their own to help understand a material concept. During this industrial revolution, teachers must be able to encourage student's critical thinking skills, one of which is the use of technology [5].

Self-managed is usually used in the workplace with the aim of increasing productivity, innovation, and commitment from the workforce [6]. However, for some time, the application of self-managed has been widespread in the world of education, especially in terms of implementing learning in universities. Self-managed learning is an ideal learning. Self-managed learning requires students to be responsible for their own learning [7]. Self-managed learning is one of the characteristics of higher education for students to carry out their learning responsibilities [8, 9]. The definition of self-managed learning is very simple, but this relates to how a student can be responsible for decisions to manage his learning to achieve maximum results.

In learning activities, the application of self-managed learning is needed to foster a sense of responsibility from students in learning [10, 11]. During a pandemic like now, learning is done online using technology that is integrated with the internet, [12] more demanding students to study independently and manage their learning due to the limitations of face-to-face with lecturers. Self-managed learning in online learning in addition to requiring students to learn to be responsible for their learning also requires students to better recognize their own abilities and ways of learning. Understanding how to learn on your own is the best way to maximize your potential in your own way. A student will be more interested and motivated to learn if the teacher frees students to learn in their own way [13, 14].

2 Method

This study uses a qualitative method with a descriptive study. This descriptive study is used to describe the data that has been obtained by the researcher. In addition, this descriptive study is in accordance with the nature of the research, which is to analyze student's independent learning based on their learning styles. Gregorc's model student learning style data was collected through a learning style questionnaire. Data on student learning styles become a reference for researchers to analyze how these learning styles affect student's self-managed learning.

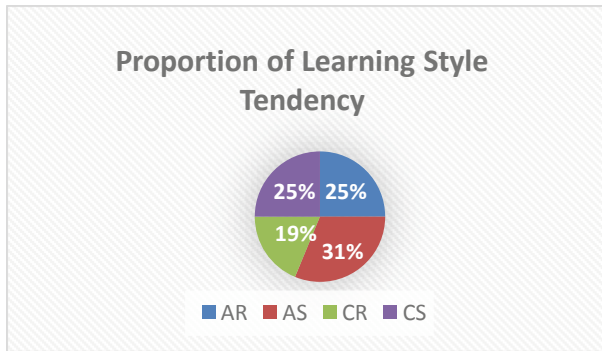


Fig. 1. Student Learning Style Trends

Self-managed learning data were collected through interviews with open-ended questions regarding how they organized their time for independent study. Next, the researcher analyzed how the student's self-managed learning habits were based on their learning styles. Then, the researcher gives suggestions what if a student has a tendency to a certain learning style in preparing student's self-managed learning.

3 Result and Discussion

3.1 Result

This study aims to determine student learning styles based on Gregorc's theory of learning styles. The following are the results of the 16 student learning style questionnaires.

Information:

AR: Abstract Random

AS: Abstract Sequential

CR: Concrete Random.

CS: Concrete Sequential.

Based on Fig. 1, the proportion of student's learning style tendencies is evenly distributed, the proportion of students' learning style tendencies is equal to 25% for concrete sequential and abstract random. Meanwhile, the tendency of concrete random and abstract sequential learning styles shows a percentage of 19 and 31%, respectively.

After knowing how student's learning styles tend to be, we will analyze how students manage their own way of learning through the concept of self-managed learning. From the results of the study, it can be summarized how students learn independently based on learning styles shown as follows (Table 1).

Based on the results of the research found, which was combined with student self-managed learning, differences were found in each type of learning style. This different type of learning makes each student's way of learning different. Therefore, we suggest

Table 1. How to learn independently based on learning styles

| No | Learning Style | Student self-managed learning |
|----|--------------------------|--|
| 1 | Abstract Random (AR) | <ul style="list-style-type: none"> • Their time to learn irregular, but they lead to study hard anytime when having a good mood • Feel comfortable with learning how others thought to be ineffective, especially in terms of time • With self-managed learning, people with learning style abstract random tendency motivated to gain knowledge outside the classroom widely. • During the pandemic, they prefer to spend time learning with flexible |
| 2 | Abstract Sequential (AS) | <ul style="list-style-type: none"> • Perform teaching with lessons systemized such as copying, marking the notes with color. • Over the management have a regular time. They try to be consistent with the study hours they set. • They tend to reanalysis explanation from the lecturer by finding other relevant sources. • Because the love of learning created by systematic, they are like an explanation from the lecturer, ask if less familiar, and tried to find other learning resources. |
| 3 | Concrete Random (CR) | <ul style="list-style-type: none"> • They do not rely on lessons in the classroom, but happy to explore knowledge beyond the classroom with learning resources are provide as you tube • They realize knowledge is not fixated on the lessons in the classroom, but it can be done anywhere that could make them uncomfortable • The ability of imagination either because they prefer to analyze the received knowledge based on experience • Scheduling in the regular study less favored, even they prefer to study spontaneously |
| 4 | Concrete Sequential (CS) | <ul style="list-style-type: none"> • They learn grooming, preparing to study without other disturbing thoughts because it would lead to the concentration split • Requires a high level of focus in doing the same • Duration tend order to accomplish the tasks of the lecture • In determining the source of learning, they really will find the learning resources that are relevant and reliable to support the activity of learning. |

how to prepare students for independent study based on the tendency of student’s learning styles.

- Develop learning time. Although each learning style has differences in the preparation of the study schedule, it is necessary to focus on consistency in the study schedule determined by the student. By being consistent with their independent study schedule, students have succeeded in managing their study time.

- Finding the joy in learning. The results of the questionnaire on learning styles and self-managed learning show how they learn according to their preferences. We suggest that every student turn their passion into an asset and an opportunity to create their own way of learning.
- Finding learning resources that match their interests. Not all learners are interested in one learning resource. This is very reasonable considering the learning tendencies of each student are also different. Therefore, in self-managed learning, students are free to determine learning resources according to their interests, which can help them understand information better.
- Build self-motivation. Each student can be more self-motivated in learning in self-managed learning. Focus on what goals you want to achieve so that this motivation becomes a reinforcement in conducting independent learning.
- Define the learning model. This is very important in the concept of self-managed learning. Each student has a way of learning with various models that they are interested in. In the survey we did, for example, we found a learning model for students, namely by taking notes from the lecturer's explanations during formal learning, and studying again when they did learning outside of formal learning by finding sources and marking the things they learned. Consider important. However, for some other students, they can find other models that match the characteristics and personalities of students.

Basically, learning styles are not only Gregorc's model, and this learning style is not something that someone definitely reflects. Therefore, in measuring learning styles, the results obtained indicate a person's tendency to organize their learning. In this study, respondents with a tendency to certain learning styles also showed responses that were not always different, but did not show significant similarities.

3.2 Discussion

Based on the results of the study, namely by knowing the tendency of student learning styles, it can be seen that learning styles affect a person in taking action, analyzing, and solving problems. Each learning style has characteristics so that these characteristics affect the differences in these actions.

The tendency of abstract random learning style tends to receive lessons randomly and is not interested in abstract reasoning. They tend to have a hard time doing the same thing because they find it boring. The type of child with a tendency to learn abstract random has more problems with the learning system in the classroom or school because they are not the obedient type.

Students with a tendency to Abstract Sequential learning style have high and critical reasoning abilities because they have strong imagination power. They are able to capture information abstractly and are more reserved because they are busy doing analysis. They prefer lessons that are presented systematically.

Students with a tendency to learn concrete random have a tendency to dislike lessons that are presented sequentially and systematically. The way of learning is irregular and not familiar with the lessons in class. According to them, every experience is a valuable lesson.

Students with a tendency of concrete sequential learning style have difficulty analyzing abstract lessons. They need a strong imagination to analyze abstract information. They prefer lessons that are presented verbally and can be seen. The ability of children with this learning tendency is that they like neatness so it will be difficult if they receive information that comes simultaneously.

Learning style in addition to influencing how a person's nature in learning also affects a person's personality [15]. In addition to influencing a person's personality, learning styles can increase effectiveness in learning [16–18]. Learning styles that affect the nature and how the characteristics of student learning, there is the term learner model which is a description of student characteristics that are relevant to their personality [19]. A person's personality is not fully seen from the student's learning style, but based on the tendency of learning style, which is then seen how the student's personality,

In the last few decades, learning styles have become a trend to find out how students learn. Each student has different characteristics of learning styles so they should have different ways of teaching. In addition, the way of teaching in the classroom will be inappropriate for students with other learning styles [3]. Awareness to know student's learning styles in formal education is important to show the high changes in education [20].

The current challenge in the era of the industrial revolution 4.0, students as generation Z are able to find wider information than the previous generation, especially on interdisciplinary knowledge [20]. Since generation Z is a generation that was born during the technology boom, special learning or methods are needed to increase learning opportunities [21, 22]. Students learning opportunities become higher with appropriate learning methods.

In self-managed learning, the main focus of students is how much learning is received by students and the learning time they have [6]. The time that students have in formal education is a meeting held at a college that is scheduled and definite. Thus, students can estimate study time at formal institutions and student independent study time outside formal education. The problem that is currently happening is the COVID-19 pandemic which causes student learning times to change.

Online learning in formal education makes students reorganize their study time. In face-to-face learning, the lecturer is responsible for student learning time and ensures that students can learn with the material that has been determined. However, during a pandemic like today, where students have to study from home, the responsibility for time and how far in understanding the material is fully the responsibility of the student. Therefore, it is very important to apply self-managed learning to control the time and way students study at home, especially during a pandemic like today.

Outside of learning during a pandemic, quoted from several sources, self-managed learning has the following benefits.

- Students will learn more than students who have to wait for information to come [23]
- Students will demonstrate a greater awareness of the responsibility to learn [24]
- Increase confidence in a new situation [25]
- Students will see a new challenge as well as the issues become particularly enjoyed learning [26]

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