

Multimodal Smartphone: Millennial Student Learning Style

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Article Info

Volume 82

Page Number: 9535 - 9545

Publication Issue:

January-February 2020

Abstract:

Purpose: This study aims to describe multimodal smartphones as millennial student learning styles, including the functions and how multimodal smartphones as millennial student learning styles. This research was conducted at STKIP PGRI Pasuruan, East Java, Indonesia.

Research Methods: This research uses a qualitative approach with a case study method. Data in the form of verbal and written speech. Data sources for this research are questionnaire and interview. Data collected through questionnaires and interviews. Data analysis was carried out through four stages, namely data organization, data synthesis, data description, and conclusions of data analysis results.

Findings: The findings of this study indicate that (1) multimodal smartphones as learning styles aim for academics that lead to an academic focus. This is indicated by the data of 27% or 8 students choosing **academic** goals with indicators of communication with friends regarding studies, finding information related to studies, and communication with lecturers regarding studies, (2) multimodal smartphones as **learning styles aimed at information that is aimed at the ability in combining analysis and complexity** of semiotics. This is indicated by the data of 47% or 14 students choosing academic goals with indicators of reading emails, reading daily news, and writing emails that lead to information processing, (3) multimodal smartphones as learning styles aimed at socially that lead to lifelong learning experiences. This is indicated by the data of 13% or 4 students choosing academic goals with indicators writing short messages, reading social media comments, and writing comments on social media (Facebook, Instagram, and WhatsApp), and (4) multimodal smartphones as learning styles aims for entertainment that is aimed at providing new experiences in learning. This is shown through 13% or 4 students choosing entertainment destinations with video clip indicators, watching long films, and playing games.

Implications for Research and Practice: Based on the results of the study, it can be concluded that multimodal smartphones as learning styles aim for academic, information, social and entertainment. The findings of this study contribute to increasing the capability of students in tertiary institutions and increasing **student** competence in understanding cultural semiotics. Students as adult students lead to the achievement of self-identity consisting of, (a) self-concept, (b) the role of experience, (c) readiness for learning, and (d) learning orientation. This is trained to students as a learning style in the age of knowledge (knowledge age) with the acceleration of an extraordinary increase in knowledge. However, the development of smartphone multimodal competencies as learning styles needs to be directed especially in the fields of technology, media and information, learning and innovation skills as well as life and career skills.

Article History

Article Received: 18 May 2019

Revised: 14 July 2019

Accepted: 22 December 2019

Publication: 12 February 2020

Keywords: Multimodal Smartphone, Learning Style, Millennial Students

Introduction

Development of information and communication technology is a necessity in the use of smartphones for students. Since 2012, internet access among students has been directed towards smartphone use rather than computers (Eurostat, 2016; Jurkovič, 2019). The purpose of its use is also diverse, on the one hand, for functional purposes and on the other for academic, information, social, and entertainment purposes (Godwin Jones, 2017). The presence of smartphones as a medium in accessing information and communication directly leads to student competence in acting in the millennial era. Competency in question is competence in mastering data, technology, and humans (Nasir, 2018). These competencies can be optimized through multimodal communication competencies (Firmansyah and Rokhmawan, 2019).

Smartphones, as a medium for accessing information and communication, directly lead to increased multimodal competence of students. Smartphones are now a must-have medium for students. Almost all students use smartphones as the only media to communicate and access information (Timbowo, 2016). The trend of smartphone use is considered positive, especially in increasing competence in mastering data, technology, and humans. The characteristics of smartphones as new media are, (a) new forms of experience in understanding text, pleasure, entertainment and patterns of media consumption, (b) new ways of representing the world, (c) new forms of community relations and identity in interaction both in terms of space, place and time, (d) a new way of conception of human biological relationships with media technology, (e) new patterns in organization and production, an integration in media such as industrial culture, economics, information access, ownership, control, and law - invite (Lister, 2009). This is in line with the opinion of Jewitt and Kress (2003) about multimodal competence, namely the effort to understand the various ways of representation of knowledge and the making of meaning.

Multimodal as competence is the ability to understand various ways of representation of knowledge and the production of meaning (Jewitt and Kress 2003). Multimodal competencies of students through smartphone media are expected to develop in making a positive contribution to improving student competence in higher education. This theoretical foundation refers to Halliday's view of language, which is seen as an attempt to understand social semiotics (Halliday, 1977, 1978; Halliday & Hasan, 1985). Social construction is represented through encoded language forms. The empirical phenomenon of humans is

associated with language through social structures, which are products of social processes. Reality construction cannot be separated from the semantic system where the language is encoded. Thus, the meaning has a dual nature, the formulation of language as a social semiotic interprets language in the sociocultural context where the culture is understood. Studying language is primarily studying texts or discourses. Multimodal as a competency by utilizing smartphones as a media focus on discourse design by studying the contributions of semiotic sources (language, motion, images) that are deployed in various modalities (audio, visual, physical) in the process of coherence of text or discourse (Jewitt and Kress 2003; Firmansyah, 2018).

Learning styles are personal characteristics that make the characteristics of learning effective for some students and not useful for others (Wahyuddin, 2016). Millennial students have aspects of using smartphones in their daily activities (Timbowo, 2016). The smartphone is an item that must be owned by millennial students, so there is a statement that it is not "hanging out" if a student has not used a smartphone. Based on preliminary observations conducted in February 2019 on 2016 A-B students, 2017 A-B Indonesian language and literature education study program STKIP PGRI Pasuruan shows that 89.97% of students use smartphones, while 10.03% of students do not use the smartphone. However, in the use of smartphones as a medium with not yet optimal academic goals, students still depend on smartphones for information, social, and entertainment purposes. Students are an essential element in learning. Students, as students have necessary abilities that need to be developed, both physically and psychologically through knowledge. Millennial student learning style is the underlying potential (capacity) of students that needs to be grown to become students who are ready to take part in the community. Ideally, the learning given by the lecturer can help students towards maturity in acting in the city. Particularly for millennial students (Indonesian Language and Literature Education Study Program Students of STKIP PGRI Pasuruan), the learning style needs to be understood as a characteristic in improving their competence. In this case, it is multimodal competence using smartphone media as a learning style. This concerns the attributes of receiving the material to be learned. The task of the lecturer is to provide support and provide material suitability, which later can be understood by students in developing themselves as part of varied community life (Wahyuddin, 2016).

Based on the explanation above, this research needs to be done to answer the needs of millennial student learning styles, especially in the use of multimodal smartphones as a media to improve competence, especially in controlling data, technology, and humans. It is expected that students who use multimodal smartphones as learning styles can optimize their competencies adequately. Student multimodal smartphone competencies are then examined based on conceptual and procedural frameworks through learning. The purpose of this study is to describe the multimodal functions of smartphones as millennial student learning styles.

Method

Research Design

This study uses a qualitative approach with a case study method. A qualitative approach with a case study method is useful to gain an in-depth understanding of multimodal smartphones as a student learning style. This research approach is used to explain and explore the use of multimodal smartphone as a student learning style. Case studies are used to find out the characteristics of student learning styles with various objectives. The use of multimodal smartphones on the one hand for functional purposes and on the other for academic, information, social, and entertainment purposes (Godwin-Jones, 2017). This research was conducted to explore the reality of multimodal smartphone use as a learning style. The qualitative approach with the case study method is based on the nature and characteristics of the environment as a source of direct, descriptive, and meaningful data that is the focus of attention.

The research data are (1) students' verbal and written speech related to the functions and how multimodal smartphone is as a millennial student learning style. The relationship between services and how multimodal smartphones are further described is to find out the learning styles of students who are at the knowledge age by accelerating the increase in extraordinary knowledge (Wijaya, 2016). Knowledge optimization is supported by the application of digital media and technology called super highway information (Gates, 1996; Wijaya, 2016). Therefore, learning styles at the time of knowledge (knowledge age) need to be adjusted to the needs of the knowledge age.

The data sources of this research are two, namely (1) questionnaire to 30 students of the Indonesian civil service in East Java Indonesia and (2) interviews with 12 selected students to get a description of how multimodal smartphones are learning styles.

Questionnaire to students is done by using Google form with questions related to function and how to use multimodal smartphones as learning techniques. Interviews with 12 students were conducted after agreeing on the date and time for the meeting. This is done to get an adequate understanding of the use of multimodal smartphones as a learning style. The selection of this data source is made so that it matches the expectations of the determined research objectives.

Research Sample

The participants in this study were 30 students with various majors at the stkip PGRI Pasuruan branch, East Java, Indonesia. This study examines multimodal smartphones as millennial student learning styles. The function and how multimodal smartphone is utilized is the purpose of the research. The theoretical foundation used as an analytical tool is the theory of multimodal smartphone use for academic, information, social and entertainment purposes (Kress, 2001; Jewitt and Kress 2003; Eurostat, 2016; Godwin & Jones, 2017; Firmansyah, 2018; Jurkovič, 2019).

Research Instruments and Procedures

The instruments used by researchers to collect data in this study were questionnaires and interviews. Quizzes and interview guides were designed by researchers and validated by experts as a data collection tool relating functions and how multimodal smartphones are used as millennial student learning styles. Based on this explanation, the instrument was developed as a tool for collecting data for researchers, namely questionnaires and interviews. Both types of devices are used in stages in research. The data collection guide is used to collect data on multimodal smartphones used as learning styles for student students.

Collecting data on functions and how multimodal smartphones are used as student learning styles lead to questionnaires and interviews. The forms of a meeting in question include (1) multimodal smartphone functions used as student learning styles, and (2) how multimodal smartphones are used as student learning styles. Using several guide steps, the data needed can be captured more focused and adequate. When reading data sheets, researchers can mark data found by marking data. After reading the data sheet, the researcher moved the data to the data format for further analysis.

Data Analysis

Data analysis in this study was conducted in four stages, namely (1) organizing data, (2) synthesizing data, (3) describing data, and (4)

concluding the results of data analysis (Bogdan and Biklen, 2007: 159). At the stage of organizing data, data is sorted according to the focus of research, which includes (1) multimodal smartphone functions utilized as student learning styles, and (2) how multimodal smartphones are used as student learning styles, then the coding is carried out. Furthermore, the data is synthesized to find specific functions and how multimodal smartphones are used as student learning styles. After the information is summarized, the data is described to present a clear picture of the tasks and how multimodal smartphones are used as student learning styles. Furthermore, conclusions were made based on the focus of the study.

Results

In the following section, the results of research on the use of multimodal smartphones as student learning styles will be presented. In multimodal smartphone learning systems involve online activities to improve multimodal competencies (language,

speech, and visual) by using smartphones as a medium for personal, social communication and involvement in relevant content personally and professionally (Sockett, 2013; Firmansyah, 2018).

Multimodal smartphone is the ability to understand cultural signs by various ways of representation of knowledge and the production of meaning by using smartphones as a medium that involves the use of language, speech, and visuals from multiple online resources in various authentic communications (Kress, 2001; Jewitt and Kress 2003 ; Eurostat, 2016; Firmansyah, 2018; Jurkovič, 2019). The use of language is associated with empirical phenomena through social structures, which are products of social processes. The functions of its use are also diverse, on the one hand, for functional purposes and on the other for academic, information, social, and entertainment purposes (Godwin-Jones, 2017). The following will be presented in table.1 multimodal smartphone as a student learning style.

Number of Participants	Multimodal Smartphone function	Indicator	Percentage	Number of Participants
30 Participants	Academic	<ul style="list-style-type: none"> • Communicate with friends regarding study • Look for information related to studies • Communication with lecturers regarding study 	27%	8
	Information	<ul style="list-style-type: none"> • Read email • Read daily news • Write an email 	47%	14
	Social	<ul style="list-style-type: none"> • Write a Short Message • Read social media comments • Write comments on social media 	13%	4
	Entertainment	<ul style="list-style-type: none"> • Watch Video Clip • watch long films • Playing games 	13%	4

Table 1. Student participation in various majors at the PGRI Pasuruan branch, East Java Indonesia (n = 30)

Based on table 1 it can be seen that (a) 27% or 8 students function multimodal smartphone as their learning style for academic purposes, (b) 47% or 14 students function multimodal smartphone as their learning style for information purposes, (c) 13% or 4 students function as multimodal smartphones as their

learning styles for social purposes, and (d) 13% or 4 students use multimodal smartphones as their learning style for entertainment purposes. Data analysis shows that information purposes dominate multimodal smartphone functions as student learning styles. This information function is complimentary for academic,

social, and entertainment purposes. Multimodal smartphone functions as a learning style in detail will be explained as follows.

First, 27% of students function as multimodal smartphones as their learning styles for academic purposes. The educational goals in question are communication with friends regarding the study, seeking information related to study, and interaction with lecturers regarding study. In the context of adult learners (andragogy), learning leads to experiential learning, which is an adaptation to the ability to understand and process data, technology, and human interaction based on concrete experiences of various modalities (language, speech, and visual) which are contemplated and made into ideas and development new concept. Like adult students who can adapt to their learning environment, this academic goal is the first target in multimodal smartphones as a learning style. However, the facts found by students have not been optimal in developing their learning styles, especially in focusing their learning styles. This is due to a lack of several factors, namely: students have not prioritized tangible learning in relevant contexts, students have not been optimal in formal and non-formal learning processes, students have not been optimal in motivating themselves in learning so that the meaning of social experiences is neglected, students have not realized that learning need to be directed in an effort to construct experience. Ability to understand cultural signs by various ways of representation of knowledge and the production of meanings by using smartphones as media involving the use of language, speech, and visuals from multiple online resources in various authentic communications (Kress, 2001; Jewitt and Kress 2003; Eurostat, 2016; Firmansyah, 2018; Jurkovič, 2019) need to be instilled early on as student learning styles.

Second, 47% of students function multimodal smartphone as their learning style for information purposes. The purpose of the information in question is to read emails, read the daily news, and write emails. If viewed from the opinion of Kress & Leeuwen (2001) that differences in semiotic resources bring capabilities and constraints both personally and in combination and challenge analysis in terms of the properties of the media, detail, and scope of study and the complexity arising from the integration of semiotic cross resources culture. The ability to combine analysis and semiotic complexity across cultures is related to students' creative thinking, which makes it possible to produce different ideas so they can help solve problems (Sultan et al., 2017a; Sultan et al., 2017b; Shabrina et al., 2018; Syahrin et al., 2019). In this case, the development of multimodal competencies (language, speech, and visual) of students recognizes the existence of semiotic

resources and modalities in making meaningful solutions to problems. Semiotic is not reduced to a paralinguistic resource, which is an addition to language but is seen as a semiotic source that is given the same status as language and is equally effective in semiosis. Students should use Language, speech, and visuals contained in multimodal smartphones as information sensitivity to potential meanings and modalities in understanding the production of discourse in the construction and presentation of knowledge. Therefore it is possible for the information function to be directed at the ability to combine analysis and semiotic complexity related to creative thinking to produce different ideas to help solve problems.

Third, 13% of students function as multimodal smartphones as their learning styles for social purposes. The social goals intended by participants are writing short messages, reading social media comments, and writing comments on social media (Facebook, Instagram, and whatsapp). Multimodal smartphones as learning styles, are interpreted as lifelong learning. The meaning of knowledge is not only in formal and informal spaces but from communication through social media. The multimodal smartphone perspective in lifelong learning is directed at social interaction which can later be used as a provision for classroom learning experiences. This is in line with the multimodal smartphone perspective in knowledge, which can provide an understanding that can give multisemiotic experience as a competency analysis of multimodal discourse and sensitivity in the use of multimodal resources and the potential to shape learning experiences using smartphones as media (O'Halloran & Podlasov, 2011; Lim & Yin, 2017; Firmansyah, 2018).

Fourth, 13% of students use multimodal smartphones as their learning style for entertainment purposes. The intended entertainment goals are watching video clips, watching long films, and playing games. According to Timbowo (2016), the tendency of students to use smartphones as the only media to communicate and access information is a necessity. According to some participants who chose entertainment goals were considered positive in improving their competence. The increase in ability in question is mastering data, technology, and humans. However, this opinion is too early to draw conclusions given that there is unlimited entertainment, especially those found in video clips, long films, and playing games. The characteristics of multimodal smartphones as new media are, (a) new forms of experience in understanding text, pleasure, entertainment and patterns of media consumption, (b) new ways of representing

the world, c) new forms of community and identity relationships in terms of both space, place and time, (d) a new type of conception of human relations biologically with media technology, (e) new patterns in organization and production, an integration in media such as industrial culture, economics, access to information, ownership, control and law invite (Lister, 2009). The opinion above certainly needs to be strengthened by the view of Jewitt and Kress (2003) on multimodal competence, namely the effort to understand various ways of representation of knowledge and the making of meaning. Therefore, it is necessary to strengthen the concept of multimodal smartphone use as a learning style for entertainment purposes.

Based on the description of the research findings above, it is necessary to review the learning style of students, especially in the millennial era. Learning style is a combination of absorption, arrangement, and information processing in the learning process (Deporter & Hernacki, 2011). The tendency of millennial student learning styles is oriented to the acceleration of knowledge supported by the application of digital media and technology (Wijaya, 2016). The convergence of learning styles is a necessity in understanding the learning styles of millennial students. The convergence of learning techniques in question is a visual learning style, auditory learners, and kinesthetic learners that lead to the acceleration of knowledge supported by media and technology in utilizing data and communication. Besides aspects of facing information, seeing, listening, writing, and saying there are also aspects of sequential, analytical, global information processing or the left-right brain. On the other hand, there are also responsive aspects of something related to the learning environment (absorbed abstractly and concretely).

A review of millennial student learning styles also needs to be reviewed through the learning characteristics. According to Wijaya (2016), the learning style of millennial students is at a knowledge age with an accelerated increase in extraordinary knowledge. This acceleration of education is supported by the application of digital media and technology called super highway information (Gates, 1996; Wijaya, 2016). Learning styles at the time of knowledge (knowledge age) need to be adjusted to the needs of the knowledge age. The design of learning materials needs to be authentic so students can collaborate in creating solutions to learning problems. Problem-solving leads to questions and seeking answers by students who can then find solutions to problems in the context of learning using available information resources (Trilling and Hood, 1999).

The demands of millennial students are enormous, especially in developing competencies in the fields of technology, media, and information, learning and innovation skills and life and career skills. This is in line with the formulation of the 21st-century learning paradigm, which emphasizes the ability of students to find out from various sources, formulate problems, think analytically, and collaborate and collaborate in solving problems. The explanation of the 21st century learning framework according to (BSNP: 2010) is as follows: (a) The ability to think critically and problem-solving (Critical Thinking and Problem-Solving Skills), able to think critically, laterally, and systemically, especially in the context of solving problem; (b) The ability to communicate and collaborate (Communication and Collaboration Skills), able to communicate and collaborate effectively with various parties; (c) Critical-Thinking and Problem-Solving Skills, capable of thinking critically, laterally, and systemically, especially in the context of problem solving; (d) The ability to communicate and collaborate (Communication and Collaboration Skills), able to communicate and collaborate effectively with various parties; (e) The ability to create and update (Creativity and Innovation Skills), is able to develop its creativity to produce innovative breakthroughs; (f) Literacy of information and communication technology (Information and Communications Technology Literacy), capable of utilizing information and communication technology to improve performance and daily activities; (g) Contextual Learning Skills, capable of undergoing contextual independent learning activities as part of personal development, and (h) The ability of information and media literacy, able to understand and use various communication media to convey multiple ideas and carry out collaborative activities and interactions with multiple parties.

Discussion, Conclusion, and Recommendations

Multimodal smartphone is the ability to understand cultural signs by various ways of representation of knowledge and the production of meaning by using smartphones as a medium that involves the use of language, speech, and visuals from multiple online resources in various authentic communications (Kress, 2001; Jewitt and Kress 2003 ; Eurostat, 2016; Firmansyah, 2018; Jurkovič, 2019). The use of language is associated with empirical phenomena through social structures, which are products of social processes. In this case, language, speech, and visual are deployed simultaneously and mutually coherent. The multimodal context of smartphones as a system of meaningful information in

a concrete level, namely language does not only contain sentences but contains discourses to allow the exchange of meanings in interpersonal contexts. Multimodal smartphones in learning systems involve online activities with planning to improve multimodal competencies (language, speech, and visual) by using smartphones as a medium for personal, social communication and involvement in relevant content personally and professionally (Sockett, 2013; Firmansyah, 2018). The purpose of its use is diverse, on the one hand, for functional purposes and on the other for academic, information, social, and entertainment purposes (Godwin Jones, 2017).

Millennial student learning styles are oriented towards accelerating the increase in knowledge supported by the application of digital media and technology (Wijaya, 2016). The use of media and technology is a convergence of visual learners, auditory learners, and kinesthetic learners, which leads to the acceleration of knowledge. Learning style is a combination of absorption, arrangement, and information processing in the learning process (Deporter & Hernacki, 2011). Besides aspects of facing information, seeing, listening, writing, and saying but also aspects of sequential, analytical, global, or left-right information processing. On the other hand, there are also responsive aspects of something related to the learning environment (absorbed abstractly and concretely).

First, multimodal smartphone as a learning style aimed at academics. Based on data from participants who chose academic goals, namely communication with friends about studies, seeking information related to reviews, and interaction with lecturers regarding studies shows that multimodal smartphones are millennial student learning styles that lead to academic focus. The academic focus in question is understanding that leads to more effective learning through multimodal discourse and multisemiotic experience as competency and sensitivity in the use of multimodal resources using smartphones as a medium (O'Halloran & Podlasov, 2011; Lim & Yin, 2017; Firmansyah, 2018). Students are said to have multimodal smartphone competencies should have the sensitivity to potential meanings and modalities in understanding the production of discourse in the construction and presentation of knowledge. With communication with friends, seeking information related to study and interaction with lecturers regarding studies, multimodal smartphone competencies are the provision of students in understanding multimodal discourse. Furthermore, the presence of technology and information has put forward the multimodal nature of

smartphones as competencies in studying semiotic resources such as language, speech, and visual (modality). Movement, sound, and all material objects carry interactional meaning after being felt by someone (O'Toole, 1994; Norris, 2004).

The findings of the study on multimodal smartphones as a learning style aimed at academics are directed towards an academic focus. This is indicated by data of 27% or 8 students choosing educational goals with indicators of communication with friends regarding studies, seeking information related to study, and contact with lecturers regarding study. These findings indicate that millennial student learning styles lead to an academic focus with adequate learning competencies through multimodal discourse and multisemiotic experience in the use of multimodal resources using smartphones as media.

Second, multimodal smartphone as a learning style aimed at information. Based on data from participants who chose the purpose of information, namely reading e-mails, reading the daily news, and writing e-mails, the multimodal smartphone was a millennial student learning style that was able to combine the analysis and complexity of semiotics. The difference in semiotic resources brings both abilities and constraints both personally and in combination and challenges of study in terms of the characteristics of the media, details, and scope of analysis and the complexity arising from the integration of semiotic resources across cultures (Kress & Leeuwen, 2001). The ability to combine study and semiotic complexity across cultures is related to students' creative thinking, which makes it possible to produce different ideas so they can help solve problems (Syahrin et al., 2019). The development and improvement of multimodal competencies (language, speech, and visual) students recognize the existence of semiotic resources and modalities in making meaningful solutions to problems. Students use Language, speech, and visuals contained in multimodal smartphones as information sensitivity. The potential of meaning and modality (language, address, and visual) is the effort of students in processing information by understanding the production of discourse in the construction of the presentation of knowledge. Therefore it is possible for the information function to be directed at the ability to combine analysis and semiotic complexity related to creative thinking to produce different ideas to help solve problems.

The findings of the study on multimodal smartphones as learning styles aim at information that is directed at the ability to combine the analysis and

complexity of semiotics. This is indicated by data of 47% or 14 students choosing academic goals with indicators reading e-mails, reading the daily news, and writing e-mails. This finding shows that millennial student learning styles lead to information processing. Information processing in question is the ability to combine analysis and semiotic complexity with students' creative thinking, which makes it possible to produce different ideas so they can help solve problems.

Third, multimodal smartphone as a learning style for social purposes. Based on data from participants who chose social goals, namely writing short messages, reading social media comments, and writing comments on social media (Facebook, Instagram, and WhatsApp) shows that multimodal smartphone is a millennial student learning style that can provide lifelong learning experiences. The multimodal smartphone perspective in learning, which can provide understanding in providing multisemiotic experiences as competencies in analyzing multimodal discourse and sensitivity in the use of multimodal resources and the potential to shape learning experiences using smartphones as media (O'Halloran & Podlasov, 2011; Lim & Yin, 2017; Firmansyah, 2018). Multimodal smartphones as learning styles, are interpreted as lifelong learning. The meaning of education is not only in formal and informal spaces but from communication through social media. The multimodal smartphone perspective in lifelong learning is directed at social interaction which can later be used as a provision for classroom learning experiences.

The findings of the study on multimodal smartphones as a learning style aimed at the social that is leading to lifelong learning experiences. This is indicated by data of 13% or 4 students choosing academic goals with indicators of writing short messages, reading social media comments, and writing comments on social media (Facebook, Instagram, and WhatsApp). These findings indicate that millennial student learning styles lead to lifelong learning experiences. Thus, learning means not only in formal and informal spaces but communication through social media.

Fourth, multimodal smartphone as a learning style for entertainment purposes. Based on data from participants who chose entertainment goals, namely video clips, watching long films, and playing games showed that multimodal smartphone is a millennial student learning style that can provide new experiences in learning. Timbowo (2016) explained that the tendency of students to use smartphones as the only media to communicate and access information is a

necessity. According to some participants who chose entertainment goals were considered positive in improving their competence. The increase in capability in question is mastering data, technology, and humans. However, this opinion is too early to draw conclusions given that there is unlimited entertainment, especially those found in video clips, long films, and playing games. The characteristics of multimodal smartphones as new media are, (a) new forms of experience in understanding text, pleasure, entertainment and patterns of media consumption, (b) new ways of representing the world, c) new forms of community and identity relationships in terms of both space, place and time, (d) a new type of conception of human relations biologically with media technology, (e) new patterns in organization and production, an integration in media such as industrial culture, economics, access to information, ownership, control and law invite (Lister, 2009). The opinion above certainly needs to be strengthened by the view of Jewitt and Kress (2003) on multimodal competence, namely the effort to understand various ways of representation of knowledge and the making of meaning.

The findings of the study on multimodal smartphones as learning styles are aimed at entertainment that is directed towards providing new experiences in learning. This is indicated by 13% or 4 students choosing entertainment destinations with video clip indicators, watching long films, and playing games. These findings suggest that millennial student learning styles lead to new experiences in learning. Furthermore, several studies find that multimodal based learning can improve competency in students. First, there are research findings on multimodal texts that use lego and youtube media in English courses to enhance student communication competencies (Cocchetta, 2018). Second, the use of multimodal learning materials and literature can improve understanding of culture, context, dialect, and idioms (Kennedy, 2014). Third, the use of multimodal song lyrics (Let It Go, "Frozen") in learning English can improve vocabulary, grammar, and accuracy, linguistic competence, and self-confidence, motivation, cultural knowledge, empathy, and objectivity. Fourth, the multi-modal strategy (MMS) learning approach which consists of (a) word, (b) member, (c) real thing, (d) diagram, (e) story, and (f) symbol can strengthen self-confidence students in learning (Hamdi, Syukrul, 2013). Fifth, multimodal conceptions in language learning increase the motivation and confidence of two EFL Taiwanese students (Lee, 2014). Thus, interpreting multimodal smartphones as learning styles aimed at entertainment can be achieved through watching video clips, watching long films, and playing games with attention

to the multimodal characteristics of smartphones as new media.

Multimodal smartphone as a learning style is expected to be able to contribute positively to improving student capabilities in Higher Education and enhance student competence in understanding cultural semiotics (Kress, 2001; Firmansyah, 2018). The multimodal smartphone context in learning systems involves online activities with planning to improve multimodal competencies (language, speech, and visual) by using smartphones as a medium for personal, social communication and involvement in relevant content personally and professionally (Sockett, 2013; Firmansyah, 2018). The purpose of its use is also diverse, on the one hand, for functional purposes and on the other for academic, information, social, and entertainment purposes (Godwin-Jones, 2017). The difference in semiotic resources brings both abilities and constraints both personally and in combination and challenges of analysis in terms of the characteristics of the media, details, and scope of study and the complexity arising from the integration of semiotic resources across cultures (Kress & Leeuwen, 2001). Students are said to have multimodal smartphone competencies should have the sensitivity to potential meanings and modalities in understanding the production of texts or discourses in the construction and presentation of knowledge. Multimodal smartphone competence as a provision makes students not only as consumers who understand multimodal texts but also prepare students as producers of competent multimodal texts. The presence of technology and information has put forward the multimodal nature of smartphones as competencies in studying semiotic resources such as language and resources such as language, speech, and visual (modality). Movement, sound, and all material objects carry interactional meaning after being felt by someone (O'Toole, 1994; Norris, 2004). The multimodal smartphone perspective in learning can provide insight that can lead to more effective learning in the classroom through multimodal texts and multisemiotic experiences as competencies for analyzing multimodal discourse for students and sensitivity in the use of multimodal resources and the potential to shape classroom learning experiences using smartphones as media (O'Halloran & Podlasov, 2011; Lim & Yin, 2017; Firmansyah, 2018).

Students are adult students and are no longer subject to learning that can be arbitrarily formed and influenced to be able to adjust to learning but rather towards achieving self-identity (Yuniarto, 2011; Firmansyah, 2018). Through multimodal smartphone as

a learning style, the formation of student character develops naturally by noticing the maturity of concepts, and the development of deep psychology. Students are seen and treated as a whole person who directs himself. Lecturers have a role in leading and introducing the concept of andragogy, which consists of (a). Self Concept, (b). Part of Experience, (c). Learning Readiness, and (d). Learning Orientation (Knowles, 1970). First, self-concept assumptions lead to seriousness and self-maturity in learning so that the direction of independence of learning grows. Second, the role of experience is more of an individual's process of building and developing toward the direction of maturity. Third, learning readiness is interpreted as a mature individual according to the passage of time. Learning readiness that is not determined by academic or biological needs or compulsion, but instead is determined by the demands of development and changes in tasks and their role in the social environment. Fourth, the assumption of learning orientation to the plan and conditions to have an adjustment centered on learning material (Subject Matter Centered Orientation).

The learning style of millennial students is at a knowledge age, with an accelerated increase in extraordinary knowledge (Wijaya, 2016). This acceleration of experience is supported by the application of digital media and technology called super highway information (Gates, 1996; Wijaya, 2016). Learning styles at the time of knowledge (knowledge age) need to be adjusted to the needs of the knowledge age. Learning materials are designed to be more authentic to go through challenges where students can collaborate to create lecture problem-solving solutions. Problem-solving leads to questions and seeking answers by students who can then find solutions to problems in the context of learning using available information resources (Trilling and Hood, 1999).

The demands of millennial students are enormous, especially in developing competencies in the fields of technology, media, and information, learning and innovation skills and life and career skills. This is in line with the formulation of the 21st-century learning paradigm, which emphasizes the ability of students to find out from various sources, formulate problems, think analytically, and collaborate and collaborate in solving problems. The explanation of the 21st century learning framework according to (BSNP: 2010) is as follows: (a) The ability to think critically and problem-solving (Critical Thinking and Problem-Solving Skills), able to think critically, laterally, and systemically, especially in the context of solving problem; (b) The

ability to communicate and collaborate (Communication and Collaboration Skills), able to communicate and collaborate effectively with various parties; (c) Critical-Thinking and Problem-Solving Skills, capable of thinking critically, laterally, and systemically, especially in the context of problem solving; (d) The ability to communicate and collaborate (Communication and Collaboration Skills), able to communicate and collaborate effectively with various parties; (e) The ability to create and update (Creativity and Innovation Skills), is able to develop its creativity to produce innovative breakthroughs; (f) Literacy of information and communication technology (Information and Communications Technology Literacy), capable of utilizing information and communication technology to improve performance and daily activities; (g) Contextual Learning Skills, capable of undergoing contextual independent learning activities as part of personal development, and (h) The ability of information and media literacy, able to understand and use various communication media to convey various ideas and carry out collaborative activities and interactions with various parties.

In the Millennium era, higher education requires continuous innovation. The innovations in question are: (a) building capabilities to achieve organizational and administrative excellence, (b) identifying potential knowledge assets that can be exploited for the growth of higher education innovations, and (3) spatial development of learning environments accompanied by design learning experiences through research and development (Rofi'uddin, Saryono, Kamdi, & Mukminatien, 2017). Learning designed to lead to the millennial era is expected to contribute to improving student capabilities. This refers to the purpose of higher education, namely: (a) the development of the potential of students to become human beings who believe and fear the Almighty God and are noble, healthy, knowledgeable, capable, creative, independent, skilled, competent, and cultured for the sake of nation, (b) the production of graduates who master the branches of science and / or technology to meet national interests and increase national competitiveness, (c) the creation of science and technology through research that pays attention to and applies the values of humanities to benefit the nation's progress and progress civilization and welfare of mankind, and (d) the realization of community service based on reasoning and research work that is useful in advancing public health and educating the nation's life (President of the Republic of Indonesia, 2012). In particular, alluded to the learning in Law number 12 of 2012 Higher Education Law Article 13 paragraph 1 and 2, namely: (1) students as

members of the Academic Society are positioned as adults who have their own awareness in developing their individual potential in Higher Education to become intellectual, (2) Students as referred to in paragraph (1) actively build their potential by conducting learning, scientific truth-seeking, and / or mastering, developing, and practicing a branch of Science and / or Technology to become scientists, intellectuals, practitioners, and / or cultured professionals.

References

1. Bobbi, D., & Hernacki, M. (2011). Quantum learning. *Jakarta: KAIFA*.
2. Bogdan, R. C., & Biklen, S. K. (2007). Research for education: An introduction to theories and methods. *Boston, MA: Allen and Bacon*.
3. Coccetta, F. (2018). Developing university students' multimodal communicative competence: Field research into multimodal text studies in English. *System*, 1-9. <https://doi.org/10.1016/j.system.2018.01.004>
4. Firmansyah, M. B. (2018). Multimodal Conception in Learning. *ISLLAC: Journal of Intensive Studies on Language, Literature, Art, and Culture*, 2(1), 40-44.
5. Firmansyah, M. B., & Rokhmawan, T. (2019). PENGEMBANGAN KOMPETENSI KOMUNIKASI MULTIMODAL MAHASISWA STKIP PGRI PASURUAN. *Jurnal Ilmiah Edukasi & Sosial*, 9(2), 124-133.
6. Gates, V. (1996). Stories, coupons, and the TV Guide: Relationships between home literacy experiences and emergent literacy knowledge. *Reading research quarterly*, 31(4), 406-428.
7. Godwin-Jones, R. (2017). *Smartphones and language learning*. *Language, Learning and Technology*, 21(2), 3e17.
8. Halliday, M.A.K. (1977). Language as Social Semiotic: Towards a General Sociolinguistic Theory. Dalam Makkai, A., Makkai, V.B., & Heilmann, L. (Eds.), *Linguistics at the Crossroads* (hlm. 13-41). Padova: Tipografia-La Garangola.
9. Halliday, M.A.K. (1978). *Language as Social Semiotic: The Social Interpretation of Language and Meaning*. London: Edward Arnold.
10. Halliday, M.A.K. (1985/1994). *An Introduction to Functional Grammar*. London: Edward Arnold Publishers Ltd
11. Hamdi, Syukrul, A. (2013). DALAM PEMBELAJARAN MATEMATIKA

- MELALUI PENDEKATAN MULTI-MODAL STRATEGY (MMS). In *Prosiding* (pp. 978–979).
12. Jewitt, C., & Kress, G. R. (Eds.). (2003). *Multimodal literacy*. New York: Lang.
 13. Jurkovič, V. (2019). Online informal learning of English through smartphones in Slovenia. *System*, 80, 27-37.
 14. Kennedy, V. (2014). Critical, cultural and multimodal approaches to using song as literature in language learning. *Libri & Liberi*, 3(2), 295–310.
 15. Kress, G., & Van Leeuwen, T. V. (2001). Multimodal discourse: The modes and media of contemporary communication.
 16. Knowles, M. S. (1970). The modern practice of adult education: Andragogy versus pedagogy.
 17. Lee, H. (2014). Using an arts-integrated multimodal approach to promote English learning: A case study of two Taiwanese junior college students HSIAO-CHIEN LEE. *English Teaching: Practice and Critique*, 13(2), 55–75.
 18. Lim-Fei, V., & Yin, S. T. K. (2017). Multimodal Translational Research: Teaching Visual Texts. *New Studies in Multimodality: Conceptual and Methodological Elaborations*, 175.
 19. Lister, Martin, dkk. (2009). *New Media* 2nd edition. New York: Routledge
 20. Nasir, M. (2018). Pendidikan Tinggi Berkualitas: “Mendorong Kemajuan IPTEK, Inovasi, dan Daya Saing Bangsa di Era Revolusi Industri 4.0”.
 21. Norris, P. (2004). *Electoral engineering: Voting rules and political behavior*. Cambridge university press.
 22. O'Halloran, K. L., Tan, S., Smith, B. A., & Podlasov, A. (2011). Multimodal analysis within an interactive software environment: critical discourse perspectives. *Critical Discourse Studies*, 8(2), 109-125.
 23. O'toole, M. (1994). *The language of displayed art*. Fairleigh Dickinson Univ Press.
 24. Piaget, J. (1971). Psychology and epistemology (A. Rosin, trans.). *New York: Grossman*.
 25. Rofi'uddin, A., Saryono, D., Kamdi, W., & Mukminatien, N. (2017). *Kurikulum Transdisipliner dan Belajar Berbasis Kehidupan*. (A. Rofi'uddin, D. Saryono, W. Kamdi, & N. Mukminatien, Eds.) (Cetakan Pe). Malang: Penerbit dan Percetakan Universitas Negeri Malang.
 26. Shabrina, & Kuswanto, H. (2018). Android-assisted mobile physics learning through Indonesian batik culture: improving students' creative thinking and problemsolving. *International Journal of Instruction*, 11(4), 287-302. <https://doi.org/10.12973/iji.2018.11419a>
 27. Sockett, G. (2013). Understanding the online informal learning of English as a complex dynamic system: An emic approach. *ReCALL*, 25(1), 48-62.
 28. Sultan, Rofiuddin, A., Nurhadi, & Priyatni, E. T. (2017a). The development of acritical reading learning model to promote university students' critical awareness. *New Educational Review*, 48(2), 76-86, <https://doi.org/10.15804/ner.2017.48.2.06>
 29. Sultan, Rofiuddin, A., Nurhadi, & Priyatni, E. T. (2017b). The effect of the critical literacy approach on pre-service language teachers' critical reading skills. *Eurasian Journal of Educational Research*, 71, 159–174. <https://doi:10.14689/ejer.2017.71.9>
 30. SYHRIN, A., SUWIGNYO, H., & PRIYATNI, E. T. (2019). Creative Thinking Patterns In Student's Scientific Works. *Eurasian Journal of Educational Research (EJER)*, (81).
 31. Timbowo, D. (2016). MANFAAT PENGGUNAAN SMARTPHONE SEBAGAI MEDIA KOMUNIKASI (Studi pada Mahasiswa Jurusan Ilmu Komunikasi Fakultas Ilmu Sosial dan Politik Universitas Sam Ratulangi). *Jurnal Acta Diurna*, 5(2).
 32. Trilling, B., & Hood, P. (1999). Learning, Technology, and Education Reform in the Knowledge Age or "We're Wired, Webbed, and Windowed, Now What?". *Educational technology*, 39(3), 5-18.
 33. Wahyuddin, W. (2016). GAYA BELAJAR MAHASISWA. *ALQALAM*, 33(1), 105-120.
 34. Wijaya, E. Y., Sudjimat, D. A., Nyoto, A., & Malang, U. N. (2016). Transformasi pendidikan abad 21 sebagai tuntutan pengembangan sumber daya manusia di era global. In *Prosiding Seminar Nasional Pendidikan Matematika* (Vol. 1, No. 26, pp. 263-278).
 35. Yuniarto, Saiful Rahman. 2011. *Pembelajaran Untuk Orang Dewasa*. (Online), <http://saifulwhn.lecture.ub.ac.id/files/2011/11/Pendidikan-orang-dewasa.pdf>, diakses 6 Juni 2019.