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**Revitalizing Islamic Education: Professionalism of State Islamic Religious
College Lecturers in Welcoming the Industrial Era 4.0**

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REVITALIZING ISLAMIC EDUCATION: PROFESSIONALISM OF STATE ISLAMIC RELIGIOUS COLLEGE LECTURERS IN WELCOMING THE INDUSTRIAL ERA 4.0

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Abstract

This study focused on three aspects: 1) the professionalism of lecturers in the Faculty of Tarbiyah and Teacher Training (FTK) at the State Islamic Religious College (PTKIN) in Aceh in welcoming the industrial revolution 4.0 era; 2) the skills of FTK lecturers at PTKIN in Aceh in using technology for teaching; and 3) strategies to develop the professional competence of FTK lecturers in welcoming the industrial revolution 4.0 era. This research applied a qualitative method with fifty informants from FTK-PTKIN in Aceh. The informants were determined purposefully: two deans, one head of the Department of Teacher Training and Education, six deputy deans, and forty-nine lecturers. Data collection was done through interviews, observations, and documentation, and the data were analyzed through three steps: data reduction, data presentation, and conclusion drawing. This study revealed that FTK-PTKIN lecturers in Aceh have high professional competence and good skills in using technology for teaching to welcome the Industrial Revolution 4.0 era. The common media used in teaching are Google Classroom, Google Meet, Zoom, and WhatsApp. Moreover, the professional competence of FTK lecturers is developed through the following strategies: doctoral education, technology training, and scholarship provision.

Keywords: Professionalism; Lecturer Skills; Era 4.0; Strategy.



A. Introduction

The era of the Industrial Revolution 4.0 is also known as the technological revolution phase, which changes how people move in terms of scale, scope, complexity, and transformation from previous experiences. Humans in the 4.0 era will live in global uncertainty, so they must be equipped with the ability to predict a rapidly changing future. These changes must be responded to by the state in a comprehensive and integrated strategy involving various aspects: the political stakeholders, public, academia, private sectors, and the community, to overcome the challenges of Industry 4.0 and develop them into opportunities (Muhammad, 2023; Subandi et al., 2019; Yahya, 2018).

In facing the 4.0 revolution era, lecturers as academics are expected to be able to develop their competencies so that lectures run professionally. Lecturers are required to play an active and creative role in implementing lectures supported by skills in using technology (Hamid et al., 2014; Nurkholis & Badawi, 2019). Lecturer professionalism has implications for improving the quality of lectures and student learning motivation (Rohman, 2016). Research showed a positive relationship between lecturers' professional competence and student learning motivation (Yulianik, 2018). The professional competence of lecturers can be reviewed from the following indicators: mastery of material concepts, structures, and scientific paradigms that support the subject's teaching and skills in using educational technology.

State Islamic Religious College (PTKIN) lecturers in Indonesia should be more sensitive in responding to technological advances (Soraya, 2018). Lecturers must be able to keep up with the current developments and have digital technology skills, which are the demands of the industrial era 4.0 (Rozi, 2020). Furthermore, improving lecturer professionalism must follow the era considering the rapid technological developments and stiff competition in the Industrial Revolution 4.0. Therefore, lecturers at the Faculty of Tarbiyah and Teacher Training (FTK) PTKIN Aceh should have relevant professional competencies to improve

the quality of lectures and prepare graduate student teachers who are highly competent for the needs of the 4.0 era. The competencies cover digital technology skills, computer-based teaching skills, and internet networks.

However, based on preliminary studies, many FTK-PTKIN lecturers in Aceh need more professional competence by the 4.0 era, as indicated by (1) low skills in internet-based teaching technology, (2) teaching monotonously, and (3) a lack of teaching skills. Based on the problems, the researchers are interested in further studying the professional competence of FTK-PTKIN lecturers in Aceh in welcoming the Industrial Revolution 4.0 era.

1. The Era of Industrial Revolution 4.0

Industry 4.0 comes from the idea of the fourth industrial revolution. This term became broadly known in 2011 (Hermann et al., 2015). The first industrial revolution began in 1784, using water and steam power to mechanize production systems. The second industrial revolution started in 1870 by utilizing electric power to mass produce. Furthermore, the third industrial revolution occurred in 1969 and is characterized by the spread of automation and digitization using electronics, computers, and robotic technology to automate production processes. While in the fourth industrial revolution era, its power stems from and rests on the third industrial revolution. Era 4.0 is marked by the fusion of technologies consisting of three independent fields of science: physics, digital, and biology (Miranda et al., 2021; Tjandrawinata, 2016).

Industry 4.0 is characterized by increased digitization of manufacturing driven by four factors.

- a. Increased data volume, computing power, and connectivity;
- b. Emerging business analytics, capabilities, and intelligence;
- c. The occurrence of a new form of interaction between humans and machines and;
- d. Improved digital transfer instructions to physical forms, such as robotics and 3D printing (Yahya, 2018).



The rapid development of science and technology in the early 20th century produced information technology and automated production. Industrial machines are no longer controlled by human power but by using Programmable Logic Controllers (PLC) or computer-based automation systems. The development of technology is included in the field of education, which gives birth to many new learning technologies (Bygstad et al., 2022).

Preparations must be made to face the 4.0 revolution era, including developing Indonesian human resources through educational activities in various forms of community competency development training. In particular, FTK-PTKIN should improve and develop educational programs that follow the needs of the 4.0 era to generate professional teacher candidates who can deal with future challenges.

2. Lecturer Competence in the Era of Industrial Revolution 4.0

Competence is a working concept that indicates a work area where people can become competent or excel. Competence is a fundamental characteristic of a person that has a causal relationship with extraordinary work performance or effectiveness (Didi Supriadie, 2012). Based on the provisions of Law Number 14 of 2005 concerning teachers and lecturers, four competencies must be mastered by lecturers to maximize their performance: pedagogic, professional, personality, and social competencies.

Competition in the Industrial Revolution 4.0 era is getting more demanding, and the lecturers must also develop following the pace of development. There are six additional competencies for lecturers facing the era of the Industrial Revolution 4.0, including education, research, technological commercialization, globalization, counseling, and future strategic competencies (Helaluddin, 2019).

3. FTK Lecturers' Competence in Using Technology for Teaching in the Industrial Revolution 4.0 Era

The era of the Industrial Revolution 4.0 has brought changes in various sectors, including education. It is pushing the lecturers to evolve



teaching strategies using technology. Lecturers must be creative in teaching and take advantage of innovation and educational technology (Sulaiman, 2017; Sutirna, 2018). Professional lecturers certainly have many alternatives for conducting lecture innovations.

The era of the Industrial Revolution 4.0 demands that lecturers have professional competence in learning technology, including digital technology, and be able to facilitate lectures by utilizing internet-based digital technology. E-learning is a form of progress in learning technology that lecturers must master. Lecturers' e-learning and distance learning systems skills are also part of professional competence (Yaumi, 2018). Technological advances make the lecture process more manageable, and the teaching process not only takes place in the classroom but can also be done anywhere online (Mintasih, 2018; Hidayat & Saleh 2022; Saha et al., 2022).

The professionalism of lecturers in using digital technology and the internet has implications for improving the quality of lectures and becoming a teaching demand in the era of the Industrial Revolution 4.0 because what lecturers face are students living in technological sophistication. Therefore, lecturers must have technological skills (Nurvitasari & Poerwandar Asmaningrum, 2018). The use of technology, such as internet-based digital technology, has become a teaching requirement and need for lecturers in the era of the Industrial Revolution 4.0.

The development of lecturer professionalism aims to improve the quality of higher education to meet the Industrial Revolution 4.0 era (Pananrangi, 2017). Meanwhile, the strategy for developing the competence of lecturers' professionalism can be done through (1) Doctoral education, (2) Training, especially training on the use of technology for teaching, (3) Research training, and (4) Acceleration of professors.

Furthermore, the development of the academic competence of lecturers can be done by strengthening the capacity of lecturers (Abbas, 2008). This effort can be made through PTKIN leadership policies by providing opportunities for lecturers to continue their doctoral education and other programs that develop their competencies to become more professional in teaching tasks.



B. Method

This study employed a qualitative method. This method is based on the philosophy of postpositivism, examining the natural object condition and the researcher as the key instrument. The data sources in this study were determined purposively and using the snowball sampling method. The data collection technique is triangulation, and data analysis is inductive or qualitative. The results of qualitative research emphasize meaning rather than generalization (Sugiyono, 2011). Qualitative methods aim to obtain in-depth data that contains meaning. The data are based on the findings at the research locations.

This study involved fifty informants selected purposively from FTK-PTKIN in Aceh, consisting of two deans, one head department, six deputy deans, and forty-nine lecturers. Data collection was done by interview, observation, and documentation. Interviews were conducted with deans, vice deans, and lecturers on duty at FTK-PTKIN in Aceh to obtain data on lecturer professionalism competencies and strategies for increasing lecturer professionalism at FTK-PTKIN in Aceh in the 4.0 era. Observations were carried out directly to collect data on the lecturers' skills and professionalism of FTK-PTKIN Aceh in the 4.0 era on technology media use during the lecture process. Documentation was in the form of images and written text related to the professional development of FTK-PTKIN lecturers in Aceh in the 4.0 era. Meanwhile, data analysis was carried out using three steps: data reduction, data presentation, and conclusion by referring to the explanation of Miles and Huberman 1992 (Setiawan, 2018).

C. Result and Discussion

1. Result

The research findings show that lecturers at FTK-PTKIN in Aceh province have high professional competence in welcoming the industrial revolution 4.0 era, with indicators of professionalism consisting of lecture planning, implementation, and evaluation. In addition, it is also equipped with educational competence, using learning technology as an essential



aspect of the 4.0 era. Nevertheless, developing these competencies is still ongoing to balance the sophistication of educational technology in the Industrial Revolution 4.0 era.

FTK-PTKIN lecturers in Aceh are generally equipped with lecture technology application skills. It can be seen during the policy for the distance learning process, especially during the Covid-19 outbreak. The research data shows that all FTK-PTKIN lecturers in Aceh have successfully facilitated the learning process using online media. The technology media applications lecturers often use are *Google Classroom*, *Google Meet*, *Zoom*, and *WhatsApp*. The skill of using technology media indicates that FTK-PTKIN lecturers in Aceh have professional competence in welcoming the 4.0 era.

The strategy for developing the professional competence of FTK-PTKIN lecturers in Aceh in welcoming the 4.0 era is carried out by providing support for the doctoral program, training programs on the use of technology, and scholarship from the Ministry of Religion of the Republic of Indonesia.

2. Discussion

a. Professional Competence of FTK-PTKIN Lecturers in Aceh in Facing the Industrial Revolution 4.0 Era

According to the provisions of Law Number 14 of 2005 concerning teachers and lecturers, the competence of lecturers includes pedagogic, personality, social, and professional competencies obtained through professional education, for example, lecturers pursuing a doctoral degree. However, in the era of the Industrial Revolution 4.0, FTK-PTKIN lecturers must also be skilled with six other competencies to increase their professionalism.

The use of teaching technology is one of the competencies that all lecturers must master. Based on the research data collected, it indicated that FTK-PTKIN lecturers in Aceh already have professional competence in using technology media, with the following indicators.



- 1) Lecturers use web-based technology media in the lecture process;
- 2) Lecture materials are distributed to students through *Google Classroom*;
- 3) The lecture process in the odd semester of 2021 was carried out online, and in the even semester of 2022, offline and online.

The leadership of FTK-PTKIN in Aceh encourages every lecturer to be competent in the strategic future to provide constructive views and ideas on the possibilities that will occur in the future. In addition, lecturers must also be able to provide solutions and answers to technological advances that students will face.

Efforts to become a competent lecturer or strategic competence in the future require awareness and strong will from each lecturer. They also need to be supported by regulation from the leadership at the faculty and PTKIN levels in Aceh. The development of lecturer competence in this aspect can be done through activities, scientific studies, collaborations in research, and other programs at PTKIN to support the improvement of lecturer professionalism.

The following describes research results on six additional indicators of professional competence for FTK-PTKIN lecturers in Aceh in welcoming the 4.0 era.

- 1) Educational competence is the ability and skill to respond to complex demands and carry out diverse tasks in implementing education or lectures. FTK-PTKIN lecturers in Aceh already have good abilities in conducting lectures and preparing all the tools needed for teaching. They also continue to improve their competence to conduct their teaching duties professionally. However, a few lecturers must still be technologically competent, so they must evolve;
- 2) Research competence is related to the ability to research and discover innovation. This study indicates that all lecturers at FTK-PTKIN in Aceh actively conduct research and write scientific papers and books independently or in collaboration because this aspect is part of the lecturer's workload. Many FTK-PTKIN lecturers in Aceh have received research budget

- assistance, one of them from the Indonesian Ministry of Religious Affairs. The competence of lecturers in this field greatly contributes to developing new knowledge and concepts that can become recommendations for improvements in education, media technology, and various other fields;
- 3) Competence for technological commercialization. This research shows that most lecturers at FTK-PTKIN in Aceh are competent in this field but only related to using technology in lectures. They need to be more commercializing research findings that impact economic development. Therefore, to increase the professionalism of lecturers in this field, the leadership elements at FTK-PTKIN in Aceh have carried out strategic training programs;
 - 4) Competence in globalization is related to a combination of the lecturers' knowledge, skills, attitudes, and values successfully applied to global issues or intercultural situations, including everything that developed in the 4.0 era. Most lecturers have these competencies based on interview results with lecturers and leadership elements at FTK-PTKIN in Aceh. However, there are still some lecturers who still need to improve. Lecturers with broad competencies will succeed in educating and developing students' competencies relevant to the needs of the 4.0 era;
 - 5) Counselor competence is a basic body of knowledge and fundamental skills lecturers must possess to guide or supervise students. Research data reveals that FTK-PTKIN lecturers in Aceh have carried out their roles as student counselors. Most lecturers are ready to guide or supervise students in developing competencies and skills needed in the 4.0 era. The counseling process is carried out to prepare prospective teacher students to fill available job opportunities in the 4.0 era;
 - 6) Competence in the strategic future is related to lecturers' ability to deal with advanced and sophisticated technology. Most lecturers of FTK PTKIN Aceh are highly motivated to increase their competence in science and technology. This competence is crucial for all lecturers to prepare themselves and the strategies to face challenges in the 4.0 era. FTK lecturers continue to improve and develop professional competence as a strategy to welcome the 4.0 era.



Based on the six additional competencies above, the study results show that most of the FTK-PTKIN lecturers in Aceh already have professional competence in welcoming the 4.0 era. This conclusion is strengthened by observation data, for example, the skill of lecturers in using online learning and interviews with the dean of FTK. A few lecturers still need improvement to carry out their duties well and prepare prospective highly competent teacher students with skills relevant to the needs of the 4.0 era.

b. Professional Competence in the Implementation of Lecturers in the 4.0 Era

Lecturers are university educators expected to have the professional competence to carry out their duties effectively. Based on Law Number 14 of 2005 concerning Teachers and Lecturers, the position of lecturers as professionals in higher education functions to increase the dignity and role of lecturers as learning agents, developers of science, technology, and the arts, as well as community service to improve the quality of national education.

This study uses three indicators for measuring lecture professionalism in lecture implementation: planning, execution, and evaluation. Every lecturer should employ these aspects to improve the quality of lectures. Further descriptions are explained in the following discussion.

1) Lecture planning

The result points out that lecturers prepare semester learning plans (RPS) from the beginning of the semester. This strategy aims to create an effective lecture process to help students concentrate on lecture topics. It also aims to enhance the quality of the lecture process to align with the 4.0 era. The preparation aspect is considered an indicator of participation and responsibility of FTK-PTKIN lecturers, who are prominently known to maintain the high-quality standard responsibly by completing the RPS early. Professionalism in RPS formulation is required to improve lecturers'

quality, characterized by technological sophistication. The lecturers are expected to master RPS filing based on technology to provide easy access to students. These three aspects become indicators of the lecturer's professionalism at the Faculty of Tarbiyah and Teacher Training of PTKIN in Aceh, which is listed as.

- (1) The lecturers have prepared lecture planning or RPS;
- (2) The RPS is prepared at the beginning of the semester;
- (3) Develop a technology-based RPS.

The RPS remains a critical component that lecturers must prepare, leading to an effective lecture process and indicating high professional competence. Furthermore, it is also essential to develop the lecturers' professional competence on an ongoing basis to adjust to the rapid development of technology in the 4.0 era. For these reasons, lecturers must continue to develop RPS following the updated requirements.

2) Implementation of lectures

The lecture implementation is a core activity characterized by the interaction between lecturers and students in the hall or class. The lecture process will take place effectively if the professionalism of lecturers and various teaching skills support it. These skills must be employed to implement practical and innovative teaching in the future. Teaching skills become a lecturer's key success factor in developing student interaction and engagement, leading to quality improvement.

Research data shows that the lecturers are equipped with six teaching skills, which include.

- (1) Ability to organize lecture materials. The lecture materials refer to the materials lecturers use in the lecture process. It can be knowledge, skills, or attitudes that students must achieve based on specific competencies (Kosasih, E. 2021). Organizing teaching materials means organizing new ideas that are meaningful for students (Prihandhika, A. 2017). The result shows that the FTK-



- PTKIN lecturers have professional competence in organizing online and offline teaching materials following the future condition;
- (2) Ability to develop teaching materials. Developing teaching materials is a must for every lecturer to provide new information based on students' characteristics. It can be in the form of developing textbooks or course modules renewed every semester. The result reveals that the development of teaching materials for the lecturers is generally a revision of the existing materials due to teaching the same course every semester. However, some lecturers create new lecture modules regularly. The development of teaching materials is summarized in the following table.

Table 1. Types of development of teaching materials

No.	Types of Development of Teaching Materials	Notes
1.	Printed teaching materials, such as reference books	In general, lecturers develop lecture teaching materials.
2.	Audio materials, such as recordings	
3.	Audiovisual materials	
4.	Web-based learning materials	

The various types of materials indicate that lecturers already have practical professionalism competencies. These abilities continue to support lecturers' professionalism in the Industrial Revolution 4.0 era.

- (3) Ability to do apperception and conclude the lesson. Apperception is an effort to start a lesson by creating prepared conditions that stimulate students to be physically and mentally attentive and motivated to carry out learning activities (Supriadie, D. & Darmawan, D. 2021). Research data presented the various skills of lecturers to start the lecture, which are (1) Attracting students' interest with varied teaching styles, (2) Using high and low voices (variations in teaching voices), (3) Focusing students' attention utilizing technological tools or media, (4) Motivating student learning by giving questions, and



- (5) Question and answer. In addition to opening lectures, lecturers must also conclude the lectures. Concluding lectures can be referred to as an activity to summarize the lecturer and end the session. The data result indicates that lecturers can conclude the lectures reasonably. It is carried out as follows: (1) Summarizing the lecture material, (2) Providing opportunities to ask students questions, (3) Asking several students to determine their comprehension, and (4) Concluding;
- (4) Ability to explain the material. The data depicts the high competence of lecturers to provide adequate explanations characterized by the following indicators: (1) Explanations in a structured and systematic manner, (2) Explanations given are relevant to the material or concept, (3) Explanations of concepts given are based on lecture planning, and (4) Explanations are given following the student's characteristics. The result indicates that lecturers are professional in carrying out teaching duties that align with the requirements of the 4.0 era, which expects lecturers to have several teaching skills;
- (5) Ability to activate the lecture. The lecturers are expected to have the ability to support active interaction. The result reports that the lecturers have the professional competence to improve the interaction with various patterns, including using a student-centered learning approach and technological media. More importantly, three interaction patterns are often used to increase participation: (1) lecturers deliver materials to students in one-way interaction. This interaction is passive; there is limited interaction, and more explanations are coming from lecturers. (2) In two-way interaction, lecturers deliver material, and students can also convey their opinions during class discussions. The interaction occurs in two directions, which leads to active interaction of lecturers and students, and (3) Interaction from many directions, starting from the lecturer delivering material to students or from students to fellow students and lecturers.



Lecturers and students and students with fellow students are equally active. This type of interaction can improve the quality of the learning process to be more effectively supported by the competence of lecturers and the use of technology;

- (6) Ability to manage offline and online classes. Along with the development of technology in the 4.0 era, the lecture process can occur in offline and online classes. Based on research data of observation, lecturers already have competence in conducting online classroom management.

Professionalism is characterized by various abilities, including managing classes online and offline. Online classes use *Google Meet*, *Google Classroom*, *WhatsApp*, and other relevant online applications. Research data shows good professional lecturers' competence in managing suitable physical and online classes. This competence was developed during the COVID-19 pandemic two years ago when the lecture process took place online using various applications. It shows that FTK-PTKIN lecturers in Aceh have high professional competence, including professionalism in online classroom management.

In general, the six teaching skills become indicators for the lecturers at FTK-PTKIN in Aceh province who possess high professional competence to support higher education in the 4.0 era.

3) Lecture Evaluation

Lecture evaluation measures the level of student performance related to material comprehension. The lecturers regulate the lecture evaluation system. Research data shows that the lecture evaluation system has been technology-based, and all lecturers have practical abilities to perform the process. Educational technology development has positively impacted the learning evaluation system, and FTK-PTKIN lecturers in Aceh have this skill. The following are three indicators in the implementation of lecture evaluation.

- (1) The “Siakad system” technology is used to evaluate the lectures;
- (2) Lecture evaluation follows the academic provisions;
- (3) Evaluation of lectures is conducted using quizzes, midterm, and final.

The professionalism in the overall lecture evaluation is exemplary, which is conducted based on technology using the siakad system at every PTKIN in Aceh. Lecturers need to understand the technological developments as technological advances emerge, including changes to the technology-based lecture evaluation system. Therefore, all lecturers must improve their teaching skills and professional competence in utilizing educational technology.

c. Technological Skills of FTK-PTKIN Lecturers in Aceh for Teaching.

Industrial Revolution 4.0 has also generated various educational technologies to support the quality lecture process, especially for lecturers. These various technological media contribute significantly to education. One contribution of technological media is that it can facilitate and enhance student learning motivation. Thus, the skills of lecturers are essential to utilize technology optimally.

The data obtained from observation show that lecturers and deans serving at FTK-PTKIN in Aceh are professional and have practical skills in utilizing technology and other technological media to support the lecture process. The technology media used is Google Meet and Zoom based on effective planning. The skill indicators are elaborated as follows.

- 1) The use of lecture technology media is conducted based on extensive planning.
- 2) Consideration of the relevance of the use of technological media with the study of lecture material.

Furthermore, the most common media used by the lecturer are listed below.



- 1) Computer and laptop.
- 2) Infocus technology.
- 3) Mobile phone technology with the Android operating system.

The lecturers' competence in utilizing technology media is considered adequate based on data from observations and interviews. With leadership elements, the lecturers can actively use technological media and web-based applications that align with the 4.0 era. Research data shows that the web-based technology applications commonly used are *Zoom*, *Google Classroom*, *Google Meet*, and *WhatsApp* apps.

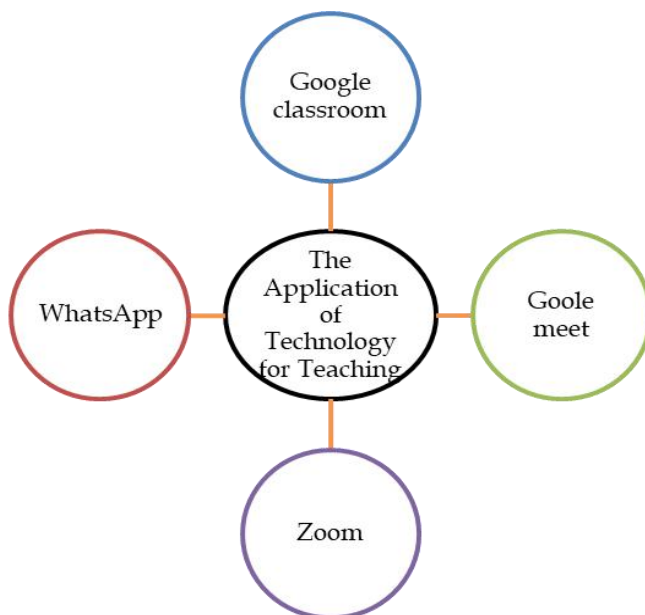


Figure 1. The application of technology for teaching

As shown above, these four applications are the technology the lecturers often use. The use of various technological media applications is part of the indicators of the lecturer's professionalism to improve the lecturer's quality in producing graduates or prospective teachers who are competent and able to face the challenges in the 4.0 era.

d. Strategies for Developing Professional Competencies of FTK Lecturers in Welcoming the Era of the Industrial Revolution 4.0

The progress, development, and emergence of new technologies in the era of the Industrial Revolution 4.0 requires academics, especially lecturers, to improve their competence to be more professional in completing tasks and the tri dharma of higher education. The result from the dean's interview, for example, training in the implementation of internet-based learning media, shows that the professional competence of lecturers is important and must be included in the priority program of faculty and university leaders. The strategy for developing the professional competence of lecturers is conducted through three steps, as follows.

- 1) FTK-PTKIN lecturers in Aceh can pursue a doctoral degree. The university provides a simple process for a study permit application. This strategy aims to develop lecturers' professional competence through formal education;
- 2) Educational technology training is conducted regularly to improve professionalism using technological media;
- 3) Scholarships are provided for lecturers to pursue a doctoral degree through the Ministry of Religious Affairs of the Republic of Indonesia. The Indonesian government has facilitated the development of lecturer competencies through a 5,000 doctoral scholarship program so that all FTK-PTKIN lecturers in Aceh can take advantage of the scholarship by applicable regulations.

The development of the professional competence of lecturers through this strategy leads to positive implications for improving the professionalism of lecturers towards implementing the tri dharma of higher education. Therefore, the leadership currently pays serious attention to the professional development of lecturers in utilizing educational technology.

FTK-PTKIN lecturers in Aceh are allowed to pursue a doctoral degree. Considering an improvement in the development of science and



technology, the lecturers' knowledge must also increase to contribute optimally to support the quality of education.

D. Conclusion

Lecturers at FTK-PTKIN in Aceh province have good professional competence based on the indicators that all lecturers can prepare lecture planning, have proper lecture management skills, and evaluate lectures based on technology. In addition to these professional competencies, it has six additional competencies: educational competence, research competence, competence for technological commercialization, globalization competence, counselor competence, and competence in future strategies. However, all these additional competencies still have to be improved.

Furthermore, FTK-PTKIN lecturers in Aceh have been equipped with lecture implementation skills utilizing web-based technology media, including *Google Classroom*, *Google Meet*, *Zoom*, and *WhatsApp*. Furthermore, the professional competence of FTK-PTKI lecturers is developed by promoting doctoral education, ongoing training, and scholarship programs. This strategy has implications for improving the quality of the lecture process to support the production of professional teacher candidates in the 4.0 era.

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