

# Analysis of Learners Characteristics and Learning Process Preferences during Online Learning

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## ABSTRACT

This research aims to find out the preferences of the learning process conducted by students while online learning is underway. These preferences are seen from the platform used, the support device used to the learning style. The research method used using the survey method is done quantitatively by presenting the chart along with its description. Respondents from this study were students who attended the equivalent of high school, vocational school, MA and MAK with a total of 28 respondents. The results of the study are a variety of preferences from the student's perception of the learning process he experienced. Knowledge of learning preferences has a profound impact on improving learning outcomes. These results can be a reference for teachers in developing online learning, so hopefully through this research can help teachers in knowing the learning characteristics of students in particular.

**Keywords:** learning process, learning characteristics, online learning

## 1. INTRODUCTION

Covid-19 pandemic to date total (September 18, 2020) has been positively exposed to 236,519 people with 170,774 people declared cured and 9,336 people dead [1]. This number will continue to grow until an unpredictable time. With this massive spread, there has been a change in various sectors, especially in education. The Covid-19 pandemic forced the education world to transform. This is because for green and yellow zone areas can already carry out face-to-face learning with the applicable terms and conditions. As for areas within the orange and red zones, it is mandatory to carry out non-face-to-face learning [2]. Covid-19 virus pandemic causes all students at various levels of school to be encouraged to study at home. Social restriction and work policy at home or Work From Home (WFH) affects learning activities [3]. Learning activities focused on being massively conducted online [4]. This leads to a wide variety of learning patterns, especially related to the variety of learning process preferences experienced by students.

It closely relates this preference to the characteristics of learning to the digital learning resources used. Variations in the learning characteristics of learners, which are an important part of the learning model. This supports the design and development of personalized/adaptive learning materials, determines the criteria to be used by the recommendation system to suggest materials under some learned characteristics, helps students to semantically search for learning materials, improves the reuse of knowledge for humans and systems [5]. If the learner can

see the characteristics, then the learning process will be more effective [6]. So indirectly, students can have strong confidence, creativity, curiosity, self-discipline, and so on [7], [8].

In addition, students also prefer the use of diverse digital learning resources. Today, digital learning resources are often available through web-based repositories that can be searched with standard metadata. Teachers, students, and learning designers can now access a dedicated repository, many containing thousands of objects, interconnected with metadata and interoperability standards [9]. They can decide for themselves the type and combination of learning resources, activities that make it possible for students to interact with the learning resources they always carry (smartphones) [10]. Surely with this kind of freedom affects the resulting learning impact [11]. This is in line with the construction assumptions of individual learning experiences based on Smith and Ragan's opinions (1) knowledge is built from experience, (2) learning results from personal interpretation of knowledge and (3) learning is an active process in which meaning is developed based on experience [12].

Here it hints that a meaningful learning process will cause the attainment of the quality of learning. Creativity, critical analysis, and skilled performance are closely related to create a more workable and coherent knowledge structure [13]. So the success of the learning process should pay attention to the subjects who learn with the variety of characteristics they have [14], [15].

Many studies related to learning characteristics have been done before, especially before the COVID-19 pandemic. In this article will only reveal some related research. Based on research from Sari [16] showed a difference in learning style characteristics of each A-grade student with visual tendencies of 53 percent, class B with auditoria tendencies of 35 percent, C grade with visual tendencies of 29 percent and overall students dominated by visual learning style tendencies 33 percent.

Other studies using the k-means method also revealed that students have preference relationships, such as having study attributes, knowledge levels, gender, interest interests and preferences. So there are differences in the characteristic models of students in learning [17]. Previously disclosed research was conducted before the corona virus struck the country. After the pandemic, the world including Indonesia changed, especially in terms of education and learning. Therefore, there is a peculiarity of students in implementing online learning.

Therefore, the author is interested in researching the preference of the learning process experienced by students. This is because during online learning, students use a laptop or smartphone as their learning source. From the platform used to the learning style have unique characteristics of each individual. This is important so that teachers can know the various characteristics of learning during the online learning process, basically. In addition, implementing online learning during pandemics is also more flexible than ever and prioritizes student centered learning in its management.

**2. METHODS**

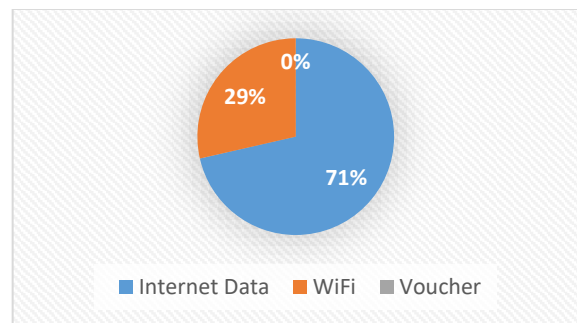
This research uses a quantitative approach by applying the survey method depicted through the graph, and then each chart is described. This method is used to get data that occurs in the past or present about beliefs, opinions, characteristics, and so on and is generalized [18]. The measurement scale used in this study is a nominal scale. Data collection techniques through the spread of questionnaires via google form. We have tested each question with internal validity, which means using the relevance of the theory that has been adapted to everyday phenomena that have occurred. Thus producing several indicators or aspects that will be the focus of data, namely preferences, processes and styles of online learning.

This research involved students at the high school level and just 28 respondents spread across several regions inside and outside Java. The steps in conducting the research are: (1) looking for data and facts of online learning phenomena, (2) collecting such data and facts, (3) drawing conclusions of the phenomenon that occur, (4) making questionnaires, (5) disseminating questionnaires to students, (6) conducting data processing and (7) drawing conclusions. The results of the study are various variants of the learning process experienced by students unique and illustrated in the form of charts accompanied by descriptions. From research can be a reference material for teachers in designing online learning patterns during the

COVID-19 pandemic, so that the achievability of learning goals becomes more maximal.

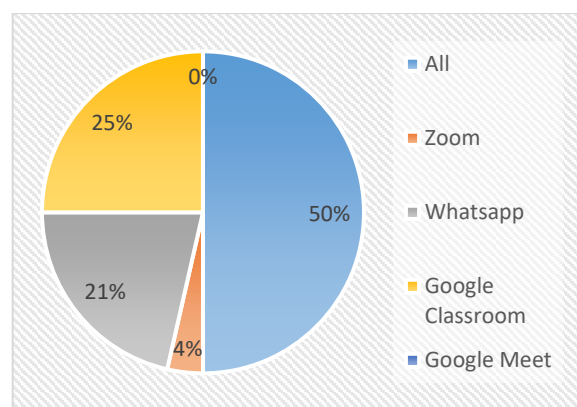
**3. RESULT**

In implementing characteristic analysis survey using a variety of questions that are easy-to-understand respondents and adapted to the situation of conditions that are carrying out online learning. We take variants of various learning process preferences based on the questions expressed and tend not to lead to the substance of research, but by using everyday language. On questions related to the use of internet access, we get survey data through the following graph (Figure 1).



**Figure 1 Internet Access Intermediary**

Based on the data in the chart, this shows that respondents who use internet data by 71 percent. For WiFi users 29 percent. While no one uses credit vouchers. This shows that not all students can carry out free online learning, because of the limitations of internet data. Therefore, there needs to be consideration on this, especially regarding the design of online learning to apply to students without being hampered by constraints such as the above data. On questions related to platforms often used in online learning, we get survey data as follows (Figure 2).



**Figure 2 Media that Students Often Use**

Based on the data in the graph, this shows that 50 percent of respondents use all platforms frequently, 4 percent of respondents only use Zoom, 21 percent of respondents are only likely to use WhatsApp, 25 percent are only likely to use Google Classroom and no one only uses

Google Meet. This data shows that there are learning process preferences visible from media that are often used during online learning. Through this data, teachers can find out what media students have been using during online learning. On the question of preference trends in using learning platforms, we get data through the following graph (Figure 3).

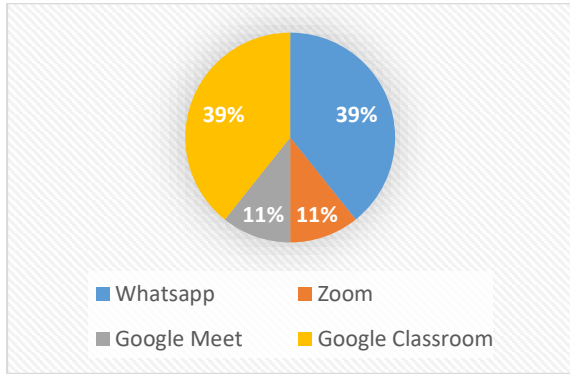


Figure 3 Media Favored by Students

Based on data seen in the graph shows that 39 percent of students chose WhatsApp, 11 percent chose Zoom, 11 percent chose Google Meet, and 39 percent chose Google Classroom. This data shows that students have different tendencies in choosing the platform they like. This can be a map for teachers in designing media that will be used in online learning. In question, regarding devices commonly used by students, exposure to graph data is as follows (Figure 4).

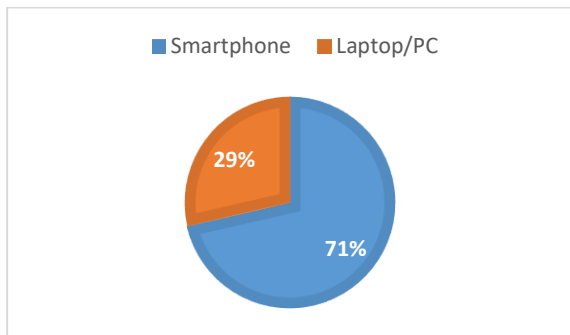


Figure 4 Devices Used by Students

Based on exposure to the data illustrated through the graph shows that 71 percent use smartphones and 29 percent use Laptops/PCs. This data shows the different tendencies of devices used in online logging. From this data teachers can see the tendency of students in using hardware to support online learning, so that teachers can design material delivery that fits that trend. On questions related to the position that is done during online learning, we illustrate the results in the following graph (Figure 5).

Based on the graphs that have been described shows that various variations in students' position preferences in online learning. The preference variant stated that 93 percent of respondents stated learning while sitting, 7

percent stated learning while sleeping, and no one stated learning while standing. This shows that students are unique individuals with unique characteristics. Teachers should be able to accommodate these differences. On questions related to the tendency to accept material information submitted by teachers, we get data through the following graph (Figure 6).

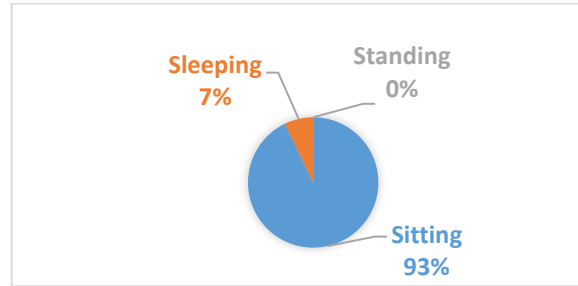


Figure 5 Students' Positions When Studying Online

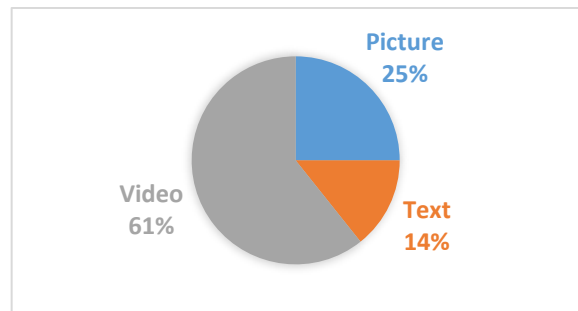


Figure 6 Tendencies of Learning Comprehension

Based on the data illustrated through the chart, there are several tendencies of learning styles when learning online. While 61 percent of respondents are more likely to understand online learning materials when accompanied by video, 25 percent will understand online learning materials when accompanied by images, and 14 percent will understand the material when using text only. This data can be an overview for teachers, especially in developing online learning content to make it more interesting.

#### 4. DISCUSSION

Humans are individuals who have a variety of unique differences. Students are human beings who have unique personal differences. In online learning, these preferences can be a distinctive feature for students. Thus, with the diversity of peculiarities, analysis is necessary to overcome learning problems. Characteristics are basic tendencies, habits, and so on. In another article we explain it that in human relationships, characteristics also include similarity, status, and reciprocity. Individuals form closer relationships with other individuals who share their values and attitudes[19]

In the point of view of learning characteristics are very defined by the characteristics that students have in learning. So students have different weaknesses. This is because the specific stimuli and processes involved in studying each of

these tasks are very different and can be divided into basic characteristics or show some fundamental differences [20]. The characteristics of learning have broad meaning. Starting from psychology, geography, demographics, economics, technology and so on. But the content of this article will only explain some characteristics of learning based on previously presented research data based on an online learning perspective.

Indonesia is a country with a wide geographical diversity. Economically, the breadth of the region has an advantage because the wealth of the property is also abundant and many strategic areas [21], [22]. But more when talking about the learning process, especially online. We can see this as a variety of common problems ranging from long distances from the center of the crowd, steep winding roads and so on [23], [24]. So it becomes a challenge in maximizing the learning potential under the mandate of the law.

In implementing the 2013 curriculum prior to covid-19, not all teachers experienced the ease of teaching students [25]. This is because of the difficulty of access and the limited information provided by the government. In addition, centralistic learning causes the impact of influence in the learning process of students. Not the entire region could implement the 2013 curriculum. Therefore, because of these limitations, learning accessibility is sluggish.

After covid-19, this became an additional problem in the world of education. Like we do not give a newborn child information that corresponds to the portion. We state this in the Ministry of Education's policy of optimizing online learning [2]. Because of these policies, both students and teachers are getting to know the various platforms that can be used in. Each platform will provide publicly accessible and free facilities. Several online learning platforms accessible to students and teachers to improve learning resources include Google Indonesia, Sekolahmu, Kelas Pintar, Zenius, Quipper, Microsoft and so on [26].

Using these platforms may make it easier for students whose districts have good access or networking, but it will be a problem if vice versa. Based on the conditions of the regions found, many areas are difficult to access the internet or electricity, there are even some areas are late in access [27]. This is evidence that the online learning process has problems, especially related to the condition of the region in Indonesia. Teachers are key to learning success experienced by students [28], [29]. So by knowing the conditions of diverse regions, teachers need to implement learning designs that will later facilitate students in learning [30]. So we will plan the learning results, process-oriented and support mechanisms in the learning process [31]

One form of learning characteristics is another is the tendency of learning habits. This is another preference of the learning process experienced by each student. This tendency is part of the comfort of learning. So, this concept needs to be understood by teachers, especially in designing learning in this pandemic period. Conceptually, convenience is the actualization of the results of the management and organizing of learning environments and

social contexts that can then enlarge the capacity of individuals in developing capacity to improve the quality and characteristics of learning and learning [32], [33]. Actually, research related to convenience, especially in the learning process teaching is very limited [34]. So that this research can be a reference for how to manage learning as comfortably as possible.

A peaceful and comfortable school atmosphere is essential for students and teachers to ensure effective teaching and learning. Teachers need to be more innovative in implementing teaching approaches or strategies so that students can gain knowledge effectively [35]. Teachers, students, and the environment are among the deciding factors contributing to the success of the learning process in the classroom. Thus, it is said that the evaluation of all aspects in the learning environment is very important because it provides not only information to measure the performance of students but also information about the competence of teachers in planning positive learning outcomes [36].

As a learner and determinant of the nation's future, students need learning experiences that adapt to their tendencies or habits in learning. Habits are routines of most subconscious routine repetition behaviors. Old habits are tough to break and new habits are difficult to form. That's because the most frequently repeated patterns of behavior are literally etched in the neural pathways. We can describe learning habits as methods and means of obtaining information. It helps students organize their efforts to solve problems, develop skills, gain knowledge and complete various tasks [37]. For example, in this study, students had a learning habit of sitting as much as 71 percent and sleeping as much as 29 percent.

In addition, another tendency is the learning style. Learning style theory implies that how many individuals learn more has to do with whether we direct the educational experience towards learning their particular style [38]. Learning style has been extensively researched in determining a person's professionalism [39]. So in achieving the quality of learning, understanding the learning style is one of the deciding factors.

Differences in students' learning styles can be related to the speed at which students digest and absorb information got [40]. The learning style has three parts, namely visual, auditory and kinetic. A student with a visual learning style then he learns through what they see, auditorially students then he learns through what they hear and students with kinetic style then he learns through motion and touch [41]. By knowing the student's learning style, the teacher can help the student learn to accord to the learning style that the student has so that the student's learning achievement can grow well through learning that suits his learning style [42].

Learning process preferences are part of the potential that students have [43]. So teachers should carry out analysis of learning characteristics before designing a learning program. It is important to provide a sense of comfort for students in learning. The key to success in learning management lies in models and methods. This is as

stated by Akçay & Doymuş [44] that the selection of teaching methods and techniques is essential to ensure increased students' understanding of issues and concepts. If we adapt the model and strategy to these learning tendencies, then the potential of learning from students will increase. So that the potential to nurture the way students think critically, creatively, systematically and the character of each student can be obtained and developed [45].

## 5. CONCLUSION

To maximize the learning process according to students' preferences, the resulting conclusions are as follows (1) the results of the study show there are a variety of learning variations that can be a separate preference for students, (2) in the face of these preferences, then teachers need to design learning by carrying out the analysis of previous characteristics, (3) the key to learning success lies in the method or model used by the teacher. Therefore, the management of learning needs to be done by the teacher by referring to the three rational conclusions. So the hope of this research is that it can be used as a reference material for learning design for teachers, so we can improve the quality of learning experienced by students.

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