Exploration of Technology Transformation-Based Learning Experiences and Higher Education Leadership

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	Abstract
Keywords: Technology; Learning; Higher Education; Management; and University.	An overview of the management of technology-based higher education and digital applications in an era that is now increasingly developing is becoming a critical study. For this reason, we conducted several interviews with more of the supervisors at Bontang University. Then we also believe in studying some of the scientific evidence that has raised technology-based education in tertiary institutions, which we then examine by involving various techniques such as data coding, and in-depth data interpretation to get answers as valid and reliable study findings. After going through a series of discussions and reviewing the results of interviews and other scientific evidence, it can be concluded that a review of technology-based education governance is a critical study considering that there are still many universities that have not fully opened their doors to technology-based teaching for management reasons and other limitations. These findings will be valuable insights for developing similar research in the future.
	Abstrak
Kata kunci: *Teknologi; Pembelajaran; Pendidikan Tinggi; Manajemen Pendidikan; Universitas.*	*Tinjauan tentang pengelolaan pendidikan tinggi berbasis teknologi dan aplikasi digital di era yang kini semakin berkembang menjadi kajian kritis. Untuk itu kami melakukan beberapa wawancara dengan salah satu dosen pembimbing di Universitas Bontang. Kemudian kami juga meyakini dengan mengkaji beberapa bukti ilmiah yang telah mengangkat pendidikan berbasis teknologi di perguruan tinggi, yang kemudian kami kaji dengan melibatkan berbagai teknis seperti koding data, interpretasi data secara mendalam untuk mendapatkan jawaban sebagai temuan kajian yang valid dan reliabel. Setelah melalui serangkaian diskusi dan menelaah hasil wawancara dan bukti-bukti ilmiah lainnya, dapat disimpulkan bahwa tinjauan tata kelola pendidikan berbasis teknologi merupakan kajian kritis mengingat masih banyak perguruan tinggi yang belum membuka pintu sepenuhnya pada pengajaran berbasis teknologi dengan alasan manajemen dan keterbatasan lainnya. Kami berharap temuan ini akan menjadi wawasan yang bermanfaat untuk pengembangan penelitian serupa di masa depan.*

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INTRODUCTION

Education works to transfer information to other people or, in general, to get information useful for human life and everyone around it.[1] Nothing can take away from people the stability that education provides in life. People can open new doors for themselves and increase their chances of better career opportunities by having a college degree. Education is also an effort to pass on knowledge and life skills learned in formal education, such as schools or colleges, religious schools, and changes learned from family and society.[2] Until then, his education was beneficial in his present and future life. The complete growth of an individual is the primary goal of higher education.

Moreover, education is a natural source of profit for a more fulfilling and enlightening life. Education has the potential to improve society as a whole. It creates a society where people are aware of their responsibilities and rights. The real value of life lies in enriching the mind by providing information that allows individuals to make the right decisions. He did this, knowing full well what was going to happen. Examining what follows the needs of the times is very important, especially in an era where digital transformation has not yet become an inseparable part, whether given publicly or privately so that the education he receives at the University of Bontang is precious to keep up with the developments and demands of the times. According to Siswanto, discussions, and studies on technology-based Islamic education continue to be encouraged in Indonesia. This study focuses on efforts to revive the discussion of technology-based Islamic education in Islamic boarding schools in the era of the technological revolution.[3]

The increasingly sophisticated provision of facilities that facilitate learning demonstrates the widespread application of technology in education and other businesses in this increasingly modern era of globalization.[4] This is where it becomes

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[1] Eraut, M., *1 Transfer of Knowledge between Education and Workplace Settings. Knowledge, Values and Educational Policy (Pp. 75–94) Routledge.*, 2012. Purniadi Putra et al., "The Students Learning from Home Experiences during Covid-19 School Closures Policy In Indonesia," *Jurnal Iqra' : Kajian Ilmu Pendidikan* 5, no. 2 (September 5, 2020): 30–42, https://doi.org/10.25217/ji.v5i2.1019.

[2] Prasetyo, I., Suryono, Y, and Gupta, S., *The 21st-Century Life Skills-Based Education Implementation at the Non-Formal Education Institution. Journal of Nonformal Education, 7(1), 1-7.*, 2021. Amat Suroso et al., "Challenges and Opportunities towards an Islamic Cultured Generation: Socio-Cultural Analysis," *Linguistics and Culture Review* 5, no. 1 (June 28, 2021): 180–94, https://doi.org/10.37028/lingcure.v5n1.1203. Prasetyono Hendriarto et al., "Understanding the Implications of Research Skills Development Framework for Indonesian Academic Outcomes Improvement," *Jurnal Iqra' : Kajian Ilmu Pendidikan* 6, no. 2 (July 15, 2021): 51–60, https://doi.org/10.25217/ji.v6i2.1405.

[3] Siswanto, S., *The Quality Management of Islamic Boarding Schools Based on Information Technology in the 4.0 Industry Era. Ijtimāiyya: Journal of Muslim Society Research, 5(1), 37–46.*, 2020. Aslan Aslan et al., "Teacher's Leadership Teaching Strategy Supporting Student Learning During The Covid-19 Disruption," *Nidhomul Haq : Jurnal Manajemen Pendidikan Islam* 5, no. 3 (November 21, 2020): 321–33, https://doi.org/10.31538/ndh.v5i3.984.

[4] Raja, R., and Nagasubramani, P., *Impact of Modern Technology in Education. Journal of Applied and Advanced Research, 3(1), 33-35.*, 2018. Sudarmo Sudarmo et al., "The Future of Instruction Media in Indonesian Education: Systematic Review," *AL-ISHLAH: Jurnal Pendidikan* 13, no. 2 (August 31, 2021): 1302–11, https://doi.org/10.35445/alishlah.v13i2.542. Purniadi Putra et al., "The Relevancy on Education Release Revolution 4.0 in Islamic Basic Education Perspective in Indonesia (An Analysis Study of Paulo Freire's Thought)," *Test Engineering & Management* 83 (2020): 10256–63.

critical to keep up with technological advancements that make life and business easier for everyone. It has been demonstrated that using technology in the education sector increases children's interest in learning due to the more appealing display of technology, which prevents boredom during lessons. Most educational institutions still require technology.[5] If higher education in Indonesia is to be transformed by the role of technology in education, education has arrived at the right time. The advantages of incorporating technology into Islamic religious education will be discussed in greater detail in our evaluation. According to Tolchah & Mu'ammar, the term "application of technology in Islamic boarding school education" refers to putting cutting-edge technology to enhance the quality of education, particularly in terms of effectiveness, optimality, and educational innovation.[6]

When pesantren is no longer associated with anti-modernism education, this is a methodical approach to conceptualizing and evaluating the learning process and assisting in implementing the most current educational teaching methods. The term "technology" comes from the Greek words "techno," which means will, skill, knowledge of ways, rules, skills, tools, and "logos," which means knowledge, word, learning, and mental state. Bartlett,[7] says that educational technology is used in various ways. Most of the differences between all life solutions can be attributed, rather than to actual pedagogical application, to the approach to technical characteristics and the utilization of modern tools. According to Buabeng-Andoh[8], the lack of application of technology in higher education is primarily attributable to the issue of inadequate teacher qualifications for the implementation of these funds as well as the lack of resources for the necessary school equipment.

There are three uses of technology in higher education, namely as follows: technology as a tool for teaching religious content, technology as a learning and evaluation tool, and the computer functions as a tutor and provides instructions to users. When utilizing technology in education, humans must concentrate on the tools and value of educational applications, the extent to which they assist in the acquisition of knowledge, the extent to which users interact with the tools, and the extent to which Islamic boarding schools benefit from using technology in the teaching environment of university students.[9]

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[5] Arici, F., Yilmaz, R. M., and Yilmaz, M, *Affordances of Augmented Reality Technology for Science Education: Views of Secondary School Students and Science Teachers. Human Behavior and Emerging Technologies, 3(5), 1153-1171.*, 2021.

[6] Tolchah, M., and Mu'ammar, M. A., *Islamic Education in the Globalization Era. Humanities & Social Sciences Reviews, 7(4), 1031-1037.*, 2019.

[7] Bartlett, J., *The People vs. Tech: How the Internet Is Killing Democracy (and How We Save It) Random House.*, 2018.

[8] Buabeng-Andoh, C., *Factors Influencing Teachersâ Adoption and Integration of Information and Communication Technology into Teaching: A Literature Review. International Journal of Education and Development Using ICT, 8(1)*, 2012.

[9] Halik, A., *The Paradigm of Islamic Education in the Future: The Integration of Islamic Boarding School and Favorite School. Information Management and Business Review, 8(4), 24–32.*, 2016. Aslan Aslan, "Relevancy Of

As we stated above, technology research in tertiary institutions such as Bontang University aims to inform the views and experiences of lecturers and students to become new experiences in terms of the use of technology in teaching. Therefore, our research must contextualize its findings in a larger body of research and can benefit other tertiary institutions. We realize that studies must generate new, high-quality understandings that can be applied elsewhere. Research on the application of technology in teaching is timely and essential to attract attention, leading to greater visibility and reputation of other institutions. As a university known for its research in teaching, Bontang University will later become a magnet for students, faculties, grants, media coverage, and philanthropy. This kind of research helps lecturers focus on one aspect of their practice that they want to improve. Specific questions and limited periods bind each literacy. Research in teaching and technology at the tertiary level is essential because it contributes to knowledge and understanding of technology-based teaching. This study also contributes to developing critical new technologies in teaching and technology, resulting in the formation of conclusions, the application of findings into broader university applications, and the formation of new research questions.

Traditional methods dominate the teaching process because computers still need to be widely used in many schools. Frontal work dominates when the teacher frequently interacts with the students.[10] This kind of education has drawbacks, including students needing to develop at their own pace and needing more student involvement. We need to pay more attention to students above average and those who could be better versed in the subject matter in the classroom because there are students whose knowledge is different. Assessing the teacher's work and transferring knowledge to a group of children with different levels of knowledge frequently limit this difference. Children who lack the necessary knowledge will not receive it because teachers maintain a high teaching average. According to Lazar,[11] teaching the most advanced children will be boring, whereas children with less knowledge can develop without experiencing unpleasant feelings due to their ignorance, frustration, or humiliation.

Digital transformation is a reality that must be faced, as shown by the pandemic that has occurred since the beginning of 2020. Online learning should replace face-to-face learning in all educational institutions, from early childhood to secondary and higher education. In this case, digital transformation is seen as the application of revolutionary technology to increase higher education institutions' range or output performance, including the University of Bontang Kalimantan. Naturally adaptable for university preparedness.[12] However, many universities need to be more organized; in

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Research Evidence With The Success Of Alquran Memorising: Young Hafiz Motivational Approach," *Jurnal Ilmu Pendidikan Islam* 20, no. 1 (June 30, 2022): 1–26, https://doi.org/10.36835/jipi.v20i1.3929.

[10] Zhao, J., Xu, X., Jiang, H., and Ding, Y., *The Effectiveness of Virtual Reality-Based Technology on Anatomy Teaching: A Meta-Analysis of Randomized Controlled Studies. BMC Medical Education, 20(1), 1–10.*, 2020.

[11] Lazar, S., *The Importance of Educational Technology in Teaching. International Journal of Cognitive Research in Science, Engineering and Education, 3(1), 111–114.*, 2015.

[12] Gordon Fletcher and Marie Griffiths, "Digital Transformation during a Lockdown," *International Journal of Information Management*, Impact of COVID-19 Pandemic on Information Management Research

other words, they are not ready for the transformation of education from the conventional way to the way western universities work, pioneered in the USA and Europe. One way for educational institutions, especially private universities, to survive in the post-pandemic period and beyond is to be technologically prepared. The higher education sector will experience changes due to several megatrends. Examples of aspects of this megatrend, namely recent trends that have changed on a global scale, include the rise of democratization of knowledge and access, the importance of integrating education with industry, increasing global mobility, increasing competition, and digital transformation.[13]

Human Resources (HR) is the most critical asset for many businesses, including universities. The competence of lecturers and research staff—in terms of hard and soft competencies—distinguishes one organization from another. In order to continue to innovate to respond to today's challenges, higher education human resources competencies must also be ready to adapt to changes brought about by technology, both in terms of work methods and ways of thinking. There is much evidence that shows that organizations such as universities were hit because they were not ready for these two pillars, technological transformation and upgrading of human resources such as teaching staff and lecturers who are highly qualified and competent in the use of all types of work needs with modern technological tools and devices in the world of learning in higher education.[14]

In the context of learning in tertiary institutions, the use of technology, in other words, multimedia and the like, is an important study in which efforts to understand how the application of technology by the academic community has a positive impact on improving the quality of teaching and learning today.[15] This is important considering the ability of technology in education to facilitate the learning process, which increases understanding of knowledge and acquisition of skills that do not only focus on one source but this technology makes it easy for learning and teachers to get a variety of quality information sources that will improve outcomes.[16] The desired learning, as well as technology, is providing convenience in which its role can help and even replace the

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and Practice: Editorial Perspectives, 55 (December 1, 2020): 102185, https://doi.org/10.1016/j.ijinfomgt.2020.102185.

[13] Mohamed Ashmel Mohamed Hashim, Issam Tlemsani, and Robin Matthews, "Higher Education Strategy in Digital Transformation," *Education and Information Technologies* 27, no. 3 (April 1, 2022): 3171–95, https://doi.org/10.1007/s10639-021-10739-1.

[14] Lokanath Mishra, Tushar Gupta, and Abha Shree, "Online Teaching-Learning in Higher Education during Lockdown Period of COVID-19 Pandemic," *International Journal of Educational Research Open* 1 (January 1, 2020): 100012, https://doi.org/10.1016/j.ijedro.2020.100012.

[15] Evi Marlina, Bambang Tjahjadi, and Sri Ningsih, "Factors Affecting Student Performance in E-Learning: A Case Study of Higher Educational Institutions in Indonesia," *The Journal of Asian Finance, Economics and Business* 8, no. 4 (2021): 993–1001, https://doi.org/10.13106/jafeb.2021.vol8.no4.0993.

[16] - Sofendi, Rita Inderawati, and Machdalena Vianty, "Technology Use and Technology-Related Learning Experiences as Perceived by Indonesian Tertiary EFL Students," *International Journal of Applied Linguistics and English Literature* 10, no. 3 (May 30, 2021): 33–40, https://doi.org/10.7575/aiac.ijalel.v.10n.3p.33.

role of lecturers with automation activities in the process of providing information. Technology also reinforces information for academics in completing assignments and continuing the learning process in tertiary institutions where restructuring and changes in improving the quality of learning are increasing daily, along with changes and advances in knowledge and skills assignments. This is also reinforced when students need technology as a means of support in academic activities, especially seeking complete information, processing information, and applying and disseminating information according to the tasks and capacities of students.[17] Because of how important technology is for university academics, we explore learning experiences based on technology transformation, which are also influenced by the leadership model of higher education at Bontang University, East Kalimantan.

Given that there is very little research that raises technological transformation at the higher education level, especially technology-based teaching and how the strategies applied are related to digital applications, which, according to experts, significantly change the way universities apply and serve their communities, such as lecturers, student staff, and also parties involved collaborate with universities. On this basis, this study is essential to see how university leadership optimizes the use of technology in accelerating learning toward improving the quality of student learning outcomes.[18] As it is understood that there have been several digital transformations, recently many universities in Indonesia and other countries have seen the digital transformation in the context of business implementation, business implementation models, and technology as a business domain and how this transformation technology benefits organizations or the culture of doing business. With this study, we will also understand how technology transforms teaching and what factors are obstacles to digital transformation in the higher education sector. Indonesia has a broad and diverse range of problems in higher education. Understanding the challenging factors and the obstacle to digital transformation is perhaps due to the condition of supporting infrastructure, which is still an important issue, or the limited funding of human resources for governance and the low level of educational technology at each university.[19] To understand how digital transformation impacts educational productivity, this study tries to get valuable input from academics and students at the University of Bontang, East Kalimantan.

The entry of the era of globalization is marked by the openness of information and technology from developed countries to developing countries such as Indonesia. Technological progress does not always have a good impact on all Indonesian people;

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[17] Abdul Quddus et al., "Effect of Ecological, Servant Dan Digital Leadership Style Influence University Performance? Evidence from Indonesian Universities," *Systematic Reviews in Pharmacy* 11, no. 10 (2020): 408–17, https://doi.org/10.31838/srp.2020.10.64.

[18] Dahlena Sari Marbun et al., "Role of Education Management to Expediate Supply Chain Management: A Case of Indonesian Higher Educational Institutions," *International Journal of Supply Chain Management (IJSCM)* 9, no. 1 (2020): 89–96.

[19] Marbun et al.

many still need to enjoy the impact of technological progress freely.[20] The digital divide is one of the problems due to technological developments; the gap between society and information technology occurs due to several factors, such as what happened to students who live at higher education levels, where institutions severely limit their student's using gadgets. Researchers are concerned about finding out how students can use gadgets in university. The results of the initial survey conducted by the researchers showed that students could only use gadgets sometimes. University administrators limit the use of gadgets for students. From approximately 300 students of Universitas Bontang Kaltim, researchers found that many students brought gadgets. The types of gadgets that are carried are mostly cell phones and laptops. However, this university is not a university whose learning method is no longer traditional.[21]

RESEARCH METHOD

To answer the problems of this study, especially data collecting, we have conducted several interview sessions with the management and teachers of the Univ Bontang Kaltim, the purpose of which is to get input and views from the teachers and the leaders of the higher education regarding the considerations of Islamic boarding education governance, especially teaching based on digital technology applications.[22] For this reason, we have interviewed ten sources, including pesantren teachers and leaders. After getting interview data, we analyzed the data under a phenomenological approach, a way to get an understanding according to the study questions from several data we got through interviews.

The study involved coding the data and sharply evaluating and interpreting the data so that we could understand them so that they were relevant in answering the questions of this study with high validity.[23] In addition to interviews, we also conducted a literature review or literature review that we obtained data electronically on many technology literature databases and their uses in supporting learning governance at Islamic Univ Bontang Kaltim in Indonesia. The two data are interviews and a review of several data that have been published over the last ten years. Next, we design a report under a descriptive qualitative design, how this study wants to gain an in-depth understanding of the considerations of Islamic boarding leaders on the adoption and

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[20] Antonelli, C., and Fassio, C., *The Economics of the Weak Economy: Globalization, Skill-Biased Technological Change, and Slow Growth. Technological Forecasting and Social Change, 87, 89-107.*, 2014.

[21] Koirala, D., et al., *Perception towards Online Classes during COVID-19 among Nursing Students of a Medical College of Kaski District, Nepal. Journal of Biomedical Research & Environmental Sciences, 1(6), 249-255.*, 2020. Zulkifli Zulkifli and Agus Setiawan, "The Analysis of Student Learning Interest in Islamic Education (PAI) Course at Public Universiti in Bontang," *El-Buhuth: Borneo Journal of Islamic Studies*, December 29, 2020, 21–38, https://doi.org/10.21093/el-buhuth.v3i1.2781.

[22] Malmqvist, J., et al., *Are They Conducting the Pilot Study: A Neglected Part of the Research Process? Methodological Findings Support the Importance of Piloting in Qualitative Research Studies – International Journal of Qualitative Methods, 18, 1609406919878341.*, 2019.

[23] Campbell, J. L., et al., *Coding In-Depth Semistructured Interviews: Problems of Unitization and Intercoder Reliability and Agreement. Sociological Methods & Research, 42(3), 294–320.*, 2013.

application of digital technology in learning activities in the university environment. Thus, among others, the steps and methodology for implementing a descriptive qualitative study with the theme of regaining resilience in managing technology-based higher education institutions.[24]

RESULT AND DISCUSSION
Digital development in higher education

The following is our interview with some university administrators. Moreover, the teaching staff would like input on digital developments in Islamic education.[25] In this section, we also describe the results of the interviews and continue with explanations and discussions of each core problem—the presentation of the results of similar studies conducted by previous researchers in Indonesia and abroad. The following is an excerpt from the interview, which begins with a question and is accompanied by an answer.

The first question is, can you tell us about the use of digital technology in teaching and educational activities at the Univ Bontang Kaltim you manage?

> Well, as many educators understand that digital developments in this era are increasingly technological, what we do at higher education is more or less recognized or not; it has involved a series of uses of technology, for example, in communication activities between Higher education (HE) leaders and teachers as well as our relationship with outside communities, especially parents of students. Regarding internet usage activities among HE, YouTube technology is no stranger to higher institutions, especially young teachers. We take this method because we also want to take advantage of the conveniences available in digital applications, which are familiar in society, both modern university learning. We usually use applications such as Facebook to promote the progress of HE. In essence, the benefits of this technology have benefited the existence of HE both for ourselves and outsiders (P.01).

From the description of our conversation with the leaders and administrators of the university, the HE said that they were no strangers to applications or technology, primarily to communicate with other university and outsiders. Applications that are familiar with Facebook, WhatsApp, Instagram, and other applications that support the sharpness of religious knowledge, and we also use them to facilitate the development of the university, which are also centers of modern studies.[26]

What has been stated by the administrators of this HE has been widely practiced in various educational institutions, significantly higher education such as Islamic boarding schools, for example, what is said by those who say that the existence of

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[24] Shaturaev, J., *Financing and Management of Islamic (Madrasah) Education in Indonesia. Zeszyty Naukowe Politechniki Częstochowskiej Zarządzanie, 42(1), 57-65.*, 2021.

[25] Rohman, A., et al., *Alternative Approach Techniques to Support Home Islamic Boarding Schools Using Virtual Learning Technology. Linguistics and Culture Review, 5(S4), 1386-1399.*, 2021.

[26] Campbell, H. A., and Evolve, G, *Contextualizing Current Digital Religion Research on Emerging Technologies. Human Behavior and Emerging Technologies, 2(1), 5–17.*, 2020.

technology has helped a lot in the development and application of technology-based learning.[27]

We see that higher education and schools are now no longer synonymous with only printing traditional ulama. However, from traditional HE governance to modern, or in other words, the application of digital application technology is increasingly easy to find.

How is the application of digital technology in university learning, sir?

The Univ Bontang Kaltim is a modern religious education institution model to carry out learning activities with the rules of Islamic boarding schools that previously did not care about technological products. However, as explained earlier, we have recently seen the benefits of technology, such as the ease of communicating and learning. Finally, we immediately began cleaning up to enter and welcome technology based on our benefits. In other words, we no longer keep our distance from technology but slowly implement practical applications according to the learning curriculum. We also look at recommendations and examples of models implemented in current learning levels (P.02).

What was explained by the resource persons above is that this university has begun to improve itself to accept and actively use digital applications for the benefit of learning and communication between the teaching leadership and the community. They also see the usefulness and experience of modern learning systems that the existence of technology only sometimes brings harmful. However, there are still many positive ones as long as they can maximize their use.[28]

What is of concern here is the use of technology among university after slowly following technological trends in modern education. This has been proven by Lundeto et al.[29] They said that technology is no longer limited to communication but is part of learning activities at the university. A similar study by Hafidzi[30] said that university students now accept the digital impact on their many literacies with critical material reading.

The next question is that more and more universities are using the convenience of technology applications to facilitate recitation activities, such as the application of electronic books and the use of laptops in recitation.

What is the lecturer's view on the technology trend at University Bontang Kaltim?

We also find that in many research reports, almost all mention that the university system promoted by higher education is outdated. In terms of learning, for example, in the university, it is only limited to religious learning. While learning outside of higher

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[27] Zakaria, G. A. N., *Pondok Pesantren: Changes and Its Future. Journal of Islamic and Arabic Education, 2(2), 45-52.*, 2010.

[28] Ekasari, S., et al., *They Understood Islamic Education Management in the Digital Era: What Experts Say. Nidhomul Haq: Jurnal Manajemen Pendidikan Islam, 6(1), 127-143.*, 2021.

[29] Lundeto, A., Talib, I., and Neto, S, *Challenges and Learning Strategies of Islamic Education in Islamic Boarding Schools in the Industrial Revolution Era 4.0. AL-ISHLAH: Jurnal Pendidikan, 13(3), 2231-2240.*, 2021.

[30] Hafidzi, A, *The Ability of Islamic Boarding School Students to Face the Digital Literacy Era with Critical Reading. IJGIE (International Journal of Graduate of Islamic Education), 1(2), 141–153.*, 2020.

education is somewhat excluded. In several studies, most researchers suggest and urge the reconstruction of the education system by changing the traditional education system or combining it with science according to the demands of the times. So the convenience that exists in technology is the time to be used as needed. This means that our university learning system has been using technology and the content of the lessons is also a lot about natural sciences and economics so that students will later participate in community development (P.03).

From the results of the discussion above, it can be seen that universities, Schools, and Islamic Education in the Modern period 1999, universities that do not want to move to modernity and insist on maintaining their traditional teaching system with classical books without any systematic renewal, inevitably have to be ready to be abandoned by the community. This follows a study report by Khuailid[31], which says that the traditional HE education system is now starting to participate in religious education with technological facilities.[32]

The use of digital technology or the Internet among Islamic universities is to get feedback. Could you explain the responses and reactions of the center as the younger generation of higher education on technology?

> The use of internet applications for students is exciting because, to be honest, the willingness and curiosity of students are higher in information matters. They are a generation that was born at the same time as the presence of various technologies, so without doing it again because the existence of the internet for students is something things that replace people who like their teachers who live forever together; however, the use of the internet among students is undoubtedly limited to certain things. If so, we realize that there are contra and debates between parents and the community and managing the use of applications according to their needs and appropriately (P. 04).

What was answered by the resource person as a uni teacher about how enthusiastic the learning community or students are towards internet applications among universities and schools. The willingness and ability of the universities to organize and provide facilities to students according to their needs is an essential part of modern educational management.[33]

What has been stated above has been proven in several circles, where schools and Islamic boarding schools have strict policies on using the internet according to needs and are reasonable. As for the income and the contradiction between internet use among citizens, this continues to be sustainable. However, universities certainly have the responsibility and willingness to organize the management according to their needs.[34] It

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[31] Khuailid, M., *Sistem Pendidikan Pesantren Tradisional Di Pesantren Buntet Pada Masa Kepemimpinan Kh. Abdullah Abbas. Tsaqafatuna, 1(2), 42-59.*, 2019.

[32] Fathurrahman, Ima Fitriyah, and Muhammad, *Mencari Format Model Organisasi Yang Tepat Untuk Pesantren. Edu Islamika, 6(1), 190-206.*, 2014.

[33] Shaturaev, J., *Financing and Management of Islamic (Madrasah) Education in Indonesia. Zeszyty Naukowe Politechniki Częstochowskiej Zarządzanie, 42(1), 57-65.*

[34] Janmohamed, S., *Generation M: Young Muslims Changing the World Bloomsbury Publishing.*, 2016.

is perfect to use the digital internet for teenagers because it is straightforward to find the information that readers are looking for very quickly and precisely; the internet itself cannot be separated from people's lives, especially among teenagers.[35]

Previously, there were still HE that still questioned the use of the internet among university. This invites an answer, and it is also possible that the controversy of each university by its leadership has a different view of the possible reasons, according to the lecturers.

What background do the internet and digital applications need special attention, especially governance among students?

> The use of digital applications or the internet in general, which is used via smartphones, cannot be directly separated for negative and positive reasons in the form of an impact on a young Islamic generation; of course, we have provided a deepening understanding of understanding and providing current views and solutions that the internet has both positive and negative impacts. If it is negative, then the awareness and understanding of the user is number one; in other words, the younger generation certainly has yet to be able to control it as expected. Therefore, teachers' care, strict management data, and rules must be implemented. We as HE supervisors have and understand that the consequences of a free internet are not good because the internet has both positive and negative impacts; therefore, strict and responsible control and governance is the main thing (P. 05).

The same thing was also conveyed in the study report,[36] which said that teenagers must be given understanding and control so that internet use can be used appropriately according to their needs and nothing more and nothing less. Teenagers are young people who are looking for identity; in the process of searching for that identity, teenagers still need to determine the right and right direction. There are many realities that we find in the search for their identity. They have taken the wrong path, so related internet use becomes wrongly used.[37]

The lives of teenagers, especially students, are often faced with problems that certainly need attention from all parties. The attention was obtained from parents, teachers, friends, and various other parties, while in the data environment, the attention was obtained by educators and researchers.[38]

Our next question was, why do more universities have a regulation to ban technology in universities when the technology is so essential for students learning?

> The use of the digital internet among data is still taboo, while the internet is also essential. This is taboo because, in the HE environment, it is not allowed to carry or use a smartphone. The HE environment considers that the internet is not too important to use. The cause of not being able to use a smartphone or cellphone in the universities is that it

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[35] Livingstone, S., and Helsper, E, *Balancing Opportunities and Risks in Teenagers' Internet Use: The Role of Online Skills and Internet Self-Efficacy. New Media & Society, 12(2), 309-329.*, 2010.

[36] Ritonga, M, *Internet, Pesantren, and Management Strategies Educational Building. Pesantren and Management Strategies Educational Building (April 1, 2020),* 2020.

[37] Rohaeni, A., et al., *Management of Noble Moral Education for Madrasah Aliyah Students at Persatuan Islam Boarding School. Journal of Industrial Engineering & Management Research, 2(4), 154-171.,* 2021.

[38] Musa, N., Hamid, N. A., and Ishak, M. S, *Understanding the Trends of Digital Literacy among Islamic Students (Positive Internet Analysis Study). DAYAH: Journal of Islamic Education, 4(2), 123-136.,* 2021.

can neglect the students, which hinders the learning process in the HE itself. Because the Islamic education policy is not allowed to use of smartphones, there are obstacles for students to obtaining information and knowledge (P. 06).

One solution that can be taken on using the internet to obtain information for students is the facilities for using computers and the internet in the HE environment. The use of computers and the internet must be kept under the supervision of clerics and clerics so that their use stays consistent with the rules studied in the university uses. With computers and the internet, students can more easily access the information they want.

Moreover, students can hone their literacy skills so the general public can access their writings.[39] Moreover, this proves that internet use cannot be seen as always unfavorable because it has many advantages for its users, including among students. Students' activities cannot be separated from various books; their skills in reading books are competent. These skills must be accompanied by literacy skills so that ordinary people who are still very unfamiliar with various technological literature can also understand the book's contents. Therefore, with the internet, it is hoped that it can be a bridge between the student's existing knowledge that the general public can access.

Table 1. The question and answer of semi-structure interview with academic staff at the University of Kaltim

No	Question	Answers
1	Digital Technology in Teaching	The Univ Bontang Kaltim is a modern religious education institution model to carry out learning activities with the rules of Islamic boarding schools. We have seen the benefits of technology, such as the ease of communicating and learning. In other words, we no longer keep our distance from technology but slowly implement practical applications.
2	What is the lecturer's view on the technology trend at University Bontang Kaltim?	In many studies, researchers suggest and urge the reconstruction of the education system by changing the traditional education system or combining it with science. This means that our university learning system has been using technology and the content of the lessons is also about natural sciences and economics so that students will later participate in community activities.
3	Could you explain the responses and reactions of the center as the younger generation of higher education on technology?	The use of internet applications for students is exciting because, to be honest, the willingness and curiosity of students are higher in information matters. We realize that there are contra and debates between parents and the community and managing the use of applications according to their needs and appropriately.

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[39] Supriyono, S., *Pesantren, the COVID-19 Pandemic, and Digital Transformation: A Global Development Perspective. Muslim Education Review, 1(1), 37-58.*, 2022.

4	What background do the internet and digital applications need special attention, especially governance among students?	The use of digital applications or the internet in general, cannot be directly separated for negative and positive reasons in the form of an impact on a young Islamic generation. We as pesantren supervisors have and understand that the consequences of a free internet are not good because the internet has both positive and negative impacts.
5	Why do more universities have a regulation to ban technology in universities when the technology is so essential for students learning?	In the Islamic education policy, it is not allowed for students to use smartphones or mobile phones in the pesantren environment. The cause of not being able to use a smartphone or cellphone in the universities is that it can neglect the students, which hinders the learning process.

CONCLUSION

In the end, we reiterate that the purpose of this study is to review the management of technology-based Islamic boarding schools that we have studied at the University of Bontang. After analyzing several data in the form of interviews with pesantren administrators and also reviewing several scientific evidence of technology-based higher education, we can finally conclude that the development of digital application-based salaf pesantren has indeed begun and will continue to be developed because this digital application has many benefits both as infrastructure work support in the form of communication and information as well as tools that can be used for learning and teaching activities. The reason why the university community accepts the application of technology is none other than because this application has innovative power in terms of working facilities such as communication but also terms of fast information presentation both for the process of teaching and learning internal activities and promotion of higher education to the outside world.

However, according to the understanding and acknowledgement of the teachers, they are not merely free academically. However, all of them are in a state of governance controlled by responsibility, as they should be. What the HE lecturers said about the development of digital applications in the university world is also following the various studies that have been carried out, thus in the form of studies and discussions of the advantages and disadvantages of using digital and internet devices in university circles, this will provide new fathers with enlightenment and efforts to make learning successful. And also, the promotion of the progress of the university itself through the help of digital technology. We are aware that the data we present certainly has

shortcomings, so we need constructive thoughts and criticism so that the presentation in the future will be even better.

In carrying out this study, there are several weaknesses and limitations; among others, this study should have been carried out by involving a balanced portion of quality and quality data. Likewise, correspondents must involve lecturers, students, and researchers at Bontang University. With the involvement of all academic components, it will produce more comprehensive, broader, and specific data on the completion of technology-based teaching themes among universities. Recommendations that in the future, the difference between the study is carried out by adding a more comprehensive range of correspondent variables than with a mixture of qualitative and qualitative data so that it will produce more detailed and specific data.

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