THE ROLE OF LECTURERS IN THE ERA OF INDUSTRIAL REVOLUTION 5.0

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Abstract In the era of industrial revolution 5.0, education plays an important role in preparing individuals to deal with these changes. Education is geared towards developing skills and knowledge that are relevant to technological developments and enable wider access. In the era of industrial revolution 5.0 characterised by advances in digital technology, social transformation, and high connectivity, the role of lecturers faces new challenges that affect learning approaches and practices. This research explores the role of lecturers in the era of industrial revolution 5.0 using a qualitative descriptive approach. Some of the strategies and competencies that are important for lecturers in facing the era of industrial revolution 5.0 are: (1) mastery of technology; (2) project-based learning; (3) collaboration and communication skills; (4) digital literacy and ethics; (5) development of life skills; (6) increased professionalism; (7) classroom management skills; and (8) adaptability and flexibility. By developing these strategies and competencies, lecturers will be ready to face the challenges and utilise the opportunities that exist in the industrial revolution 5.0 era to create relevant, innovative, and meaningful learning experiences for students.

Keywords: Role of Lecturers; Opportunities and Challenges; Strategies and Competencies; Industrial Revolution 5.0

INTRODUCTION

Industrial revolution 5.0 is a concept born in Japan in response to the rapid development of digital technology. It aims to create a society that focuses on human well-being by utilising technology and innovation. The industrial revolution 5.0 emphasises the integration of technologies such as artificial intelligence (AI), internet of things (IoT), big data, robotics, and renewable energy systems to solve various social, economic, and environmental problems faced by society (Fricticarani et al., 2023).

Today's society faces complex challenges, such as rapid population growth, social inequality, environmental degradation, and changes in the world of work. The industrial revolution 5.0 proposes a holistic approach by using technology as a tool to improve quality of life and achieve sustainability (Darwin, 2021).

In the era of industrial revolution 5.0, education plays an important role in preparing individuals to deal with these changes. Education is geared towards developing skills and knowledge that are relevant to technological developments and enable wider access. Curricula that focus on digital skills, collaboration, creativity and problem solving are implemented to help individuals deal with the increasingly complex demands of society (Nurkholis, 2013). The effects of the industrial revolution 5.0 on education are: Firstly, providing wider access to education. The industrial revolution 5.0 enables wider and more inclusive access to education through the use of digital technology. With technologies such as e-learning, video conferencing and online learning platforms, individuals can obtain education from anywhere and at any time (Fajri et al., 2012). Second, relevant curriculum development. The industrial revolution 5.0 influences curriculum development by emphasising skills and knowledge that are relevant to technological developments and the

job market. Education is geared towards preparing individuals with digital skills, creativity, critical thinking, and collaboration (Wurdiana shinta, 2021). Third, innovative learning methods. The industrial revolution 5.0 encourages the use of innovative and technology-based learning methods. Examples include the use of AI in personalising learning, augmented reality (AR) and virtual reality (VR) to enhance the learning experience, and the use of simulations and educational games (Yessi, 2021).

Fourth, connection with the real world. The industrial revolution 5.0 promotes the connection of education with the real world through collaboration between educational institutions, industries and communities. Education focuses not only on mastering knowledge, but also on developing social, entrepreneurial, and problem-solving skills relevant to everyday life (Rizal et al., 2021). Fifth, the transformation of the role of lecturers. One very important component is the world of education is the role of lecturers, which must have a significant role in building students' way of thinking in following the increasingly rapid technological developments by instilling character education for students (Iryanto, 2021). Lecturer is an educator who has a central role in the educational process. Lecturers are responsible for transferring knowledge, skills, values, and ethics to students. They also act as learning facilitators, motivators, and companions in the holistic development of students. Lecturers interact directly with students in a campus environment or other educational institutions, and they have an important role in shaping students' development and progress (Djollong, 2017).

The industrial revolution 5.0 changes the role of lecturers from knowledge distributors to learning facilitators. Lecturers become mentors and companions who help students develop critical thinking skills, creativity, and the application of technology in various contexts (Muhali, 2019). The implementation of learning is not a simple, but a very complex activity. To be successful in transforming information and experiences, lecturers must have many strategies and experiences (Zulhafizh, 2021).

In addition, the industrial revolution 5.0 also affects learning methods by utilising technology. The use of artificial intelligence in personalising learning, augmented reality and virtual reality to enhance the learning experience, and the use of simulations and educational games are part of the innovative learning methods in the industrial revolution 5.0 (Yessi, 2021).

In the era of industrial revolution 5.0, characterised by advances in digital technology, social transformation and high connectivity, the role of lecturers faces new challenges that affect learning approaches and practices. This article explores the role of lecturers in the industrial revolution 5.0 era, as well as the challenges and opportunities faced in the face of social and technological changes. It also offers some strategies and competencies required for lecturers to optimise their role in educating the generation of the industrial revolution 5.0 era.

METHOD

This research uses a qualitative descriptive approach. According to Sugiyono (2005), the descriptive method is a method used to describe or analyse a research result but is not used to make broader conclusions.

With a qualitative descriptive approach, analysis of the data obtained (in the form of words, pictures or behaviour), and not poured in the form of numbers or statistical figures,

but by providing exposure or description of the situation or condition under study in the form of narrative descriptions.

The reason researchers choose a qualitative descriptive research design is because researchers want to describe the conditions that will be observed in the field more specifically, transparently, and in depth.

RESULTS AND DISCUSSION
The Role of Lecturers in the Era of Industrial Revolution 5.0

In the era of the industrial revolution 5.0, the role of lecturers has changed significantly in response to technological developments and the increasingly complex needs of society. Lecturers as learning facilitators, lecturers act as facilitators who facilitate an active, collaborative, and student-centred learning process. They encourage students to actively participate in learning, using technology, digital resources, and various other innovative learning tools (Tarihoran, 2019). Lecturers as guides of digital knowledge and skills, lecturers have an important role in developing students' digital knowledge and skills. They teach students about using technology wisely, digital ethics and cybersecurity. Lecturers also help students understand and use relevant digital tools to find information, communicate, collaborate and create work (Andriani, 2015).

Lecturers as motivators and supporters, lecturers act as motivators who inspire and provide support to students in facing challenges in the 5.0 revolution era. They encourage students to develop interest, intrinsic motivation, and confidence in the face of change and take risks in learning (Susanto, 2017). Lecturers are also career mentors, lecturers help students understand and explore various career options that are relevant to technological developments and the needs of society in the era of the industrial revolution 5.0. They provide information about educational pathways and job opportunities, and help students develop the skills needed to succeed in the world of work.

Lecturers must also encourage student creativity and innovation, lecturers play a role in inspiring and encouraging students to think critically, creatively, and innovatively. They provide space for students to explore new ideas, develop creative solutions to problems, and create original work using available technology and resources. As well as collaborators and learning networks, lecturers play a role in building collaboration and learning networks between fellow lecturers, students and other education stakeholders. They work together in designing relevant curriculum, sharing experiences and knowledge, and developing best practices in the use of technology in learning (Fahroji, 2020). Through these roles, lecturers become agents of change in creating a learning environment that is responsive to technological developments and the needs of society in the era of the 5.0 industrial revolution. They help students develop relevant skills, prepare them for a complex future, and contribute to the formation of a sustainable and innovative society.

Challenges for Lecturers in the Era of Industrial Revolution 5.0

In the era of the industrial revolution 5.0, lecturers are faced with several unique challenges that affect their roles and practices. Firstly, changing roles and skills. Technological developments and changes in the education paradigm affect the traditional roles of lecturers. Lecturers must adapt to become learning facilitators, guides and collaborators who encourage students to develop critical skills, creativity, collaboration and communication. Lecturers also need to master the use of technology and understand

how best to integrate it in learning (Lase et al., 2022). Second, the technology and accessibility gap. While technology is key in the industrial revolution 5.0 era, not all schools or regions have equal access to the technological infrastructure and resources needed. This challenge presents a technology gap between students and lecturers in various locations. Lecturers need to find creative and inclusive solutions to ensure that all students have a fair chance to access technology and its benefits (Fitriyadi, 2013). Third, changes in curriculum and learning. Technological developments and the needs of society in the era of the industrial revolution 5.0 demand changes in curriculum and learning approaches. Lecturers need to continuously update their knowledge and skills to ensure that they can teach relevantly and effectively (Mahanal, 2017). They must pay attention to technological developments and industry trends to prepare students with the skills needed in the real world. Fourth, digital security and ethics. In the era of industrial revolution 5.0, lecturers are faced with the challenges of digital safety and ethics. They must guide students in the responsible and safe use of technology. This involves understanding online privacy, personal data protection, cybercrime and ethical behaviour in the use of technology. Lecturers need to provide clear guidelines and help students understand the social and ethical impacts of using technology (Zubaidah, 2020). Fifth, changes in evaluation and assessment. Technological developments and innovative learning approaches in the industrial revolution 5.0 era also affect the way lecturers evaluate and assess student progress. Traditional methods of assessment may no longer be relevant enough. Lecturers need to find new ways to measure and evaluate students' skills and progress that fit the context and challenges of the digital society (Latif, 2020).

Faced with these challenges, lecturers need to act as lifelong learners and continuously develop their skills, knowledge and understanding of technology and changes in education. Collaboration with fellow lecturers, continuous professional development and increased co-operation with other education stakeholders are also important in addressing these challenges.

Opportunities for Lecturers in the Era of Industrial Revolution 5.0

In the era of the industrial revolution 5.0, there are various opportunities for lecturers to play a significant role in the rapidly developing world of education.

One of the opportunities that can be utilised by lecturers in the era of industrial revolution 5.0 is integrating technology in learning, technology plays a central role in the industrial revolution 5.0, and this provides opportunities for lecturers to integrate technology in the learning process. Lecturers can utilise digital tools, online learning platforms, educational applications, and other digital resources to create engaging, interactive, and relevant learning experiences for students (Nurdyansyah, 2017). Lecturers can also develop digital skills, as the industrial revolution 5.0 era demands the development of strong digital skills. Lecturers have the opportunity to be leaders in developing their own digital skills and helping students develop digital literacy, technological understanding, and expertise in using digital tools wisely (Astini, 2019).

Lecturers can also use project-based and collaborative learning models, the industrial revolution 5.0 era encourages student-centred learning, where students engage in collaborative projects and solve real problems. Lecturers have the opportunity to adopt project-based learning approaches that challenge students to work collaboratively, develop team skills, critical thinking, and creativity (Mahanal, 2017). With the advancement of

technology, lecturers have easy access to resources and information, in the era of industrial revolution 5.0 access to resources and information becomes easier through technology. Lecturers can utilise this access to supplement their curriculum with rich educational resources, interactive learning materials, and relevant educational content. This opens up opportunities to create more varied and immersive learning experiences.

Apart from the student aspect, lecturers must also carry out continuous learning for themselves, technological developments and trends in the era of the industrial revolution 5.0 require lecturers to continue to develop their knowledge and skills. Lecturers are required to be able to innovate because the pandemic is changing learning patterns (Zulhafizh, 2022). Lecturers have the opportunity to continue learning and keep up with the latest developments in technology, innovative learning methods, and developments in the field of education. This self- improvement will enable them to become innovating and competitive educational leaders (Zubaidah, 2020). Collaboration and professional networks must also be able to be utilised by lecturers to the fullest, the era of the industrial revolution 5.0 allows lecturers to connect and collaborate with fellow lecturers, experts, and other education stakeholders globally. Through collaboration and professional networks, lecturers can share knowledge, experiences and best practices in using technology in learning, as well as broaden their horizons about global educational developments (Sarah et al., 2019).

By capitalising on these opportunities, lecturers can develop innovative, relevant and impactful learning practices in the era of the industrial revolution 5.0. They can prepare students for future challenges, develop the necessary skills, and create a learning environment that encourages collaboration, creativity and problem- solving.

Strategies and Competences of Lecturers in Facing the Era of Industrial Revolution 5.0

Facing the era of the industrial revolution 5.0, lecturers need to develop certain strategies and competencies in order to be effective in fulfilling educational demands related to technological developments and increasingly complex community needs. Some important strategies and competencies for lecturers in facing the era of the industrial revolution 5.0 are: (1) Mastery of technology, lecturers need to have a deep understanding of technology that is relevant in the context of education. They should be able to use various digital tools, applications, software, and online learning platforms to enhance students' learning experience and facilitate interaction, collaboration, and creativity; (2) Project-based learning, lecturers need to adopt a project-based learning approach where students engage in real-world activities, collaborate in teams, and apply knowledge and skills in real-world relevant situations. This will help students develop critical thinking, problem solving, and creativity skills; (3) Collaboration and communication skills, lecturers need to develop strong collaboration and communication skills, both in physical and virtual contexts. They should encourage students to work together in teams, share ideas, provide feedback, and communicate effectively using a variety of digital communication tools; (4) Digital literacy and ethics, lecturers need to guide students in the development of digital literacy, including the ability to search, evaluate, and use information critically and ethically. They should pay attention to aspects such as online privacy, cybersecurity, and ethics in the use of technology; (5) 21st century skills development, lecturers need to develop 21st century skills in students, such as critical thinking, creativity, collaboration,

communication, and problem-solving skills. Lecturers must provide an environment that supports the development of these skills through relevant and contextualised learning activities; (6) Professionalism enhancement, lecturers must continuously improve themselves and commit to lifelong learning. They need to keep up with the latest developments in technology, innovative learning methods, and education-related research. Attending training, conferences and collaboration with peers are also important to continuously enrich knowledge and skills; (7) Classroom management skills, lecturers need to develop effective classroom management skills in the digital context. They must be able to manage online learning, facilitate student interaction and participation, and monitor student progress and engagement effectively; (8) Adaptability and flexibility, lecturers need to have high adaptability and flexibility in facing rapid changes in the industrial revolution 5.0 era. They must be ready to change learning strategies and approaches according to needs and technological advances.

By developing these strategies and competencies, lecturers will be ready to face challenges and utilise opportunities in the industrial revolution 5.0 era to create relevant, innovative and meaningful learning experiences for students.

CONCLUSION

Being a lecturer in the era of industrial revolution 5.0 is not an easy thing, there are various challenges of changing roles and skills, technology and accessibility gaps, changes in curriculum and learning, digital security and ethics, changes in evaluation and assessment. However, a professional lecturer will be able to solve these challenges by honing his skills and abilities to become a lecturer who is able to teach and educate students.

In addition, the industrial revolution 5.0 era provides opportunities and convenience for lecturers in conducting the learning process, integrating technology in learning, lecturers can also apply project-based learning models and collaboration and lecturers can also develop digital skills. Lecturers must consistently make changes in learning, lecturers must be able to innovate in terms of meeting the demands of technological development and the demands of the times. Lecturers are also required to be able to use existing technology to facilitate the learning process.

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