

Strategy for Digital Competence Development of Economics, Business and Accounting Lecturers : Human Capital Theory Review

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Abstract: This study aims to analyze strategies universities can use to develop appropriate digital competencies for economics, business, and accounting lecturers and also provides an overview of the framework. This study employed a narrative literature review method with a qualitative approach consisting of several steps: compilation, tabulation, research result comparison, and summarization. The literature sources were the related articles dated within the last 15 years (2009-2023) acquired from reputable international journal sites (Emerald, Elsevier, Springer, Routledge, and MDPI). Content analysis technique was used to analyze the data. The results of this study showed that some existing frameworks in the world rarely include digital ethics dimensions. The digital competency framework for accounting lecturers consists of several elements, including the capacity to use digital sources, assessments, teaching and learning processes, as well as empowering digital literacy for students, small and medium-sized enterprises' people (UMKM), and also now BUMDES' people as well. Strategies that can be carried out by universities in developing human capital for lecturers of economics, business, and accounting in digital competence are by approaching the human capital component through university policies, providing organizational infrastructure and culture (Organization Climate), strategic leadership, or currently being able to adopt digital leadership (leadership component), and various training according to the needs and areas of expertise of lecturers.

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Introduction

Technology advancements in the 21st century bring new educational trends (Hakim, 2023). To carry out the tri dharma of higher education in the digital era, lecturers can utilize technology (Rusilowati & Pratiwi, 2022). However, lecturers need help with digital competency and equipping students with 21st-century skills (Mutohhari et al., 2021). Therefore, today's lecturers must transform into 21st-century lecturers who are professional, adept at implementing technology, and capable of inspiring Generation Z.

Regarding technological advancement, issues that economics, business, and accounting lecturers face are quite different from lecturers in other study programs. The first consequence is that besides fulfilling their obligation to equip their students with job skills, economics and business lecturers must also provide the necessary understanding of ICT (Information and Communication Technology) to use the digital economy. According to



ec.europa.eu (accessed on May 30, 2023), 85-90 percent of future occupations would require ICT skills.

The second consequence is that lecturers must now provide education and service programs to business people and small, medium-sized enterprises because digital transformation has penetrated the business sector. Technology advancements have merged the physical, digital, and biological worlds, and that will affect all disciplines, economies, and industries. Digitalization will enable Industry 4.0 to become the cornerstone of the modern industrial economic society. Therefore, lecturers must constantly improve their digital skills.

The role of lecturers at higher institutions is closely related to human capital theory. In general, human capital (HC) is regarded as an investment activity because humans are considered as a resource that acts as capital that generates return and expenditure and aims to develop the quantity and quality of capital. The essential role of lecturers as human capital helps higher education bridge the gap between the business, technology, industry, and teaching worlds. HC is an essential aspect of implementing good management practices in order to accomplish organizational goals and qualities. This statement is supported by (Pedro et al., 2019) that HC is considered to play a critical role in improving organization performance, including educational organizations, whose effort is to achieve three primary missions: research, teaching, and sustainable economic and social development

Lecturers' digital competence becomes non-negotiable because digitalization has changed the lecture's profile. Lecturers must be digitally competent in utilizing technology. According to Redecker (2017), lecturers' digital competence is categorized into six areas: 1) professional involvement, 2) digital resources, 3) teaching and learning, 4) assessment, 5) student empowerment, and 6) digital competency of students amid technology advancement. In fact, the exponential growth of technology has not been matched by lecturers' digital competence. According to information obtained from ec.europa.eu on May 27, 2022, more than 1/3 of the workforce in OECD countries reported having a deficient capacity to utilize digital technology productively, while 56% of each population lacked ICT skills. Lecturers in Spain also admit to having poor digital competence, as evidenced by the findings of Ruiz-Cabezas et al. (2020), who discovered that the lecturers feel they do not have the skills to use ICT (websites, platforms, etc.) to teach at the universities they work. Venegas-Ramos et al. (2020) also discovered that many lecturers use technology less than they would want because they lack the skills and confidence to use ICT.

Mexico is likewise affected by the same situation. Kapici and Akcay (2023) performed a recent study of 20 public and private higher education in Mexico, and the findings revealed that lecturers have digital competence at medium and low levels. The most effective digital competencies mastered by Mexican lecturers relate to the lecturer's dedication and social obligation in using ICT. Portugal also experiences the situation. According to Santos et al. (2021), lecturers in their higher education need a better degree of digital competence in assessment using the DigCompEdu model. Indonesia is likewise dealing with the same issue. Rahmi and Cerya (2020) prove that the digital literacy of entrepreneurship lecturers in one of the state universities in Indonesia is in the sufficient category in terms of indicators of digital content production and business ethics in the digital world. The issue of lecturers' digital competency from many countries, including Indonesia, serves as the foundation for future research into the best method for overcoming the problem.

Much earlier research on digital competence has been conducted. Basantes-Andrade et al. (2022) conducted a systematic literature review on 26 articles (2015 to May 2022) and discovered several research topics related to digital competence. Thirty-six percent of studies discussed teacher training, 15% developed four models that focused on lecturer training for

developing digital competencies, and 19% discussed digital competencies instruments to assess the level of training possessed by lecturers. Then, 15% developed a training strategy, and the remaining 15% compiled a clear and systematic description of how to construct the framework of digital competency training. However, the 2017 Horizon Report (Alghamdi, 2020) on higher education suggests highlighting the importance of increasing lecturers' competence in the field of ICT, as well as the need for continual training to develop lecturer abilities and ensure gradually the implementation of various teaching models at universities (e-learning, m-learning, adaptive learning, and so on).

This study aims to analyze strategies universities can use to develop appropriate digital competencies for economics, business, and accounting lecturers and offers an overview of the framework. This study's results can guide policymakers at Indonesian universities in developing lecturers' digital skills, particularly those in economics, business, and accounting. With the results of the policy, it is hoped that it will encourage economics lecturers to have digital skills in the academic field to provide digitalization education to their students.

Research Method

This study employed the narrative literature review method with a qualitative approach, which is an attempt to find a specific topic or issue by gathering data from various scientific reading sources, which will later be integrated into a new scientific paper that identifies several studies that describe interesting problems. This method and approach consist of four steps: compilation, tabulation, research result comparison, and summarization. The articles collected were taken from reputable Scopus-indexed international journal sites (Emerald et al.). Digital competencies framework, digital competence lecture, and higher education were the keywords to be used for searching international journal articles. Then, relevant articles were chosen and examined to answer research questions. Fifty articles were chosen based on the following criteria: open access, full-text journals, indexed journals, publication dates dominated by the previous 15 years (2009-2023), and relevance to the topic being discussed. The article search took place between May 27 and June 3, 2023. The collected data was then analyzed utilizing the content analysis technique. Downe-Wamboldt (1992) defines content analysis technique as a data management technique that provides a systematic description and tries to draw accurate conclusions vocally, visually, or in writing, as well as to describe and assess a particular phenomenon.

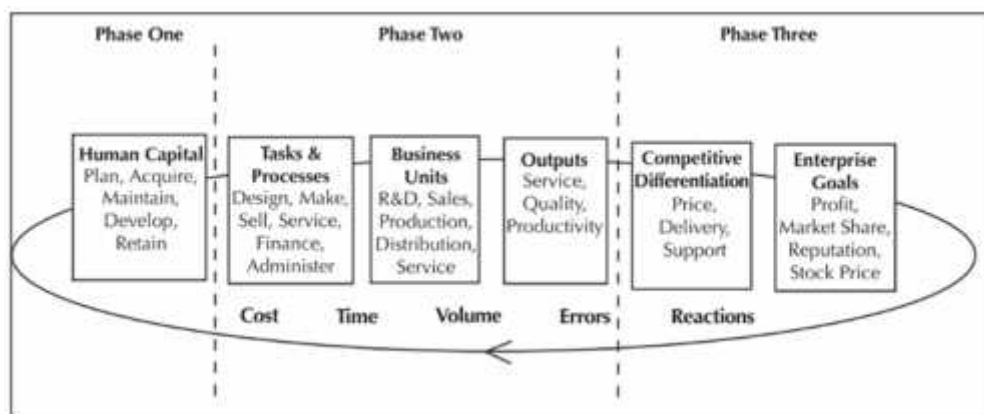
Results and Discussion

The digital competency framework for economics, business, and accounting lecturers, and its relationship to higher education purposes

Human capital is considered the key point that can drive humans' intellectual as a generator of business value. Lecturer human capital includes all competencies possessed by lecturers since birth as well as competencies developed by lecturers throughout their lives. Humans have the ability to transform data into something valuable for an organization. The phase that happens is divided into three parts. The first phase is a cycle that consists of obtaining, supporting, and retaining human capital. Utilization of human capital leads to increased internal efficiency in the HR department, which then leads to cost savings. Improvements in cycle times, development programs, increased employee involvement, or incentive compensation plans can all have impacts on earnings. In the second phase, human capital is applied to processes and activities in various business units. It then decides whether

the advantage may be attributed to human activity in part. The third phase focuses on competitive qualities that contribute to the entity's economic objectives.

Picture 1. The Phase of Data into Value (Source: Fitz-enz, 2009)



Human capital management in higher education is carried out by adopting human capital management in the concept of strategy map Kaplan & Norton, (2004). Human capital management stages include (1) identifying human capital readiness using a strategy map, (2) developing human capital, and (3) measuring human capital. The first stage, according to (Kaplan & Norton, 2004), tries to identify individual readiness for development. The process of strategy identification involves a strategic job. The second stage is the development of competency profiles, which consist of knowledge, skills, and values needed by lecturers in carrying out the main tasks and applying the functions of higher education or tri dharma. The last stage, assessing human capital readiness, is done by assessing existing lecturers' capabilities and competencies for the implementation of strategic job families. The readiness of human capital is very important. According to Hendarman et al. (2021), the readiness of human capital as an intangible asset is measured by deciding if employees have the talents, expertise, and abilities to apply new concepts and whether it influences higher education experience and learning.

To maximize the value of higher education, a digital competence framework for lecturers is required. This framework can help higher education to know the validity of the needed competencies and can be utilized to build lecturer development strategy. After analyzing all the articles, there are several versions of the digital competence framework:

Table 1. Various Digital Competence Frameworks in the World

No.	Framework Name/Country	Dimension	Writer
1	The HeDiCom framework (Australia)	Teaching practice, Empowering students for a digital society, Teachers' digital literacy, Teachers' professional development, Educators' Pedagogic	Tondeur, et al.,(2023)
2	EDC (Educators' Digital Competence) Framework (Europe)	Competences Learners', Competences Professional, Engagement and Collaboration Organizational Communication	UNICEF (ECARO) 2017
3	The Digital Competence Framework for Educators (DigCompEdu) (Europa)	Professional Engagement, Digital Resources, Teaching and Learning, Assessment, Empowering Learners, Facilitating Learners' Digital Competence	Redecker & Punie (2017).



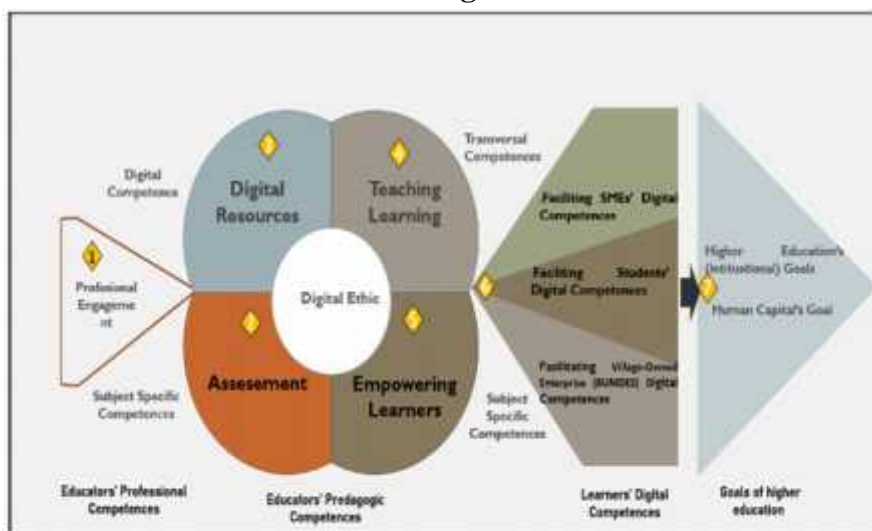
No.	Framework Name/Country	Dimension	Writer
4	UNESCO ICT Competence Framework for Teachers (CFT)	Understanding ICT in education, Pedagogy, Teacher professional learning, Curriculum and assessment, Organization and administration, Application of digital skills	(UNESCO, 2008, 2013, 2023).
7	ISTE Standards for Lecturers	Empowered Learner, Knowledge Constructor, Computational Thinker, Global Collaborator, Innovative Designer, Creative Communicator, Digital Citizen	ISTE Standards (2021)
9	A framework for digital competences of lecturers (Australia)	Designing, Implementing and Evaluating Education; Professional Behavior as A Lecturer, Lecturers' Digital Literacy, Students Empowerment for A Digital Society	Tondeur et al., (2022)
10	National Framework for Teachers' Professional Digital Competence (PDC) (published di Norway,	Ethics, Leadership in learning processes, Interaction and Communication, Pedagogy and Subject Didactics, School in Society, Subjects and Basic Skill	Kelentric, Helland, & Arstorp, (2017)
11	Professional Digital Competence Framework for teachers	Knowledges, kills, competencies of the teachers.	Kelentric et al., (2017)
12	Digital Intelligence (DQ) framework	digital safety, security, emotional intelligence, communication, literacy, right, identity	DQ Institute (2017)
13	Digital Competence Framework for teachers	internet surfing, browsing, data evaluation, interaction, collaboration, communication and sharing the content, creating digital content solving content-related problems, and digital safety	NIOET, (2017)
14	Digital Teaching Professional Framework for teachers	use digital resources for instructional planning, comprehending novel consequences, encouraging learners to enhance digital capabilities, content extraction in teaching and learning, use of resources for assessment and feedback, accessibility.	ETF (2018)
15	Competency Profile for the Digital Teacher (CPDT) framework	professional environment under educators' professional competencies under educators' pedagogical competences, and digital creative resources, digital creative pedagogies, creative assessment, learner's empowerment, learner's digital creativity under learners' competencies	Ally (2019)
16	Digital Competency Framework for students and teachers	digital resources for learning, information literacy, innovation and creativity, critical thinking problem-solving, personal and professional development, inclusion and diversity needs, content production communication and collaboration incorporating ethical citizenship.	Government of Quebec GoQ, (2019)
17	Digital Competency Framework for teachers	digital resources, professional development, and collaboration, educational activities, and facilitating learners' digital competencies.	European Union, (2019)
18	The TPACK framework	Intersections in the framework: Technological Pedagogical Knowledge (TPK), Technological Content Knowledge (TCK), Pedagogical Content Knowledge (PCK)	Koehler, Mishra, & Chain (2023)

Based on the comparison of digital competency frameworks in Table 1, it is discovered that digital ethics is still not included in developing digital competencies. Even according to its definition, competency includes not only knowledge and skills but also attitudes. This viewpoint implies that digital ethics should become one of the dimensions of digital competence. Digital ethics is an individual's capacity to recognize, exemplify,

consider, rationalize, adapt, and build netiquette in life. The idea of including digital ethics is also relevant to the fields of economics, business, and accounting. This dimension is critical for equipping economics students as future economists, entrepreneurs, or accounting professionals to carry out their duties ethically. Another reason is that economics, business, and accounting lecturers frequently become teachers or consultants for business people. So, lecturers need digital business ethics to be transferred to business people. This is also a manifestation of the moral responsibility of higher education to instill ethics in stakeholders.

More specifically, lecturers from the faculties of economics and business are facilitators not only for students but also for entrepreneurs, small and medium-sized enterprises people, Village-Owned Enterprises (BUMDES), owners of tourist objects, and others who require assistance with digitalization in the economic and business fields. The findings of the framework comparison in Table 1 are used as a reference to create a specific framework based on the needs of the fields of economics, business, and accounting. When visualized in Figure 2, the digital competency framework for economics, business, and accounting lecturers, as well as stakeholders toward higher education and human capital goals, is as follows:

Picture 1. Digital Competence Framework of Economics, Business, and Accounting Lecturers



Picture 1 depicts how a lecturer's role in the twenty-first century requires not only special skills in the scientific subject (e.g., economics, business, and accounting) but also digital competency. These two competencies will support the pedagogical competence of a lecturer in utilizing technology, learning teaching processes, assessments, student empowerment, and, more broadly, putting the Tri Dharma (education, training, and service) into action. Digital ethics is important in all aspects of pedagogical competence implementation. The purpose of student empowerment activities is to transfer all transversal skills (soft skills required in the twenty-first century) and competencies in economics, business, and accounting. The students here include students in higher education, small and medium-sized enterprises people, BUMDES people, and other stakeholders. This will make the goals of higher education in serving the community and creating human capital. The components of lecturer human capital that influence the achievement of the university's goal are divided into four groups: core components, supporting components, processing components, and output components. To compete in the future, higher education's vision and goal must be connected with human resource development (Arifin, 2017).

Strategy for Digital Competence Development of Economics, Business, and Accounting Lecturers

Human resource development is becoming an increasingly vital and strategic need in today's organizations. A comprehensive approach is needed to develop digital competence for economics, business, and accounting lecturers. Human capital development requires a combination of organizational learning strategy, enhancing learning strategy, effective training workshops, formal training outside of the workplace, and a hybrid strategy that incorporates all of these. Ways to improve lecturer digital competence include (1) developing and further adapting electronic information in a higher education environment centered on study portals, (2) improving the content of advanced professional education syllabus as an invariant component of lecturer digital competence, (3) arranging advanced professional education using e-learning information and education, and (4) organizing scientific, methodological, and coaching assistance for new activities in lectures.

Basically, discussion about digital competence is an interesting matter because several studies also link this theme to the fields; (1) Policy (Newland & Handley, 2016), (2) providing organization infrastructure (Newland & Handley, 2016), (3) Strategic leadership (Hatlevik & Arnseth, 2012); (van Niekerk & Blignaut, 2014); (Blau & Shamir-Inbal, 2017) and, (4) teaching and learning processes in education (Tondeur et al., 2023). Based on the results of the analysis of this research, it can be concluded that it uses a human capital approach. The following is an explanation of each field:

Policy (University Policy and Curriculum)

The development of lecturer digital competence in the policy sector will simplify the implementation of development activity. Many lecturers support the university's strategic commitment to digital transformation. In addition, they will also receive support from the entire team at the university, including senior management. Through this policy, an agenda of activities can be formulated to support the policy for developing digital competence for lecturers. A well-implemented activity agenda will result in changes in higher education and, eventually, the achievement of higher education goals in the digital era.

Indonesia's Ministry of Education and Culture has started expanding digital literacy training programs. However, this is still about to begin and has not yet been implemented, which is digital competence training. Furthermore, the Ministry of Communication and Informatics is in charge of digital skill development through the 2021-2024 Digital National Roadmap, which focuses on digital skill development as a critical emphasis for achieving the country's digital readiness and competitiveness goals.

The concept of digital competence is the capacity to explore various new technological situations, such as analyzing, selecting, and evaluating data and information by utilizing the potential of technology to solve problems. In this concept, it is stated that there is the use of technology. The provision of technology in higher education is required to build digital competence, and it can provide ICT equipment. Therefore, research on the capabilities of higher education institutions to supply infrastructure is one of the strategies for increasing digital competence for lecturers.

Strategic leadership: The strategy for developing digital competence for lecturers must be formulated and decided carefully by the leader. Higher education leaders have a role in adding ICT and digital competence policy into realistic goals and ensuring that this digital world supports all activities in school. The leader's choice encourages lecturers to employ technology in the classroom.

Training: Training is still used to develop various competencies, including digital ones. The development of digital competence for economics, business, and accounting lecturers has

various designs and is adapted to the needs and scientific fields of the lecturers. The following Table 2 is the search results from various previous studies:

Table 2. Various Trainings as Strategy for Lecturer Digital Competency Development

No.	Strategy	Writer (year)
1	Specific training, especially regarding the pedagogical use of technology	Dias-Trindade & Ferreira (2020)
2	Establishment of collaborative teacher networks or learning communities (informal communities)	Montoro et al., (2015)
3	Development of online resources to build competency with 'Cloud Coach'	Clark et al., (2003)
4	The t-MOOC architecture for the development of lecturer digital competencies	Barragán Sánchez et al., (2022)
5	NANO-MOOCs to train lecturers' digital competence	Basantes-Andrade et al., (2022)
6	ICT Training	Zempoalteca (2017)
7	ICT & Initial Teachers Training	2019
8	Sociocultural approach	Colás-Bravo, P., Conde-Jiménez, J., & Reyes-de-Cózar, S (2019)
9	Supporting evolving digital badging practices	Kullaslahti, J., Ruhalahti, S., & Brauer, S (2019)
10	Collaborative learning approach	Langset, I., Jacobsen, D., & Haugsbakken, H (2018)
11	NOOCs	Pérez, L., Jordano, M., & Martín-Cuadrado, A (2017)

Conclusion

The conclusions obtained from the results of this study are :

- 1) Higher education must manage lecturer human capital. Some frameworks in the world can be used as a reference, but they still need to include digital ethical dimensions; therefore, this study offers a digital competence framework draft for economics, business, and accounting lecturers. The digital competence framework for accounting lecturers consists of several dimensions, including the capacity to use digital sources, assessments, teaching and learning processes, and empowering digital literacy for students, small and medium-sized enterprises' people (UMKM), and now BUMDES' people.
- 2) Strategies that can be carried out by universities in developing human capital for lecturers of economics, business, and accounting in digital competence are by approaching the human capital component through university policies, providing organizational infrastructure and culture (Organization Climate), strategic leadership, or currently being able to adopt digital leadership (leadership component), and various training according to the needs and areas of expertise of lecturers.

Recommendation

Based on the results of this study, recommendations that can be included are:



- 1) Higher education should use a more specific framework as a reference for developing strategies to increase the digital competence of economics, business, and accounting lecturers.
- 2) Lecturers are expected to actively participate in the success of policies related to digital competency acceleration.
- 3) The next researcher to follow up in reviewing the similarities and differences between the existing digital competency frameworks can be done by developing the framework in an interactive approach through meetings with policymakers, education technology professionals, and practitioners.

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