

## The Pattern of *Prunus Digi Apps* Usage in The Learning Process at Nusantara 1 Vocatoional High School Tangerang City

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### ABSTRACT

As technology advances in this digital era, the field of education has also made progress in terms of learning media. Therefore, teachers and students need to keep up with the ever-evolving changes in technology. One of the efforts made by SMK Nusantara 1 Tangerang City to utilize technological advancements is by providing teachers and students with the Prunus Digi Apps learning application, which is one of the models of Virtual Learning Environment (VLE). This research aims to determine the acceptance of teachers and students, strengths and weaknesses, and usage patterns by teachers and students towards Prunus Digi Apps in the learning process at SMK Nusantara 1 Tangerang City. The concept used in this research is Computer Mediated Communication (CMC). This research uses a qualitative approach with a case study research method. Data collection techniques are carried out through interviews and observations. The results of the study show that Prunus Digi Apps is well accepted by teachers and students because it facilitates learning activities and all learning activities can be integrated into one application. Prunus Digi Apps has several advantages in the learning process such as making learning easier, more practical, and paperless, in addition to making learning activities more orderly and organized, and can motivate students in learning activities. However, Prunus Digi Apps still has shortcomings, such as servers sometimes experiencing disruptions, lack of time for teachers to upload learning administration, and cheating by students during exams can still occur. The usage pattern used is the "Smart Flow", where this pattern illustrates how the application is used, continues, and effectively utilizes the digital learning environment.

**Keywords:** *Usage Patterns, Learning Media, Prunus Digi Apps, Learning Process, Teacher and Students*

### INTRODUCTION

In line with the advancement of technology in this digital era, the field of education must also progress in terms of instructional media. Therefore, both teachers and students need to keep up with the ever-evolving changes in technology. Many educational applications have been developed to meet the needs of teachers and students and to assist them in their learning.

To address the challenges of digital-based learning alongside technological and informational advancements, it encourages the development of innovative, efficient, and effective educational methods. Therefore, digital-based instructional media is needed to enhance students' learning outcomes (Irwan et al., 2019). Instructional media is crucial for teachers to help them deliver lessons effectively.

One of the efforts of Nusantara 1 Vocational High School in Tangerang City to leverage technological advancements is by providing students and teachers with the *Prunus Digi Apps* learning application, which is one of the models of virtual learning environments (VLE). As O'Loughlin (1992) expressed in an article by Gabriele Piccoli (2001), "Learning consists of the development of abstract models to represent reality."

The *Prunus Digi Apps* application is developed by local developers, namely the information technology team under the same foundation, the Abdi Negara Education Foundation (YPAN). This application features enable teachers to create online classes, invite students to join, provide information about the teaching and learning process, deliver teaching materials to students in the form of files and instructional videos, assign tasks to students, set task submission schedules, and much more.

However, despite the potential for *Prunus Digi Apps* to be an auxiliary tool in learning, its usage is still not optimal at Nusantara 1 Vocational High School in Tangerang. The majority of teachers at Nusantara 1 Vocational High School in Tangerang City still do not fully utilize *Prunus Digi Apps*, as indicated by the percentage data of *Prunus Digi Apps* usage by teachers at Nusantara 1 Vocational High School in Tangerang City in the previous academic year, 2022-2023, thus affecting the teaching and learning activities with students at Nusantara 1 Vocational High School in Tangerang City. The use of information and communication technology (ICT) in education has increased students' interest. However, despite the increasing popularity of ICT, many teachers still face difficulties in incorporating ICT into their teaching process (Nikolopoulou and Gialamas, 2016).

The background of this research focuses on how teachers and students perceive the use of *Prunus Digi Apps* media in the learning process at Nusantara 1 Vocational High School in Tangerang City, what are the strengths and weaknesses of using *Prunus Digi Apps* media in the learning process at Nusantara 1 Vocational High School in Tangerang City, and how the patterns of *Prunus Digi Apps* application usage support the learning process at Nusantara 1 Vocational High School in Tangerang City.

## **LITERATURE REVIEW & THEORY**

### *Technology Usage Pattern*

Usage patterns are consistent habits or tendencies in the way someone uses digital applications. This includes usage time, purpose, types of applications used, and application usage frequency. Rahayu Sulistyorini (2019) defines "digital application usage patterns" as a depiction of how

people access, use, and interact with digital applications in the context of information technology. These patterns include usage routes, activities performed, as well as habits and preferences resulting from interactions with these applications.

Muhammad Husni (2018) emphasizes that digital application usage patterns are the consistent and repetitive ways users utilize digital applications to meet various needs, including informational, entertainment, social interaction, and business needs.

The usage patterns of technology in digital applications reflect how individuals interact with modern technology. Starting with downloads from the app store, users then create personal profiles to access application features. Regular usage of applications such as social media, email, and instant messaging becomes a daily habit that is often checked multiple times a day. Users also tend to customize settings according to their preferences, such as notifications and privacy. Over time, users will begin to explore new features and utilize them more extensively. Regular application updates are also an important part, while social interactions within the application allow users to connect with others. On the other hand, some users may also monitor and control the time spent on applications to maintain a balance in technology usage. There are also decisions to delete or stop using certain applications based on personal considerations. These patterns vary greatly depending on individual needs, preferences, and adaptation to available technology.

#### *New Media*

"New Media" is a term originating from the development of computer and internet technologies. New media stems from the word "new," meaning "fresh," and "media," which refers to the tools used by sources to convey their messages to receivers (Mulyana, 2010:70). New media, also known as "digital media," is a combination of digital and conventional media. The advantage of new media lies in its real-time nature, allowing people to access information and services quickly anytime and anywhere they are connected to computerized devices and the internet network.

Quoted from the book "Online Journalism: A Guide to Managing Online Media" (2020) by Asep Syamsul M. Romli, here is the definition of new media: "New media is a term referring to the demand for access to content (information or data) anytime, anywhere, on any digital device, enabling feedback from interactive users, the emergence of creative participation, the formation of communities around media content, as well as aspects of 'real-time' generation."

According to Asep Syamsul M. Romli's book, "Online Journalism: A Guide to Managing Online Media" (2020), "new media" means "the demand for access to content (information or data) anytime, anywhere, on any digital device, enabling feedback from interactive users, the

emergence of creative participation, the formation of communities around media content, as well as aspects of 'real-time' generation."

Based on its typology, Denis McQuail suggests that new media can be divided into five types, including:

1. Interpersonal communication media
2. Interactive gaming media
3. Information-seeking media
4. Collective participation media
5. Broadcast media substitution.

According to M. Fikri AR's book "Media History: Transformation, Utilization, and Challenges" (2018), these types of new media encompass various media types that can be used for interpersonal communication. Because they are interpersonal, these media types are also considered private or personal, making the process of disseminating and receiving information interactive.

Interactive gaming media consists of virtual reality devices, video games, and computer-based games. The dynamics of interactivity and achieving satisfaction during gaming are the main innovations in this media. With the emergence of interactive gaming media, players can now play games in groups or even beyond individual constraints.

Information-seeking media encompasses all types of media used to search for and obtain information, widely used by the public, ranging from students to employees. Information-seeking media can serve as a tool for learning and acquiring new information if used correctly and appropriately.

Collective participation media is driven by the use of the internet to share information, ideas, thoughts, experiences, and the formation of personal relationships. The evolving and increasing participation of the community over time is the main strength of this media. Essentially, media is a platform for people to express their thoughts and opinions on issues, events, or topics. Broadcast media substitution. The main function of this new media is to facilitate users in receiving, downloading, watching, listening to broadcasts, such as films, music, news broadcasts, and so on. The emergence of this type of new media greatly benefits the public, especially in searching for long-standing information or accessing various entertainment content more easily through digital technology devices such as gadgets and computers.

### *Learning Media*

Media functions as an intermediary or conveyor of messages between the sender, namely the communicator or source, and the receiver, namely the communicant or audience. This is because the plural form of the Latin word "medium," which means "intermediary" or "conveyor."

Media as part of the learning system performs tasks that differ from others. Because media carries learning messages to be conveyed to students, it can only be used individually or in groups. Thus, instructional media can only be used individually or in groups, thus functioning effectively in the process of disseminating information.

Instructional media is an important, or very important, part of the learning system. Serving as a component of problem-solving learning, media, strategies, and methods are interrelated. The type of instructional media chosen and applied will certainly be influenced by both. Instructional media are all forms of materials or tools used in the learning process to help students understand and master the lesson. This media can be physical objects, technology, or a combination of both, designed to more efficiently communicate information and help students understand and retain the ideas taught.

A. S. Hardjasudarma defines instructional media as all tools or intermediaries that can affect human sensory organs to observe, feel, or acquire knowledge and experience. While Djamarah and Zain define instructional media as all objects or devices used by teachers in the teaching-learning process to help teachers and students achieve learning goals.

The book "Instructional Media (From Conventional to Digital Era)" by Dr. Syarifuddin M. Pd and Eka Dewi Utari states that instructional media generally function as aids in the learning process. Tools or anything that can be used to stimulate students' minds, feelings, attention, and abilities or skills, thus encouraging the learning process.

Instructional media plays an important role in producing effective learning processes. By using this media, teachers are asked to be innovative and creative.

Because communication is the essence of the learning process, instructional media can be defined as communication media used in the learning process. In conclusion, instructional media are physical tools used during the learning process, which convey messages with the aim of enabling interaction between teachers and students.

### *Various Types Of Learning Media*

Media is a learning resource that encompasses all sources of data, people, and goods and can be used by students to seek information and assist them in learning. Arsyad (2009:29) divides

instructional media or learning resources based on technological advancements into four groups: (1) media originating from print technology; (2) media originating from audio-visual technology; and (4) media originating from a combination of print and computer technology. Print media is media that produces or delivers material in book form.

Print technology components include text, graphics, photos, and computers. Additionally, it is computer-based technology, meaning it generates and delivers information using microprocessor-based technology (Arsyad, 2009:29). Computer-based learning technologies such as computer-assisted instruction (CAI) and computer-based media such as hypermedia and computer-based multimedia (CBM). Lastly, combined technology is a method of content production and delivery involving the use of various types of media controlled by computers (Arsyad, 2009:30). Purwono (2014: 130) classifies instructional media into two categories:

1. Static audio-visuals are media that display sound and still images such as sound frame films, sound strip films, and sound prints.
2. Moving audio-visuals are media that display elements of sound and moving images such as sound films and video cassettes, television, OHP, and computers (Jannah, 2009).

#### *Benefits of Instructional Media*

As stated by Nana Sudjana and Ahmad Rivai, instructional media will certainly help students learn. Here are some of its benefits:

1. Learning becomes more attention-grabbing for students, increasing their motivation to learn.
2. Learning materials have clearer meanings, allowing students to understand them better and achieve learning goals.
3. Teaching methods become more varied, not solely verbal communication through teacher's words. This prevents students from getting bored, and teachers from getting exhausted during every class session.
4. Students are not only listening to the teacher's explanations but also engaged in additional activities such as observing, performing, demonstrating, showcasing, and so on. This provides students with a greater opportunity to participate in learning activities.

*Functions of Learning Media*

Instructional media primarily serve instructional purposes, meaning they should engage students in mental and tangible activities. Thus, learning can take place. Besides fostering motivation, interest, or actions for students to participate in learning activities, it also aims to convey information in front of a group of students.

From the perspective of the learning process, the role of media is to convey information from the source (teacher or student) to the receiver (learner). While methods are the processes that help students acquire and obtain the necessary information to achieve learning objectives.

According to Daryanto (2016), media function as carriers of information from the teacher to the students. The function of media in the learning process is depicted in the following diagram:

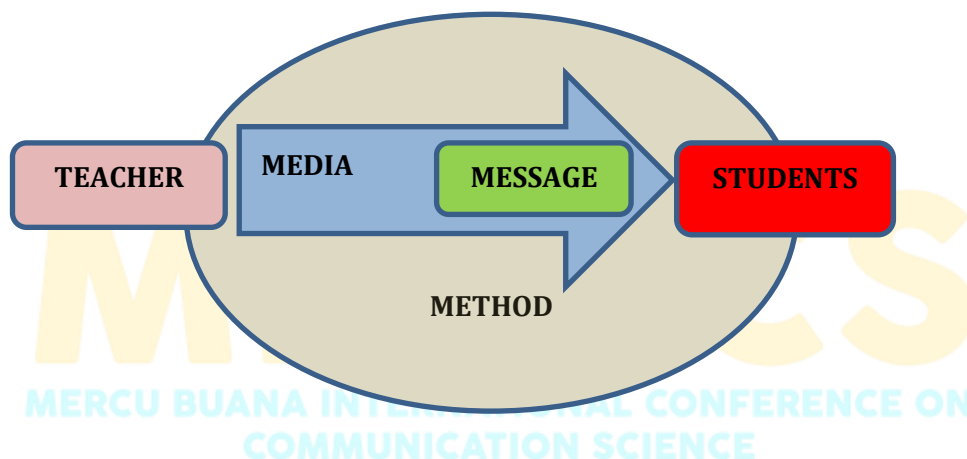


Diagram 1: The Function Of Media Learning Daryanto (2016)

According to S. Gerlach and P. Ely, the role of media in learning can be:

1. Fixative, meaning the media has the ability to capture, store, and then playback an object or event. In this way, an object or event can be drawn, photographed, filmed, or the results.
2. Manipulative, meaning it can playback objects or events with various changes as needed, such as resizing (for example, enlarging small objects or shrinking large ones), speed, color, and presentations that can be repeated, so that all can be controlled to be brought into the classroom.
3. Distributive, meaning using media can reach a wider target audience or reach many audiences in one dissemination. For example, television, radio, and newspapers. Derek

Rowntree explains that the functions of media in learning include:

1. It can encourage students to receive messages.
2. It can encourage students to respond to stimuli contained in the media; this makes it easier for students to repeat the message conveyed in the media.
3. It can provide faster feedback.
4. It can encourage students to participate in exercises.

According to Levie & Lentz (1982), visual media have four functions for teaching. These are attention, affective, cognitive, and compensatory.

The attention of visual media is crucial to attract students' attention and direct them to the lesson material related to the visual meaning displayed or accompanying the lesson text. Often, students are not interested in the lesson material at the beginning of the lesson or because they do not like the subject so they do not pay attention to it.

Pictures, especially those projected through an overhead projector, can soothe and direct their attention to the material to be learned. Therefore, the possibility of obtaining and remembering the contents of the lesson is greater.

One example of the affective function of visual media is how enjoyable it is for students to learn from illustrated texts or read them. Visual images or symbols can influence students' emotions and attitudes, such as about social or racial issues.

Research results show that visual symbols or images facilitate the understanding and retention of messages or information contained in images. This indicates the cognitive function of visual media.

Research results show that visual media that provide context for understanding text help weak readers organize text information and remember it. In other words, instructional media help weak readers to receive and understand lesson materials presented verbally or in text. This indicates the compensatory function of instructional media.

### *Learning Applications*

Applications, according to Jogiyanto (2001), are the implementation or storage of something, data, problems, or work into facilities or media that can be used to apply or implement existing things or issues so that they change into new forms without losing the underlying value of the data, problems, or work itself. However, according to Supriyanto (2005:117:132), an application is a program that processes commands to fulfill user requests for specific purposes.

The change in oneself as a result of experience is known as learning. Here are some definitions of learning provided by several experts. "Learning can be defined as a process that induces or changes behavior through practice or experience," said James O. Whittaker in Darsono. Whittaker states that "learning can be defined as a process that induces or changes behavior through practice or experience" (Whittaker in Darsono, 2000: 4). "A process, act, or way of making people or living beings learn" is the definition of learning according to the Big Indonesian Dictionary (KBBI, 1995:15). However, according to Gagne, Briggs, and Wagner in Udin S. Winataputra (2008), learning is a set of activities designed to enable students to undergo the learning process.

From the definitions above, it can be concluded that learning applications are programs used in teaching and learning activities to enable educational communication interaction between teachers and students to take place effectively and efficiently. Learning applications have great benefits in facilitating students to learn teaching materials. Learning applications must also be able to attract students' attention so that they are more interested in learning.

### *Learning Process*

The learning process is the process in which activities of interaction and mutual communication between teachers and students occur in educational situations to achieve learning goals (Rustaman, 2001:461). To ensure that students' learning outcomes can be achieved optimally, the interaction between them must support each other.

Bafadal (2005:11) states that learning can be defined as all efforts or teaching and learning processes carried out to create an effective and efficient learning process. In line with this, Jogiyanto (2007:12) argues that learning can be defined as a process in which an activity originates or changes in response to the situation faced, and the characteristics of the changes in the activity cannot be explained.

The learning process, according to Rooijakkers (1991:114), refers to teaching and learning activities that include educator activities, learner activities, patterns and processes of interaction between educators and learners, and learning resources in the learning environment. In the implementation of educational programs, the learning process is also defined as the learning process.

Winkel (1991:200) states that "the learning process is a psychic or mental activity that occurs in active interaction in the environment, which produces changes in knowledge, understanding, skills, and attitude values."

From several opinions, the learning process is all the efforts of teachers and students to share and process information with the hope that the knowledge provided can benefit students and become the foundation for continuous learning. The learning process is also expected to result in better changes to achieve positive improvements, characterized by changes in individual behavior. Based on certain practices or experiences, an effective learning process will enhance an individual's intelligence, critical thinking, and creativity, as well as change their behavior or personality.

### *Computer Mediated Communication (CMC)*

Study of computer-mediated communication (CMC), commonly referred to as "computer-mediated communication" or "computer-mediated communication," is a new type of research that began in 1987. Communication through computers (CMC) is a type of communication that utilizes media such as computers, laptops, smartphones, and others.

Communication through computer media (CMC) is communication that occurs between people through computer media or via computers (Herring in Budiargo, 2015:viii).

According to Andrew F. Wood and Matthew J. Smith, some people experience similar dissonance when working in reverse. This stems from familiar face-to-face interaction practices to subtle differences related to CMC.

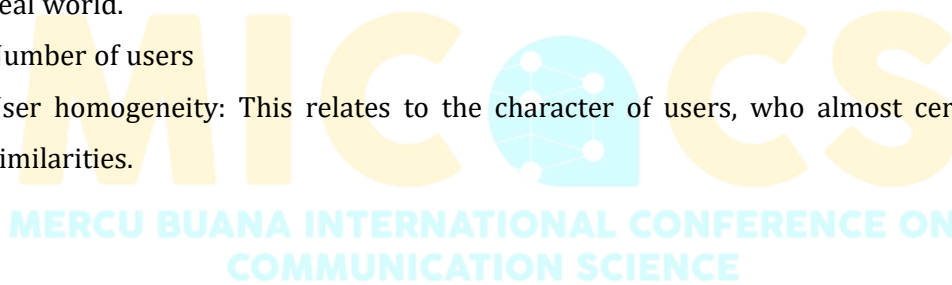
While CMC enables two or more people to communicate with each other and provide information through advances in communication technology, intrapersonal, interpersonal, group, or even mass communication can be conducted through communication media. Computer-mediated communication (CMC) means any kind of communication mediated by digital technology. For example, if a telephone conversation is computer-mediated if each speech act is converted into digital code, transmitted, and then decoded for the listener (Littlejohn & A. Foss, 2018a).

Further division here is synchronous and asynchronous CMC (Littlejohn & A. Foss, 2018a). Two types of CMC are synchronous and asynchronous. Asynchronous CMC, communication occurs asynchronously or indirectly, and communicators do not receive direct responses from communicants. Examples of synchronous communication are voice and video calls. Email, short message services, or SMS, are examples of asynchronous CMC. However, most

CMC operates asynchronously, with the convenience of communication that can be stored in continuous discourse through email and online social media (Littlejohn & A. Foss, 2018a). According to the book by Smith and Wood, the technological features of CMC are divided into five forms: electronic mail (e-mail), bulletin board systems (BBS), Internet Relay Chat (IRC), Multiuser Domains (MUDs), and the World Wide Web (WWW).

According to Kevin B. Wright and Lynne M. Webb (2011:122), there are seven characteristics of CMC, including

1. Synchronicity, which refers to the level at which message exchanges occur directly.
2. Anonymity, which is the level of individualization of information communicated by the media.
3. Customization is how far the mediated environment changes itself according to user desires.
4. Interactivity means talking to each other.
5. Social presence refers to how much social presence there is worldwide, similar to the real world.
6. Number of users
7. User homogeneity: This relates to the character of users, who almost certainly have similarities.



## **METHODOLOGY**

This research adopts the post-positivism paradigm because this approach utilizes a subjective way of thinking. This research adopts a qualitative approach using the research method of a case study. Qualitative research is about process, understanding, complexity, interaction, and human beings. Process is emphasized in qualitative research; therefore, in conducting research, researchers focus more on the process rather than the final outcome (Sarwono, 2006). The research object in this study is the pattern of *Prunus Digi Apps* media usage in the learning process at SMK Nusantara 1 Tangerang City. In this research, informants will be selected through purposive sampling, which is the selection of informants based on specific criteria predetermined in relation to the research objectives.

The data collection technique used in this study is through interviews, where the researcher will conduct interviews with teachers and students who use *Prunus Digi Apps* in learning. Interviews will be conducted face-to-face or via video conference. The aim of the

interviews is to obtain information about their experiences in using the application, perceived benefits, challenges faced, and suggestions for application development. Additionally, observation will be conducted. The researcher will observe the use of *Prunus Digi Apps* in learning to gather information. Observation can be done directly by observing learning activities in classrooms using the application or indirectly by observing video or audio recordings of previous learning activities. Lastly, Documentation Study, the researcher will collect data from documents related to the use of *Prunus Digi Apps* in learning.

## RESULTS AND DISCUSSION

Based on the data obtained from interviews and observations conducted, the researcher will discuss how teachers' and students' acceptance of the use of *Prunus Digi Apps* media in the learning process, the advantages and disadvantages of using *Prunus Digi Apps* media in the process, and how the pattern of using the *Prunus Digi Apps* application supports the learning process at SMK Nusantara 1 Tangerang City.

In general, the acceptance of *Prunus Digi Apps* in the learning process by teachers and students can be considered good, although there were some initial challenges such as the lack of understanding among teachers and students in using *Prunus Digi Apps* in the learning process. Therefore, initially, some teachers did not implement the use of *Prunus Digi Apps* in the learning process, many teachers did not take attendance using *Prunus Digi Apps*, and tasks and assessments were still conducted manually. However, the school foundation, school, and *Prunus Digi Apps* developers have made efforts by providing training for teachers in its usage. After making adjustments in using *Prunus Digi Apps* in the learning process, teachers and students felt that learning had become better and more organized in terms of attendance, assignments, assessments, discussions, and so on. Referring to the characteristics of Computer Mediated Communication (CMC), customization is how far the mediated environment adapts itself according to user preferences. The acceptance of *Prunus Digi Apps* by teachers and students is quite related to customization. *Prunus Digi Apps* can be well accepted by teachers and students and is considered to improve all teaching and learning activities for teachers and students at SMK Nusantara 1 Tangerang City.

However, *Prunus Digi Apps* is still considered to have shortcomings for its users, namely teachers and students, such as server downtime which can hinder the learning process, insufficient time for teachers to upload learning administration in accordance with the curriculum considering the constant changes in the curriculum in recent years, and the vulnerability of students to cheating during exams because they can still access the web and search for answers through it. Despite these shortcomings, *Prunus Digi App* also has advantages that can assist the learning process, such as learning becoming more practical and can be done anytime and anywhere, paperless learning, more detailed and organized learning activities, students becoming more motivated to learn and improve in learning, and *Prunus Digi Apps* having many features needed in the learning process. This is in line with the concept of learning media functions proposed by Harry C. McKnown, which are:

1. Transforming traditional and abstract learning situations into more practical and concrete ones.
2. Encouraging children to participate more actively and focus their attention on what they are learning.
3. Clarifying learning materials and curiosity about the subject matter.

Referring to the concept of application usage patterns defined by Rahayu Sulistyorini (2019), "digital application usage patterns" as a description of how people access, use, and interact with digital applications in the context of information technology. These patterns include usage routes, activities performed, as well as habits and preferences resulting from interactions with the application. The results of interviews on the pattern of using the *Prunus Digi Apps* application to support the learning process are stated by several informants that there are several features or menus commonly used by teachers, such as teaching administration, attendance, assignment and assessment, while for students, they are attendance, schedule, assignments, and grade recap. These menus are routinely used by teachers every day, so they are considered very helpful in the learning process. In addition, when using *Prunus Digi Apps*, users always follow steps such as logging in to the application, taking attendance, and then accessing the required menus such as assignments, assessments, projects, discussion forums, and so on. Based on the explanation, the pattern used in the *Prunus Digi Apps* application for learning activities at SMK Nusantara 1 Kota Tangerang is by using the "Smart Flow" pattern.

This reflects a directed and intelligent flow process, illustrating a journey like a stream that flows continuously every day from the log in and attendance stages towards the digital learning environment that is full of useful resources and interactions. "Flow" depicts continuous movement or flow, while "Smart" emphasizes the intelligence and benefits derived from using the application. The pattern name, "Smart Flow," describes how the application's usage starts, continues, and effectively utilizes the digital learning environment.

## CONCLUSION

Based on the above research entitled "Pattern of *Prunus Digi Apps* Usage in the Learning Process at SMK Nusantara 1 Tangerang City," the following conclusions can be drawn in the acceptance of *Prunus Digi Apps* in the learning process at SMK Nusantara 1 Tangerang City, teachers and students feel happy and enthusiastic about using *Prunus Digi Apps* because it simplifies learning activities. *Prunus Digi Apps* is considered very helpful in teaching and learning activities at SMK Nusantara 1, starting from attendance, teaching administration, assignments, project and test assignments, assessments, direct communication between teachers and students through discussion forums, report card filling, and communication with parents. All activities supporting the learning process are integrated into one application, making it more practical. *Prunus Digi Apps* users feel that there are some shortcomings that can hinder the learning process, such as server disruptions, teachers feeling short of time in completing teaching administration in accordance with the curriculum due to several changes in the education curriculum, and there are still incidents of cheating during exams using the *Prunus Digi Apps* application, this is because students can still access other websites while using the *Prunus Digi Apps* application. However, there are also some advantages that can assist learning activities, such as learning becoming more practical, paperless, more orderly, and organized, facilitating learning activities, and increasing student motivation to improve learning activities.

In the pattern of using *Prunus Digi Apps*, there are several features or menus commonly used by teachers, such as teaching administration, attendance, assignment, and assessment, while for students, they are attendance, schedule, assignments, and grade recap. These menus are routinely used by teachers every day. Then for the usage route, before entering *Prunus Digi Apps*, the first thing users must do is enter their username and password, then proceed with attendance because if they have not taken attendance, users cannot perform other activities in *Prunus Digi Apps*. After that, users can select the menu they need to carry out learning activities.

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