The Patterns of Student Scientific Development through Digital Media Consumption in Islamic Boarding Schools

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Abstract

This qualitative research explores the evolving role of digital media in the scientific development of students within Central Java Islamic boarding schools. It examines how pesantren navigate the tension between preserving traditional values and embracing social transformations in the digital age. The study focuses on six institutions and involves students, caregivers, administrators, and stakeholders. Data was gathered through observation, interviews, and documentation, and analyzed using Miles and Huberman's framework. Findings reveal that students' use of social media, is influenced by social and psychological factors, and it fulfills cognitive, affective, and integrative needs. Platforms like social networks, blogs, YouTube, and e-learning are crucial for their educational journey. This consumption shapes a new adaptive-recreative religious authority, enhancing students' ability to integrate Islamic knowledge with technological advancements. The study underscores the importance of responsible digital media integration in pesantren, urging educational institutions to embrace these tools effectively and ethically for student development.

Keywords: *Digital Media Consumption, Student Intellectual Development, Islamic Boarding School.*

INTRODUCTION

The presence of digital-based technology brings significant changes to human life in various aspects ranging from political, educational, social, to religious realms. Socially, the development of the digital world touches all levels of society both massively and structurally in various segments of life (Permpoonputtana et al., 2024; Savitri, 2019). In the religious dimension, digital technology provides a variety of religious information that can be accessed by the wider community. In Education, technological developments have also changed the pattern and model of Education (Rashid & Roy, 2024). Where the information and knowledge transfer is not only transferred conventionally but also through digital transmissions such as email, blogs, platforms, WordPress, video tutorials, and so on. Digital development transforms old values into new values that encourage various innovations that can facilitate society toward better change. In this era, new technologies and innovations are spreading wider and faster than ever (Istrate et al., 2024).

People's consumption of news, entertainment, and social, professional, and entertainment life support has shifted and even undergone significant changes. The shift starts from the type of media used, namely from radio and television to internet-based media, especially WhatsApp, YouTube, facebook, Instagram, Twitter, and Telegram (Maulida, 2021; Susanto et al., 2022). In various variants of research results, data from Kompas.com about digital media consumption patterns of young people aged 18-24 years. This media found that the content consumed included 35% education, 31% health, 13% promotion, 7% technology, and 4% lifestyle. As many as 71.81% use mobile and 26.64% use PC. The most widely used browser is Google Chrome 75.75% while the operating system used is Windows 95.70% (Kuncorojati, 2021).

This condition also has an impact on the pattern of pesantren education, including in the realm of scientific development. In addition to reasons for learning efficiency and wider access to information, the digital world can also be a new means of obtaining and conveying ideas. The presence of digital media affects student interaction and learning patterns. Where the tradition of *muwajjahah* (learning by facing each other between

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teachers and students) in learning and the tradition of *istinbath* (looking for references) through the book of *turat* (classical books on Islamic studies) will be replaced with the tradition of googling and face-to-screen (Hamid et al., 2024). Student motives in using digital technology through social media vary, including meeting information needs, fulfilling tasks, lifestyle, milk book substitutes, entertainment, making friends, and studying religious knowledge (Mahoney & Tang, 2024, p. 292; Solihat, 2017).

In pesantren, the great opportunity offered by this era is the opening of information for students to access information and education programs freely. Every student can learn through social media without leaving conventional learning that takes place in pesantren (Nuryadin, 2017). As well as the support of Minister of Religious Affairs Yaqut Cholil Qoumas for the 2021 digital talent scholarship program which is also attended by Islamic boarding schools. This kind of support has also been carried out by the previous Minister of Religious Affairs Lukman Hakim Saifudin in memorial of National Santri Day in 2018. He said that students must be called and use social media optimally as a means of spreading peace (Maulida, 2021; Rashid & Roy, 2024). Santri is required to be able to adapt or adjust, so they will not be left behind information. Santri with all its abilities is expected to take advantage of the digital era to strengthen its existence as a superior and quality pioneer, both in the context of the Indonesian nation and in global civilization.

A study conducted by Rila Setyaningsih et al., related to the use of digital media in Islamic boarding schools, shows that the strategy of instilling digital communication ethics at Darussalam Gontor University by utilizing e-learning is carried out based on online Sharia media literacy standards. Seven online Sharia media literacy standards are used as a reference in instilling digital communication ethics in students even though the implementation is not optimal. The seven standards consist of the principles of content production, ethics of information dissemination, guarantees of accuracy and commitment to anti-hoaxes, the spirit of Amar ma'ruf nahi munkar, the principle of wisdom in da'wah, the principle of digital interaction, and the principle of freedom. Learning basic communication science courses e-learning is a means of instilling digital communication ethics to welcome the era of society 5.0 (Setyaningsih et al., 2020a).

The results of research conducted by Setyaningsih et al., (2020b) also further strengthen and emphasize the importance of using digital media among pesantren where the research conveys that there is a creative education model of pesantren through e-learning in the digital era. In general, the phenomenon seems to assume that the attitude of pesantren began to shift from the initial formula of "preserving the good old dimension (of values and traditions) and taking on the new dimension (of values and culture) better" to the new formula "taking a new dimension that is considered better while preserving the old dimension that is still good and relevant".

In pesantren, the great opportunity offered by this era is the opening of information for students to access information and education programs freely. Every student can learn through social media without leaving conventional learning that takes place in pesantren (Nuryadin, 2017). Santri is required to be able to adapt or adjust, so they will not be left behind information. Santri with all its abilities is expected to take advantage of the digital era to strengthen its existence as a superior and quality pioneer, both in the context of the Indonesian nation and in global civilization. This is what needs to be elaborated regarding the pattern of digital media consumption among students and its relevance in the scientific development of students in pesantren. The pattern of digital media consumption greatly determines the pattern of life in the industrial era 4.0, including in the world of scientific development of students in Islamic boarding schools. This is to find the pattern of shifts that occur in pesantren in perceiving and anticipating modernization based on this information technology flow. Therefore, this study focuses on "Digital Media Consumption Patterns in Santri Scientific Development in Central Java Islamic Boarding Schools".

Students' digital media consumption patterns can be analyzed using the theory of Uses and Gratifications. This theory is one of the most famous theories in the field of mass communication. This theory suggests that the main problem is not how the media changes the attitudes and behaviors of audiences, and how much the media can influence and change the attitudes and behaviors of audiences, but rather how the media meets the personal and social needs of audiences and how much the media can meet the personal and social needs of audiences. According to Baran and Davis, the uses & gratifications approach provides an alternative way to look at the

relationship between media content and audience, as well as categorize media content according to its function (Hatamleh et al., 2023; Liu et al., 2023).

METHODOLOGY

Research Design

This research is a type of qualitative field research called field research (J. W. Creswell, 2010), namely by understanding who will directly understand the portrait of students' Digital Media Consumption Patterns in the scientific development of pesantren in Central Java. This research uses an ethnographic approach referred to as thick descriptive (Arikunto, 2010; J. Creswell, 2016; Sugiyono, 2018). This ethnography is used so that the study is natural as original to situations and conditions as well as attitudes, feelings, and behaviors in the field related to students' digital media consumption patterns in the scientific development of pesantren in Central Java. Researchers dive into life in pesantren by taking time to live together for a limited time to get maximum data and analysis. The emic perspective is used to ensure the data are following the circumstances and opinions of research subjects and informants (Denzin, 2010; Denzin & Lincoln, 2011).

Research Site and Participants

This research took place at six Islamic Boarding Schools in Central Java (Indonesia) which are located near universities in Purwokerto and Semarang. Al-Hidayah, an-Najah, and Darussalam Islamic Boarding School are near several universities in Purwokerto. The others are located in Semarang, i.e. Fadlu Fadlan, Wahid Hasyim, and an-Najmah which are near several universities in Semarang. Islamic boarding schools in Semarang represent students in big cities (provincial cities), and urban communities with reputable universities where students study in Islamic boarding schools. Meanwhile, the boarding school in Purwokerto represents students in a small city with its university as well as social and cultural interaction in the southeastern region of West Java.

This research was conducted for approximately five months, i.e. January to May 2022, and focused on the six Islamic boarding schools. Pesantren al-Hidayah is inhabited by students from junior high school to university students whereas Pesantren An-Najah, An-Najmah, Fadlu Fadlan, and Wahid Hasyim are inhibited by university students. Each of those pesantren even develops a website as a means of information systems, allowing students to bring online media devices, such as smartphones and laptops, and at the same time use them as communication tools and social interaction as well as self-development and competence based on online social media.

Thus, it can be drawn from their pattern in consuming and producing social media content. It focuses on (1) the Digital media consumption policy of Islamic boarding school students, (2) types of digital media consumed by Islamic boarding school students, (3) digital media content consumed by Islamic boarding school students, and (4) reasons for choosing the type and content of digital media among Islamic boarding school students.

The data is classified into their scientific motivation, ethos, and responsibility in developing both Islamic and conventional science and information. It elaborated its spectrum with a variety of study program choices along with a multidisciplinary background in absorbing scientific and pesantren values. In addition, it was digging into their readiness to dialogue with various scientific perspectives, cultures, and systems of social interaction.

The aforementioned Islamic boarding schools have the following characteristics. (1) Pesantren Al-Hidayah was established in 1986 by K.H. Dr. Noer Iskandar al Barsyani MA located in Karang Suci (Purwokerto) which is near to Islamic State University of Prof. K.H. Saifuddin Zuhri Purwokerto (UIN SAIZU Purwokerto), General Sudirman University, AMIKOM University, and Wijaya Kusuma University. Recently, it was handled by Mrs. Nyai. Dra. Hj. Nadhiroh Noeris with approximately 700 male and female students and already has thousands of alumni surrounding Indonesia. (2) Pesantren Darussalam was established in 1994 (1415 H) by KH. Drs. Chariri Shofa, M. Ag. Supported H. Djoko Sudantoko, S.Sos., M.M. (former Regent of Banyumas) is located in Dukuhwaluh, Kembaran, Banyumas. Its location is near Muhammadiyah University of Purwokerto, Harapan Bunda University, General Sudirman University, and UIN SAIZU Purwokerto. (3) Pesantren An-Najah is dedicated to university students. It is located at Prompong Kutasari Banyumas (Purwokerto) near to UIN SAIZU Purwokerto, General Sudirman University, AMIKOM University, and Wijaya Kusuma University.

Meanwhile, the other Islamic boarding school in Semarang, (4) Pesantren Luhur Wahid Hasyim established in 2000 is located at Menoreh Tengah II/14, Sampangan, Semarang. It is a partner of Wahid Hasyim University but some students also come from universities surrounding it. It has about 300 male university students. (5) Pesantren Fadhlul Fadhlan was founded by KH Fadholan Musyaffa' and supported by KH. Hashim Muzadi (a former NU Leader), K.H. Maimun Zubair (a pesantren and NU leader in Indonesia), K.H. Muusthofa Bishri (a pesantren and NU leader in Indonesia), and KH. Ahmad Daroji (former chairman of MUI of Jawa Tengah). It is oriented that each student be an intellectual Muslim who acquired the knowledge oriented to benefit the people. (6) Pesantren An-Najma established on August 2, 2017 (9 Dzulqo'dah 1438 H) is located on Jl. Kalimasada Gang Arjuna No.6 Banaran RT. 08/05, Sekaran Village, Gunungpati District, Semarang City. Its location is near to Semarang State University. The Islamic Boarding School established in 2017 recently is comprised of 83 students university.

Data Collection

The data collection techniques used in this study were interviews, observation, and documentation. The interview method is a method of collecting data by communicating directly with resource persons to exchange information and ideas through questions and answers (J. W. Creswell, 1994; Sugiyono, 2018). The interview aimed to collect data about students' digital media consumption, students' scientific traditions, and students' digital media consumption patterns and scientific development. The respondents were the Head of Islamic Boarding School (Kyai), the teachers of Islamic Boarding schools (Ustadz), and the students of Islamic Boarding School. Snowball and random sampling were used to decide the respondents of the interview. A semi-structured interview was conducted in this research by preparing interview guidelines. In ethnographic research, in-depth interviews are developed about the object to be studied. In addition, a non-participatory observation was used in this study. The observation method is a method of collecting data obtained from recording and observing systematically according to what happens to the object of study (Suartama et al., 2020). Observations were made to explore data on students' digital media consumption, students' scientific traditions, and digital media consumption patterns as well as students' scientific development. The observation was conducted 5 days for each Islamic university by observing the students' activities in the Islamic Boarding schools in their several programs. The documentation also used in this study which a method of taking or collecting data from the object of research by obtaining information from various written sources or existing documents. The documents used to complete the data are the Pesantren management structure, pesantren parenting structure, history of pesantren establishment, activity schedule, pesantren program, the learning materials, the social media platform, the social media content, and photos of activities.

Data Analysis

Several stages were conducted to analyze the qualitative data of this research; data collection, data reduction, data display, conclusion drawing, and verification (Miles & Huberman, 1992). Data collection related to the focus of research obtained from the interview method will be tested for validity with data obtained from observation and documentation. Besides, the collected data from interviews, observation, and documentation were reduced according to the framework of analysis. Especially, in this research on digital media consumption patterns among students at Islamic boarding schools in Central Java, data reduction involves sifting through the extensive field notes and interview transcriptions. This step includes identifying relevant information about students' media use, simplifying complex statements, and focusing on key themes such as types of digital media consumed and the reasons behind their preferences. Additionally, in the data display, the reduced data is then organized into charts. For instance, a chart might be created to display the types of digital media used across different boarding schools, allowing patterns to emerge clearly. Graphs could show the frequency of media use or highlight the differences between urban and rural student media consumption. These displays make it easier to identify trends and draw connections between different data points, ultimately facilitating the drawing of justified conclusions. Lastly, conclusion drawing and verification is the final step of data analysis that involves interpreting the data displays to note regularities and patterns in students' digital media consumption. Conclusions might be drawn about the influence of specific types of media on students' academic performance or social interactions. Verification of these conclusions is done by cross-checking with field notes and ensuring

consistency across different data sources. This may involve revisiting the data multiple times and discussing findings with colleagues to develop an intercoder agreement, ensuring the conclusions are robust and valid.

In qualitative research, to test the validity of the data, it uses a triangulation test (Miles & Huberman, 1992). This study used triangulation of methods and sources as a mode of verification. Meanwhile, source triangulation is carried out by testing the validity of data obtained from various sources, namely the head of Islamic boarding school *(kyai)*, teachers *(ustadz)*, and several students *(santri)* of each Islamic Boarding School.

FINDINGS AND DISCUSSION

Digital Media Consumption Policy of Islamic Boarding School Students in Central Java

In general, the findings of six Central Java Islamic boarding schools that were used as informants in the study showed that none of the Islamic boarding school caregivers prohibited their students from using digital media. K.H. Moh. Roqib added that the foundation that became the direction of the development of Pesantren An-Najah was Wasatiyah Islam which refers to Walisongo's da'wah but without leaving the times. Evidence of the use of digital media at An-Najah can be seen from learning that utilizes Zoom meeting media when the speaker cannot be present at the pesantren location. K.H. Moh. Roqib, who is also the Rector of UIN Prof. K.H. Saifuddin Zuhri Purwokerto, explained that during his busy life as the rector and caregiver of An-Najah when carrying out out-of-town services and was scheduled to fill in the learning at the cottage, he did it virtually through a zoom meeting.

Different things are found in the Fadlul Fadlan Islamic Boarding School Semarang which both do not prohibit the use of digital media among students but with proper time management. K.H. Fadholan as the caretaker of the Islamic boarding school emphasized that he did not prohibit students from using digital media but a firm warning from him that time management of digital media use must be considered. Do not neglect other obligations. In addition, the use of digital media must also be directed at positive things to enrich information and develop science, not vice versa digital media is used to degrade morals.

Different policies related to the use of digital media among Central Java Islamic boarding school students are also seen at the Al Hidayah Purwokerto Islamic Boarding School which expressly allows students to bring mobile phones as a means of accessing digital media when they have passed BTA-PPI (Competent-Test on Reading and writing Arabic and Practicing Islamic Services) or there is a certificate from the university for the use of these digital media facilities. This began with a case in the form of the use of digital media that is not in place and should not be accessed by students.

The various findings mentioned above illustrate that Islamic boarding schools in Central Java in which there are students provide policies to students to utilize and utilize digital media as a means of communication and scientific development. The emphasis and affirmation of each of these policies is on morals/moral values that the use of digital media must always be accompanied by good morals so that its use is also for good things (Burr et al., 2020; Klenk, 2021; Reisach, 2021).

Types of Digital Media Consumption of Islamic Boarding School Students in the Central Java Region

Based on the type, the digital media used by students include: *Firstly,* **social media,** it is used by the Islamic Boarding School students to communicate privately or in groups with friends and to share any information. The social media accessed by the students are Facebook, Instagram, WhatsApp, Twitter, Line, and Wechat. In addition to the consumption of their personal accounts, they also follow the accounts of their idols, such as the Instagram of pesantren caregivers, *gus-ning* pesantren accounts, and student or pesantren communities including Gus Mus Instagram account (GusMus Channel), Habib Husen (husen_hadar), and AISNU.

Second, **websites,** blogs or scientific journals are used by the students, because they provide online information with the best writing loading, namely the latest writing is on the front page. Access more student websites to pesantren websites. In addition to students consuming these media, they also participate in producing information content on the website. In addition to pesantren websites, students access community-based websites including fiqih.id, Neswa.id, and Pesantren.id. (Interview: Nabila). Fiqih.id try to be present through

the study of one of the Islamic sciences, namely *fiqh* which is packaged as simply as possible. In addition, the purpose of fiqh.id is to present worship as something easy. The study of *fiqh* here is also developed according to the conditions of society (Hamid, 2021, p. 131).

Third, **Youtube** is the social media most often used by students. Youtube contains various kinds of content both religious, social, health, and thoughts in general. From santri also has their youtube account that is managed privately. Youtube is more widely used by students because it presents content. In consuming YouTube, sometimes students follow directly and sometimes not. Living consumption is used by students to be able to ask directly about the problems they face in society. Mina Arifah, a student of Pesantren an-Najma said.

I often go through YouTube following Women's jurisprudence studies. Because at the cottage there is no special ngaji about it. There I can ask questions directly. In addition to live youtube, sometimes I also follow Instagram live.

Fourth, E-**learning** is used by students during lectures, especially during a pandemic. Online discussion areas, often on specific topics and interests. Forums emerged and are a strong and popular element of online communities. From various digital media, below is the percentage of digital media use for students in Islamic boarding schools. Central Java region.
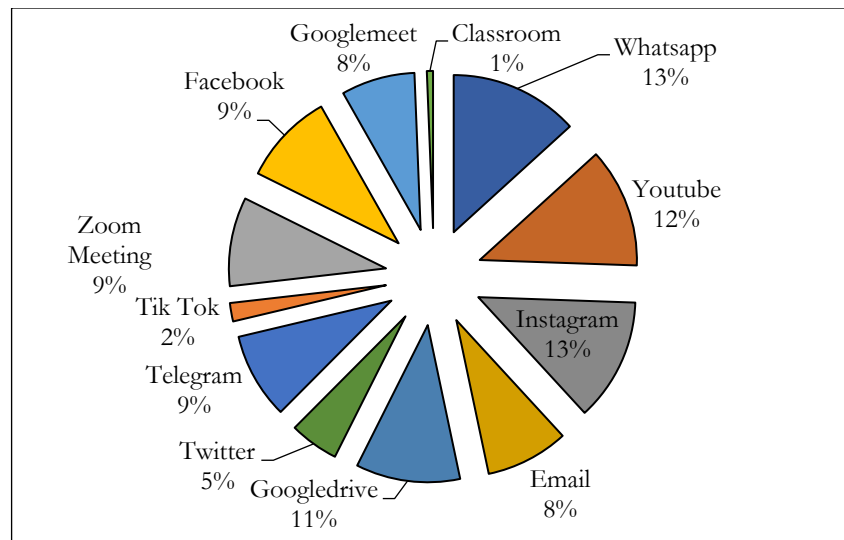

Figure 1: Percentage of Digital Media Usage of Santridi Pesantren in Central Java

From the figure 1., it can be seen that digital media is more widely used by students, namely WhatsApp by 13%, Instagram by 13% and Youtube by 12%. The choice of media is because it is considered more affordable and provides many benefits. Social media seems to have become an "opium" for students. Within a day, YouTube usage among students reaches two to three times with accumulated time duration ranging from two to three hours. While in the use of WhatsApp, on average they post two status posts that have scientific nuances. Other social media such as facebook, twitter, line, and the like they also use, although rarely.

Digital Media Consumption Content of Islamic Boarding School Students in Central Java

Changes in technology have led to the emergence of many options for audiences to freely consume diverse programs and content. The development of industry 4.0 changes old values into new values that encourage various innovations that can facilitate society towards better educational changes (Anwar, 2017). Digital media with all its benefits and madharat presents various types of content, ranging from educational content to entertaining content. Below are field findings that describe the statistics of digital media content consumed by Islamic boarding school students in Central Java, as follows:
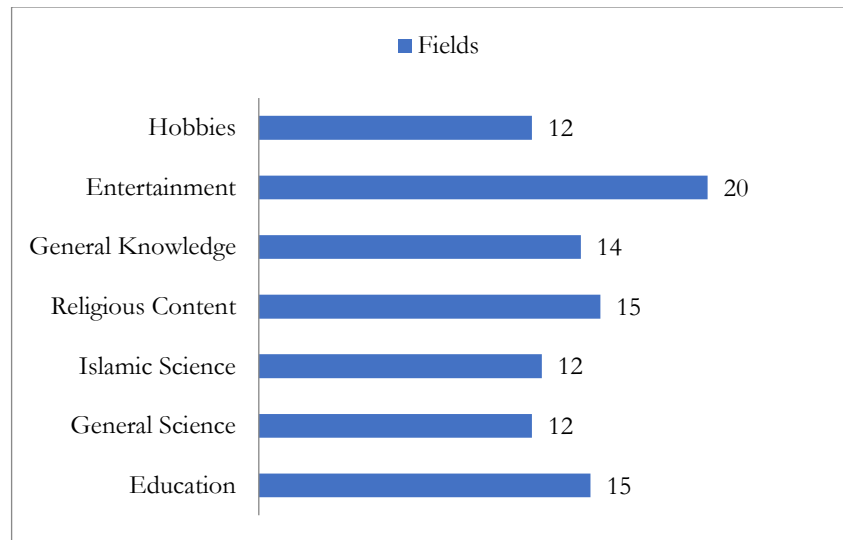
Figure 2: Santri Digital Media Consumption Content Statistics Islamic Boarding Schools in Central Java

Figure 2 shows the percentage of content that students consume through digital media. The first rank is occupied by entertainment content at 20%, then religious content and educational content are ranked second with a percentage of 15% each. General knowledge content came in fourth with a percentage of 14%. The content of hobbies, Islamic science, and general science is each at a percentage of 12%.

From the percentage of digital media content accessed by students, it is illustrated that Islamic scientific content is not excellent in seeking information through digital media, but religious content in general dominates more than entertainment content which turns out to occupy the top position. The difference in the percentage of selection of the type of content chosen by students certainly cannot be separated from the needs and types of digital media consumed as a result of technological developments and changes. Nicolaou (2021) points out that the trends and prospects of digital media as educational activities and techniques must always be taken into account by educational managers and educators, in order to maintain a quality and sustainable future education.

The Rationality of Choosing the Type and Content of Digital Media for Islamic Boarding School Students in Central Java

Social media is now familiar to society, almost every individual knows and uses social media. The easier a technology is gadgets that will cause someone to behave with new certain characters in recent times (Musyaffi et al., 2016). The use of gadgets in the pesantren environment, one of which is to meet the needs of students in terms of communication. Gadgets are not only used as telephone communication tools but gadgets also have applications that make it easier for students to obtain information from outside such as gadgets equipped with internet applications, games, and other advanced features.

Alternatives that can be taken by the lodge to improve student professionalism in developing their knowledge include (1) principles of cottage life, (2) neat organizational management, (3) education and learning system, (4) cottage curriculum, (5) provision of various skills for students (Qomar, 2003, pp. 80–83). Among these ways, students' scientific professionalism can also be developed through their role on social media.

Digital media can open a wider horizon for students, especially in addressing issues that are being hotly discussed. With the existence of online media, public issues do not become private domain (private talk) but are discussed and then solutions to the problem are sought (Lestari et al., 2017, pp. 149–160). For instance, this was conveyed by one of the students of Fadhlu Fahlan Islamic Boarding School.

In choosing social media, I take it from my kiai and Pesantren media first. After that, I will grab content from channels that agree with me. If there is a channel passing by on my homepage, I am often curious. Who is this sich, how come there is this news? So. If it's clear the theme is interesting, I'll move on, but if the theme isn't interesting, I ignore it.

In this sense, digital media consumption creates new scientific authorities, so these authorities need to be held accountable for their credibility. Although the consumption of digital media seems easy, students should make their effort to gain a good understanding of religion. Scientific content produced by students through social media consumption is a manifestation of student identity. Student professionalism is evident in that students do not send content at will. They crosscheck and look for the source of what they have concluded.

Along with the times, social media has been much favored by teenagers, adults, and students. The existence of social media for students of As-shomadiyah Islamic Boarding School can develop their religious knowledge and can add wider general knowledge. Santri Pondok Pesantren As-shomadiyah has many who have social media such as Facebook, BBM, and others. Their purpose in having social media is to find friends from the world outside the pesantren, communicate with old friends, and find information about religious science by creating statuses or articles about religious science through Facebook.

Researchers also see that there is a positive side to Facebook use because student behaviors such as gadget use can provide students an effort to increase students' insight into science and religion so that students can balance knowledge with religion by looking at alumni groups that students do not understand. Not only that, researchers also see that the impact of gadgets on student behavior is that they can make students able to develop their potential in preaching, through Facebook, blogs, and so on.

From the point of view of this expediency, the rationality of choosing the type and content of student digital media can be seen. The diverse needs of student digital media in addition to being a medium of communication are also used as a means of finding information and religious sciences become a separate authority among students. Digital media with its various functions when in the hands of students, it will be something new as proof that in addition to students being able to adapt to technological developments, students are also able to reposition and multiply digital media into a means of da'wah through cyberspace and improving religious knowledge. The above can be seen from the results of a survey to students in Central Java Islamic boarding schools regarding the intensity of access to Islamic nuanced digital media content as follows.
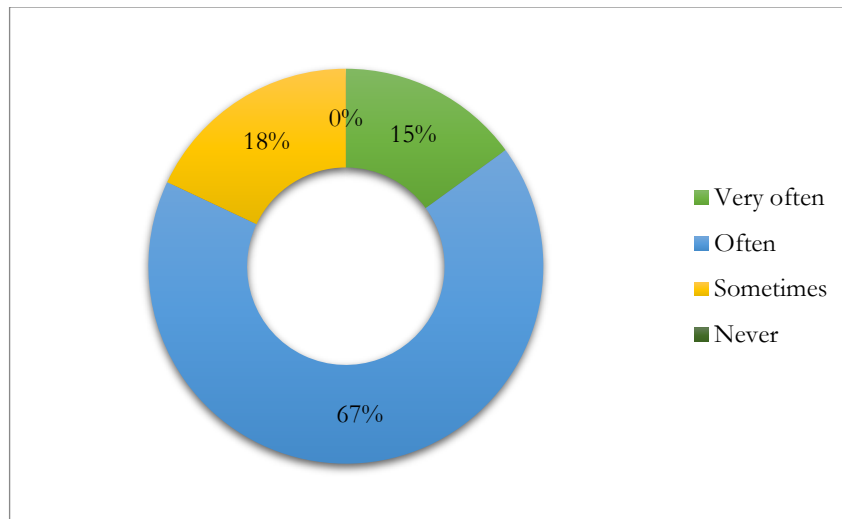

Figure 3: The intensity of access to Islamic digital media by students in Central Java Islamic boarding schools

From the survey, it can be seen that 67% of students often, 15% very often, and 18% sometimes access digital media with Islamic religious content. There is not a single student who has never accessed Islamic religious content at all or at 0%. This further strengthens the rationality of choosing digital media content for students with Islamic religious material as frequently visited content to strengthen student scholarship.

DISCUSSION

Digital Media Consumption Patterns of Pesantren Students

According to Fuchs et al. (2021), consumption is defined as the activity of using services or goods to meet the needs of life. Consumption is also defined as all uses of goods or services (Todaro, 2002, p. 213). Consumption activities are carried out by everyone to get satisfaction and achieve welfare, namely by meeting various kinds of needs, both primary and secondary. Consumption activities cannot be separated from consumers, namely every user of goods or services (www.gramedia.com). Digital media is media that is presented online on an internet website (website). In general and basic, digital media is any type of media accessible only to the internet that contains text, photos, videos, and sounds. Digital media can also be interpreted as a means of online communication. (Pamuji, 2019, p. 114).

The development of the digital world has entered almost all segments of life, including students. Currently, the use of digital media in education is a necessity. Even social media has become a smart instrument to access information quickly and easily. Therefore, pesantren as educational institutions as well as teachers and students as educational subjects always adapt in the face of the rapidly developing digital world. In this context, the use of social media among pesantren shows interesting data. The following is data on student digital media consumption.

In this context, social media consumption is not only in the fields of communication, business, or entertainment, but social media consumption also aims at student scientific development. There has been a lot of scientific content created by social media users so that knowledge about Islam is not left behind with general knowledge, such as lecture videos of famous *ustadz-ustadz,* inspirational videos, Islamic studies, photos that contain lesson values even to the world of animation. Supporting facilities to improve students' religious understanding in the current era are not only obtained through *ustadz* or classroom learning. In an age where information can be found easily, it is just enough to access through social media.

The great opportunity offered by this era is the opening of information for students to access information and educational programs freely. Every student can learn through social media without leaving conventional learning that takes place in pesantren (Nuryadin, 2017, p. 212). Santri is required to be able to adapt or adjust, so they will not be left behind information. Santri with all its abilities is expected to take advantage of the digital era to strengthen its existence as a superior and quality pioneer, both in the context of the Indonesian nation and in global civilization (Dewi, 2019, pp. 40–41).

Regarding student science, the increase in internet and social media users makes religious references more open. Although the main reference for students is kiai, students also develop their knowledge through digital networks. Based on the theory of Uses and Gratifications, the scientific development of students is influenced by social and psychological conditions that will cause the need for social media. Where this will result in the fulfillment of needs and other consequences. (Humaizi, 2018, p. 9). Student needs for social media content as scientific development can be grouped into three, namely: 1) Cognitive needs; 2) Affective needs; 3) Personal integrative needs.

Firstly, **cognitive needs** are related to the fulfillment of information, knowledge, and understanding of what is around him. Santri who incidentally are students always need information that supports their knowledge in pesantren and also in lectures. Renald Kasali's opinion as quoted by (Purnomo, 2020, pp. 54–64) suggests that for Islamic education to be able to adapt and have competitiveness, there need to be three efforts, namely: disruptive mindset, self-driving, and reshaping or creating. Student activities in Islamic boarding schools are not only about worship, reading, and learning knowledge in formal educational institutions because they also need information through the development of social media in the digital world (Ju'subaidi et al., 2024; Saputra et al., 2020; Us et al., 2023).

Secondly, **affective needs** are related to pleasant experiences and evoke emotions. This need can raise students' enthusiasm and confidence. Third, personal integrative needs. This has led to the need for students to document their archives. In this case, the archive becomes a character that explains that the information has been stored and can be accessed at any time. For example, information in the form of text, images, or videos uploaded on

social media will not disappear when changing weeks, months, or years. The information will be saved, and can even be easily accessed again. (Interview: Qorida).

By their needs, students will actively use media as a means of achieving the goals of using social media (Lacka et al., 2021; Van Den Beemt et al., 2020). So students can choose and control what info and content they will consume. Santri can also choose what menu he is interested in. So in this case, the formation of student behavior is not determined by social media but is determined by students' needs and interests in social media.

Impact of Digital Media Consumption Patterns on Santri Pondok Pesantren

New Scientific Authority

The era of the Industrial Revolution 4.0 brought significant changes. People are exposed to media very easily regardless of age and geographical boundaries. The Industrial Revolution 4.0 is defined as a total change in the field of production where the Internet becomes the core driving force (Prasetyo & Sutopo, 2018, p. 19). The consumption of student digital media has an impact on the formation of new scientific authorities. Previous research said that along with the development of information technology, the internet has faded traditional religious authority and shifted to impersonal media, such as books, websites, blogs, and the like (Jinan, 2013, pp. 321–348). In this study, the formation of new authorities does not necessarily fade away and replace traditional authorities. But how the map of the authority of religious sources, which originally came only from a *kiai, ulama', murshid,* and *ustadz,* developed in the creation of a new religious authority through social media.

Student digital media consumption does not stop at their intellectual development, students also actively share what they have gained. Often what they understand, they convey through WhatsApp and Instagram statuses. In addition, students also become a scientific link from social media to other social media, from group to group. Santri as the millennial generation is the main actor of change who can create new spaces and facilitate spiritual interaction, so it becomes a da'wah strategy in the digital era.

Pondok implements da'wah strategies by utilizing social media such as Instagram and Youtube which are packed with the latest trends in the form of images and videos targeted at millennials, this is done because of the increasing prevalence of social media accounts that tend to be radical. New media brought fundamental changes in the religious life of society.

Digital Literacy Development

The main challenge of students' digital media consumption is how students also have good digital literacy skills. Technological literacy and politeness alone are not enough, another tough task for a student is to be the spearhead in literacy affairs. What they will convey cannot be separated from their digital literacy skills. Digital literacy skills are intended to offset and combat systematic attempts to spread hoax news, which are deliberate by certain groups.

Reading carefully is one of the main assets of being a media-savvy student. Because, in literacy, there is a value of verifying news content. From this verification, it will give birth to whether the news content is valid or a hoax. The verification steps are: First, cross-check the news. Whether the information is sourced from credible, competent, and independent media. At its peak, verification will lead to sorting out fake news. Second, it is critical of the media. Indonesia has enjoyed reform and democratization of the press and broadcasting since 1998 (Masduki, 2020). The Indonesian mass media rejoiced. No more censorship and oppression (although there is now an ITE Law). Press companies no longer require permits. Along with the proliferation of online and other media, junk information is hanging around. Blaspheming each other here and there. Attacking groups of each other became a common phenomenon, resulting in media warfare. Therefore, student scientific development through digital media will also be directly followed by the development of student digital literacy.

CONCLUSION

The pattern of digital media consumption in student scientific development is analyzed using the theory of Uses and Gratifications. The digital media intended in this study is social media accessed by students. Based on the research conducted, the study found two conclusions by the formulation of the problem studied. First, the

pattern of digital media consumption of Islamic boarding school students in the Central Java region. Based on the theory of Uses and Gratifications, students' social media consumption patterns are influenced by social and psychological conditions that will lead to the need for social media. Student needs for social media content as scientific development can be grouped into three, namely: 1) Cognitive needs; 2) Affective needs; and 3) Personal integrative needs. By these needs, students will actively use the media as a means of achieving goals. So students can choose and control what info and content they will consume. Among the social media accessed by yani students are social networks, Blogs or the like, Youtube, and E-learning.

Second, the impact of digital media consumption patterns in the scientific development of students in the Central Java region is the birth of a new adaptive religious scientific authority, namely the ability of students to adapt to technological developments through digital media consumption with religious-modernist content and reproduction, namely the ability of students to package and distribute religious content through digital media as a means of developing Islamic science.

REFERENCES

Anwar, M. A. (2017). Manajemen Kelembagaan Pondok Pesantren: Strategi dan Pengembangan di Tengah Modernisasi. Yogyakarta: Pustaka Ilmu.

Arikunto, S. (2010). Prosedur Penelitian: Suatu Pendekatan Praktik (Revisi 20). Rineka Cipta.

Burr, C., Taddeo, M., & Floridi, L. (2020). The Ethics of Digital Well-Being: A Thematic Review. Science and Engineering Ethics, 26(4), 2313–2343. https://doi.org/10.1007/s11948-020-00175-8

Creswell, J. (2016). Research design: qualitative, quantitative, and mixed methods approaches. Yogyakarta: Penerbit Pustaka Belajar.

Creswell, J. W. (1994). Research Design: Qualitative and Quantitative Approaches. SAGE Publications.

Creswell, J. W. (2010). Research Design Pendekatan Kualitatif, Kuantitatif, dan Mixed. Pustaka Belajar.

Denzin, N. K. (2010). Moments, Mixed Methods, and Paradigm Dialogs. Qualitative Inquiry, 16(6), 419–427. https://doi.org/10.1177/1077800410364608

Denzin, N. K., & Lincoln, Y. S. (2011). The Sage Handbook of Qualitative Research. SAGE.

Dewi, N. F. (2019). Strategi Pengawasan dan Penanganan Pembiayaan Murabahah Guna Meminimalisir Resiko Pembiayaan Bermasalah (Studi Pada Baitul Maal Wa Tamwil Pahlawan Tulungagung) [S1 Thesis, UIN Sayyid Ali Rahmatullah Tulungagung]. http://repo.uinsatu.ac.id/11438/

Fuchs, D., Sahakian, M., Gumbert, T., Giulio, A. Di, Maniates, M., Lorek, S., & Graf, A. (2021). Consumption Corridors. Routledge. https://doi.org/10.4324/9780367748746

Hamid, A. (2021). Literasi Digital Santri Millenial. Jakarta: Elex Media Komputindo.

Hamid, A., Al Watsiqoh, M. H., Abdullah, M. K., & Hafiyusholeh, M. (2024). Literasi Digital Santri Milenial: Studi Kasus Pondok Pesantren Tahfidzul Quran Al-Jihadul Chakim Mojokerto. TADRIS: Jurnal Pendidikan Islam, 19(1), 89–100.

Hatamleh, I. H. M., Safori, A. O., Ahmad, A. K., & Al-Etoum, N. M. I. (2023). Exploring the Interplay of Cultural Restraint: The Relationship between Social Media Motivation and Subjective Happiness. Social Sciences, 12(4), 228. https://doi.org/10.3390/socsci12040228

Humaizi, H. (2018). Uses and Gratifications Theory. Medan: USU Press.

Istrate, R., Tulus, V., Grass, R. N., Vanbever, L., Stark, W. J., & Guillén-Gosálbez, G. (2024). The environmental sustainability of digital content consumption. Nature Communications, 15(1), 3724. https://doi.org/10.1038/s41467-024-47621-w

Jinan, M. (2013). Intervensi New Media dan Impersonalisasi Otoritas Keagamaan di Indonesia. Jurnal Komunikasi Islam, 3(2), 321–348. https://doi.org/10.15642/jki.2013.3.2.321-348

Ju'subaidi, Mujahidin, A., Abdullah, I., & Choirul Rofiq, A. (2024). Students' critical awareness of the internet and social media use as resources for Islamic learning in Indonesian public senior high schools. British Journal of Religious Education, 1–16. https://doi.org/10.1080/01416200.2024.2368888

Klenk, M. (2021). How Do Technological Artefacts Embody Moral Values? Philosophy & Technology, 34(3), 525–544. https://doi.org/10.1007/s13347-020-00401-y

Kuncorojati, C. (2021). Tren Konsumsi Berita Generasi Muda: Begini Pola Konsumsi Konten di tahun 2021. Humas Indonesia; Humas Indonesia. https://www.medcom.id/teknologi/news-teknologi/Rb1mMWAb-begini-pola-konsumsi-konten-di-tahun-2021

Lacka, E., Wong, T. C., & Haddoud, M. Y. (2021). Can digital technologies improve students' efficiency? Exploring the role of Virtual Learning Environment and Social Media use in Higher Education. Computers & Education, 163, 104099. https://doi.org/10.1016/j.compedu.2020.104099

Lestari, Y., Yulia, V., & Puspita, Y. (2017). Pola Konsumsi Media dan Kaitannya dengan Partisipasi Masyarakat pada Isu-Isu Publik di Kota Padang. Jurnal Penelitian Komunikasi, 20(2), 149–160. https://doi.org/10.20422/jpk.v20i2.190

Liu, C., Sun, K., & Liu, L. (2023). The Formation and Transformation Mechanisms of Deep Consumer Engagement and Purchase Behavior in E-Commerce Live Streaming. Sustainability, 15(7), 5754. https://doi.org/10.3390/su15075754

Mahoney, L. M., & Tang, T. (2024). Strategic Social Media: From Marketing to Social Change (Second). John Wiley & Sons.

Masduki. (2020). Reforming Indonesian Broadcasting System (1998–2002). In Public Service Broadcasting and Post-Authoritarian Indonesia (pp. 169–232). Palgrave Macmillan, Singapore. https://doi.org/10.1007/978-981-15-7650-8_5

Maulida, S. (2021). Pola Konsumsi Masyarakat dalam mengakses Berita Saat pandemic. Bpptik Kominfo; BPPTIK Kominfo. https://bpptik.kominfo.go.id/2021/07/23/9088/pola-konsumsi-masyarakat-dalam-mengakses-berita-saat-pandemi/

Miles, M. B., & Huberman, A. M. (1992). Analisis Data Kualitatif. Jakarta: Universitas Indonesia Press.

Musyaffi, A. M., Muna, A., & Fariani, N. (2016). Pengaruh Persepsi Kemudahan dan Persepsi Kegunaan Terhadap Penerimaan Pengguna Sistem Informasi Akademik Terpadu. JRAK: Jurnal Riset Akuntasi Dan Komputerisasi Akuntansi, 7(2), 71–82. https://jurnal.unismabekasi.ac.id/index.php/jrak/article/view/744

Nicolaou, C. (2021). Media Trends and Prospects in Educational Activities and Techniques for Online Learning and Teaching through Television Content: Technological and Digital Socio-Cultural Environment, Generations, and Audiovisual Media Communications in Education. Education Sciences, 11(11), 685. https://doi.org/10.3390/educsci11110685

Nuryadin, N. (2017). Strategi Pendidikan Islam di Era Digital. FITRAH: Jurnal Kajian Ilmu-Ilmu Keislaman, 3(1), 209–226. https://doi.org/10.24952/fitrah.v3i1.637

Pamuji, E. (2019). Media Cetak Vs Media Online. Surabaya: Utomo Press.

Permpoonputtana, K., Doungsri, J., Kunwittaya, S., Khamnong, T., & Kleebpung, N. (2024). Digital Media Consumption Patterns and Development of Preschool Children: Developing a Manual to Enhance Media Literacy in Parents of Children Facing Developmental Challenges. Natural and Life Sciences Communications, 23(3). https://doi.org/10.12982/NLSC.2024.043

Prasetyo, H., & Sutopo, W. (2018). Industri 4.0: Telaah Klasifikasi Aspek dan Arah Perkembangan Riset. J@ti Undip : Jurnal Teknik Industri, 13(1), 17. https://doi.org/10.14710/jati.13.1.17-26.