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*Journal of Qualitative Research in Education*
*Eğitimde Nitel Araştırmalar Dergisi*

# Exploring Faculty Digital Competencies in the Context of Online Course Delivery: An Analysis Based on DigCompEdu*

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**To cite this article:**

Kocatürk Kapucu, N., Adnan, M., Duman, B. (2025). Exploring Faculty Digital Competencies in the Context of Online Course Delivery: An Analysis Based on DigCompEdu. *Journal of Qualitative Research in Education*, 43, 24-59. DOI: 10.14689/enad.43.2076

**Abstract**

In the current era, the development of digital competencies among educators is of significant importance for the creation of a digital-age-compatible society and the assurance of its long-term sustainability. Given the pivotal role of higher education within innovation dissemination, the enhancement of digital competencies among academics and students may help facilitate societal digitalization via indirect impact. It is widely acknowledged that enhancing the digital competencies of academic staff represents a critical step in fostering digital transformation within higher education. The objective of this study is to examine the digital competencies of instructors in their utilization of instructional technologies in distance education. The study analyzed online courses and conducted interviews as an indicator of the digital competencies of instructors employed at Muğla Sıtkı Koçman University. Data on instructors' digital competencies and their technology usage within online courses were collected through interviews with volunteer participants using an interview form prepared based on the European Framework for Digital Competence of Educators (DigCompEdu) and course analyses using a prepared rubric. The interview data together with the course review results were found to be compatible in terms of the instructors' digital competencies.

**Keywords:** digital competence, open and distance learning, online courses, faculty members.

**About the Article**

Submitted Date: Jan. 06, 2025

Revised Date: Apr. 18, 2025

Accepted Date: May. 25, 2025

**Article Type:**

Research



* This study is based on a part of Nurhayat Kocatürk Kapucu's PhD thesis.

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## Introduction

The advent of digital technologies has brought about transformative shifts in learning and teaching environments, with notable increases in the durability of these changes. To consolidate progress and ensure sustainability, educational institutions must develop their capacity for innovation and review their institutional strategies to exploit digital technologies to their full potential. Digital technologies represent a primary driver behind the modernization of educational systems. This process has led to a notable increase in the importance of open and distance learning activities, particularly within higher education. Consequently, the utilization of digital technologies in learning and teaching activities is no longer confined to open and distance learning, but has also become a prominent feature in face-to-face courses. From these developments, it has become imperative for instructors to leverage digital technologies for their personal and professional development, and to exemplify the integration of technology in teaching and learning for their students. The current study focuses on faculty members' digital competence and their utilization of technology for teaching and learning within higher education.

During the COVID-19 pandemic, emergency remote teaching protocols meant instructors at all levels of education had to suddenly move their courses to online platforms. This resulted in the implementation of procedures and activities that would normally have required a long preparatory period, but instead happened with little or no preparation. Despite the extraordinary efforts of institutions to continue teaching and learning through online education, significant challenges were experienced practically worldwide, with Turkey no exception, in terms of resource management, Internet access and device availability, logistics, as well as instructional processes (TEDMEM, 2020). Challenges regarding instructors' lack of knowledge and experience in online teaching became evident due to limited or lacking institutional support, with various solutions used to address these issues. However, the caliber of the support and of the online courses was rarely questioned during the emergency period itself. Nevertheless, educational institutions have a responsibility to ensure the quality of their online education through investing in the professional development of their teaching faculty. During the pandemic, many educational institutions attempted to plan and rapidly implement training and informative activities to enable faculty members to teach online. However, preparing instructors for new roles to teach online with new knowledge and skills is only really possible through well-planned, purposefully designed, coordinated, and unique professional development programs (Kocatürk-Kapucu & Adnan, 2018). Hence, educational institutions are provided with several baseline documentation for guidance by expert institutions such as the European Commission's Digital Education Action Plan 2021-2027 and the European Strategy for Universities (European Commission, 2022) regarding upskilling activities to promote the efficient use of digital technologies within educational environments.

Digital technologies used by instructors in the classroom are considered indicative of their digital competence (Artun & Günüç, 2016; Keleş & Turan-Güntepe, 2018; Kır,

2020; Orhan & Tekin, 2019; Ruiz-Cabezas et al., 2020). The current study aims to reveal faculty members' digital competences through analysis of their online courses and in-depth interviewing.

## Digital Competence: A Key Competence for Lifelong Learning

Competence is defined as "proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and professional and personal development in terms of responsibility and autonomy" (European Union, 2008). Within the framework of lifelong learning, the European Union identified "key competences" for all member state citizens in 2006 for lifelong learning and adaptation to societal changes in a volatile era. The Recommendation of the European Parliament and European Council (December 18, 2006) set out eight key competences for lifelong learning as essential for personal growth, participation in civic life, social inclusion, and employment (European Union, 2006):

1) Communication in the mother tongue;
2) Communication in foreign languages;
3) Mathematical competence and basic competences in science and technology;
4) Digital competence;
5) Learning to learn;
6) Social and civic competences;
7) Sense of initiative and entrepreneurship; and
8) Cultural awareness and expression.

Digital competence refers to the safe, critical, and creative use of information and communication technologies in personal and professional contexts. This skillset aims to empower students' competence in performing necessary tasks through problem solving, communication, information management, collaboration, creativity, and content sharing. Knowledge should be structured and information-communication technologies and digital media should be used in an effective, efficient, appropriate, critical, creative, autonomous, flexible, ethical, and reflective style at the appropriate time to promote participation, learning, socialization, and knowledge dominance (Ferrari, 2012). In today's society, digital competence is considered both a necessity and a right for all citizens and is supported by basic skills such as using computers to access, assess, store, produce, and exchange information, and to communicate within collaborative networks via the Internet (European Union, 2006; Ferrari, 2012). Although there are ambiguities regarding the practical meaning of digital competence, the common view is that competence can be analyzed and classified based on knowledge, skills, and attitudes; and several studies have been conducted for different contexts (e.g., Cheetham & Chivers, 2005; Dias-Trindade & Albuquerque, 2022; Kampylis et al., 2015; Mora-Cantallops et al., 2022).

Various digital competence frameworks have been developed to assess competence development, provide common benchmarks for comparison, analyze conditions, and

evaluate the digital competence development of citizens, students, and educators (Mattar et al., 2022; Velandia-Rodriguez et al., 2022). These include the ISTE Standards, Technological Pedagogical Content Knowledge (TPACK), UNESCO's Information and Communication Technologies Competence Framework for Teachers, the European Framework for Digitally Competent Educational Organisations, the Digital Competence Framework for Citizens (DigComp), and the European Framework for the Digital Competence of Educators (DigCompEdu).

Cabero-Almenara, et al. (2020) assessed various frameworks, including DigCompEdu, the ISTE Standards, and UNESCO's ICT Competency Framework. Involving experts and higher education lecturers, they revealed DigCompEdu as the preferred choice for enhancing educators' digital competence. Tondeur et al. (2023) recently introduced a novel framework (HeDiCom: Digital Competence Framework for Higher Education) developed through comprehensive analysis of existing frameworks to guide instructor digital competence.

Digital Competence in Higher Education

Higher education institutions are crucial to preparing students for today's 21st-century demands by developing the necessary knowledge and skills. To fulfill this responsibility, institutions should effectively integrate current information and communication technologies into both administrative and instructional practices within a well-structured framework (Nişancı, 2005). Today's higher education instructors need to be skilled in using digital technologies, including communicating with students and colleagues and incorporating digital tools into their teaching, as well as for self-improvement and improving educational quality (Duman, 2011). Digital competence helps enhance teaching quality and student skills (Tondeur et al., 2023), and is also crucial for guiding students' digital proficiency (Timur et al., 2014).

Expecting instructors to be digitally competent and excel in various other roles is unrealistic (e.g., competent subject area expert, successful researcher, active teacher) (Cleveland-Innes, 2013), but an awareness of online teaching roles and technology support is nevertheless important. Hence, every instructor should integrate digital skills into their teaching (Cleveland-Innes, 2013) and should prioritize modern instructional technologies for knowledge-based activities (Bates, 2015) and embed digital skills into their expertise. Grammens et al. (2022) summarized instructor competences for synchronous online learning and highlighted the multifaceted benefits of integrating digital technologies in assessing students' readiness, identifying interests, and enhancing motivation. Incorporating digital tools in materials design and timely feedback through digital tools not only addresses individual needs, but also boosts learning outcomes and motivation (Alvarez-Valdivia et al., 2009). Elevating online instructors' proficiency improves the overall efficiency of online learning environments.

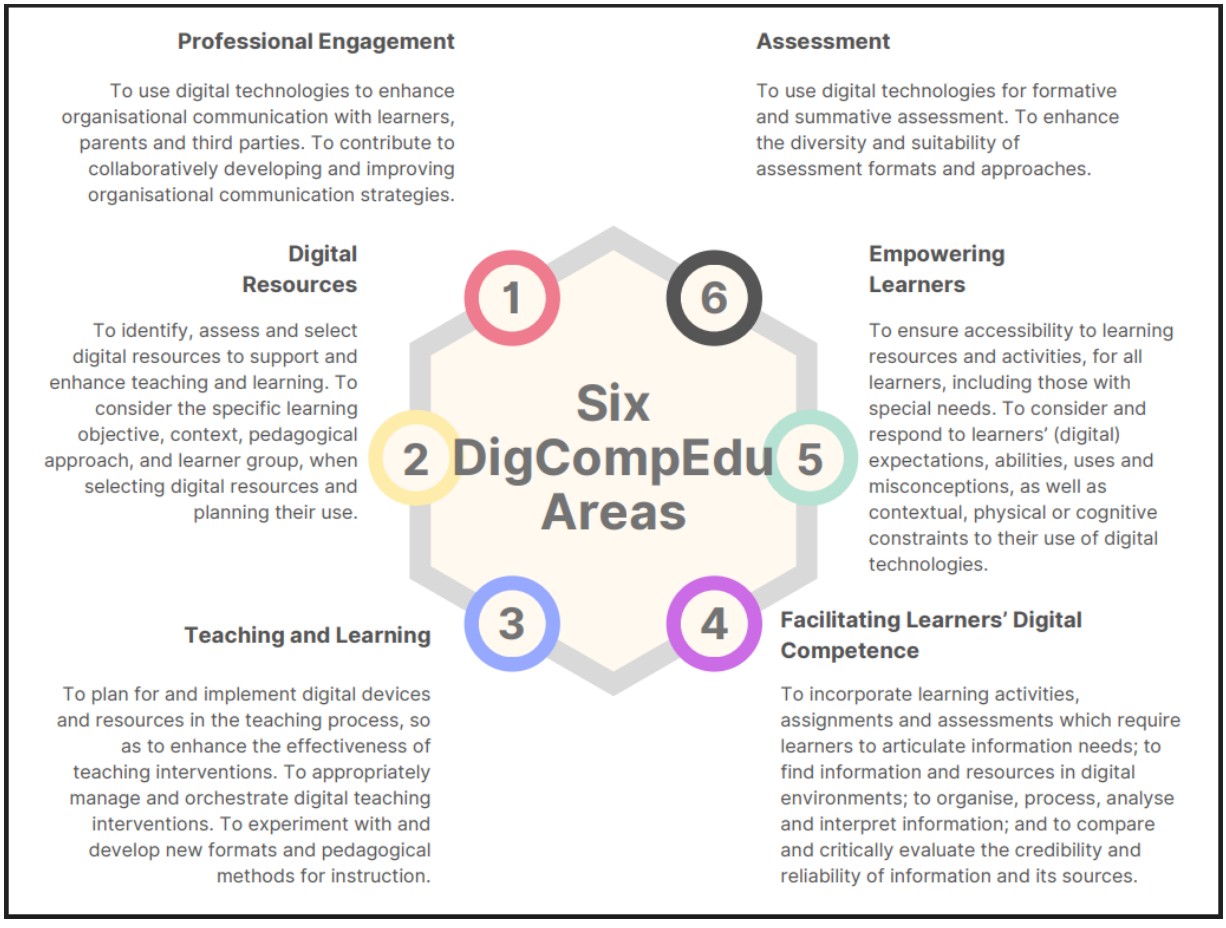
European Framework for the Digital Competence of Educators

The European Framework for the Digital Competence of Educators (DigCompEdu) is a scientific framework developed in the context of research on Learning and Skills for the Digital Age. Launched in 2005 by the Joint Research Centre of the European Commission, the aim was to provide evidence-based policy support on the role of digital technologies in education and training processes, and to specify the digital competences required for employment, personal development, and social inclusion (Redecker & Punie, 2017). DigCompEdu responds to the growing awareness among many European states that educators need a set of digital competences specific to their profession in order to realize the potential of digital technologies to develop and innovate.

DigCompEdu's six core competence areas focus on different aspects of educators' professional activities (Figure 1).

**Figure 1.**

*Definitions of DigCompEdu Core Competency Areas (illustrated from Redecker & Punie, 2017)*



DigCompEdu sets out 22 competences organized in six areas and with six competence levels (A1, A2, B1, B2, C1, C2) and addresses educators at all levels, from preschool to vocational, higher, and adult education. The framework's focus is to support and encourage educators to utilize digital tools to improve and innovate education (Figure 2).

DigCompEdu's six core competence areas and 22 sub-competences detail the skills that educators need in order to promote effective, inclusive, and innovative learning strategies using digital tools. Through analyzing these details, teaching materials and assessment tools can be developed that align with the framework. Figure 3 details competence level descriptions for the DigCompEdu framework (Redecker & Punie, 2017).

**Figure 2.**

*DigCompEdu's Core and Sub-Competences (Redecker & Punie, 2017)*

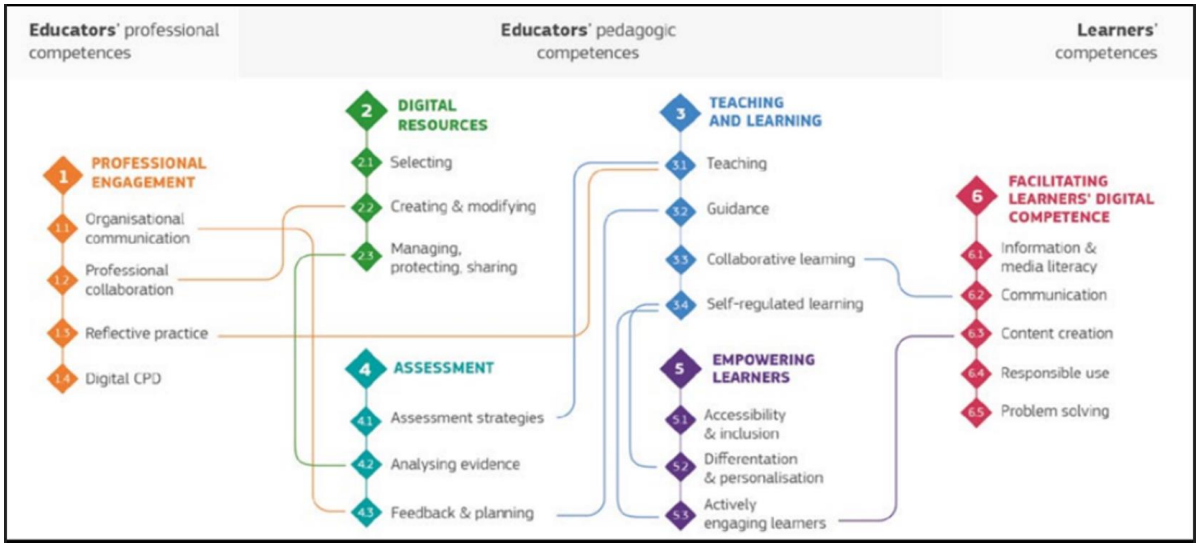
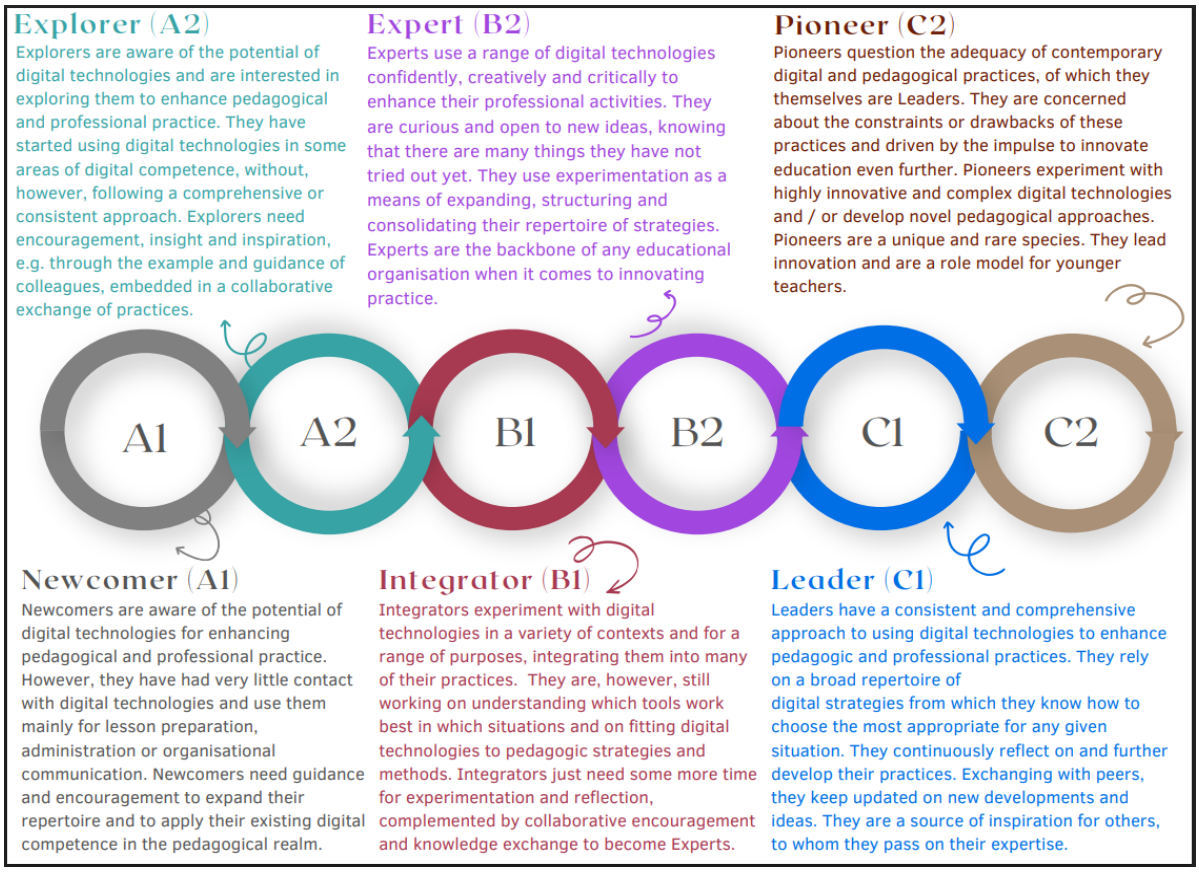


**Figure 3.**

*Descriptions of Digital Competence Levels*




Quantitative studies aimed at determining instructors' digital competence levels may use DigCompEdu or similar frameworks, yet it would be difficult to obtain complete and accurate results due to the indirect measurement process and the self-reflection of participants' perceptions. From this starting point, the current qualitative study investigates the digital competence level of faculty members in relation to their actual technology usage within online courses. Taking the DigCompEdu framework as the determinant of digital competence, the study seeks to understand faculty members' digital competence based on learning management system data as well as narratives of experiences through in-depth interviews.

## Method

### Research Design

The study was conducted within a project focused on improving and evaluating faculty members' digital skills, funded by the Scientific and Technological Research Council of Turkey (TUBITAK; Project 122K043), and consisted of four main stages (see Table 1).

**Table 1.**

*Project stages*

| Stage 1 | Stage 2 | Stage 3 | Stage 4 |
|---|---|---|---|
| Development and administration of the Digital Competence Scale for Teaching Staff to assess digital skills | Participant classification based on digital competency levels | Interviews conducted with voluntary participants | Analysis of online courses offered by interviewees |

This paper presents results of stages three and four, and was designed as a case study. Case studies delve into present phenomena within their real-life contexts (Yin, 2003), aiming to unveil a final product from field-oriented research (Merriam, 2018). According to Creswell (2003), case studies enable the acquisition of profound insights about subjects, often exploring their outermost edges, through in-depth analysis of a limited study cohort.

The current study was two-phased, with participating faculty interviewed face-to-face or online to uncover their perceived integration of technology into online courses, linked to their digital competences. Then, document analysis of the participants' online courses offered via the institutional learning management system aimed to ascertain their actual technology utilization. Document analysis is a systematic method involving the assessment of both printed and electronic materials (Corbin & Strauss, 2012). Combined with other qualitative data collection methods (e.g., interview, observation), it bolsters research validity through triangulation (Yıldırım & Şimşek, 2013). To ensure a comprehensive understanding of the interview content, the current study meticulously examined how instructors employed instructional technologies within their online courses. This was facilitated by carefully devised rubrics, enabling methodical and rigorous data evaluation.

## Study Group

The study's participants were faculty members of Muğla Sıtkı Koçman University (MSKU) in Turkey. Purposive random sampling technique was used, wherein a small number of analytical units were randomly selected from a larger population.

Faculty members teaching online courses were emailed, and 50 instructors volunteered to take part. From the pool of 50 instructors, an initial study group of 10 participants was formed to ensure optimal diversity considering their study field, academic title, and digital competence level. In selecting interview participants, particular attention was given to including two representatives from each digital competence tier (see Table 2).

**Table 2.**

*Distribution of Interviewed Participants*

| Participant Code | Digital Competence Score | Digital Competence Level | Title | Discipline |
|---|---|---|---|---|
| P1 | 67 | A2 Explorer | Assistant Prof. | Social Sciences |
| P2 | 66 | A2 Explorer | Associate Prof. | Health Sciences |
| P3 | 79 | B1 Integrator | Associate Prof. | Natural Sciences |
| P4 | 95 | B1 Integrator | Professor | Social Sciences |
| P5 | 95 | B2 Expert | Associate Prof. | Education |
| P6 | 108 | B2 Expert | Associate Prof. | Education |
| P7 | 129 | C1 Leader | Assistant Prof. | Education |
| P8 | 116 | C1 Leader | Professor | Natural Sciences |
| P9 | 132 | C2 Pioneer | Instructor | Social Sciences |
| P10 | 130 | C2 Pioneer | Instructor | Education |

Interviews were conducted to assess participants' technology integration in their online classes as an indicator of their digital competence. Following 10 interviews, a preliminary data review revealed that data saturation had been attained, with no further interviews deemed necessary.

## Data Collection

### *Interviews*

An interview questionnaire was formulated based on the six competence areas outlined within the DigCompEdu framework. Primary and follow-up questions were devised to reveal the participants' perceived digital proficiency levels and their technology usage within online instructional settings. The developed questions were subjected to expert review, and necessary refinements were applied based on their feedback.

Interviews can encompass various query types (e.g., experiential or behavioral), inquiries about concepts or values, explorations of emotions, knowledge, sensory perceptions, historical context, and demographic attributes (Patton, 2014). This study used queries pertaining to experiences, concepts, and emotions (see Table 3).

**Table 3.**

*Interview Questions, Sample Probes, and Corresponding Competences*

| Questions | Competence |
|---|---|
| Do you use digital technologies to design, plan, and implement instruction at different stages of the teaching and learning process?<br>• Do you use digital technologies to promote collaborative learning? If so, which? | Teaching & Learning |
| What do you consider in the selection and use of digital resources?<br>• How do you select your digital resources? | Digital Resources |
| Do you use digital technologies within online classes to ensure students' active participation in the learning process?<br>• Do you use digital technologies to develop your students' scientific inquiry and problem-solving skills and to foster active participation and creativity? If so, how? | Empowering Learners |
| Do you include digital technologies within online classes to develop your students' digital literacy?<br>• Do you help your students solve problems encountered while using digital technologies? If so, how? | Facilitating Learners' Digital Competence |
| Do you use digital technologies for more contemporary and robust assessment within online classes?<br>• Which digital technologies do you use for assessment? | Assessment |
| How do you use digital technologies in your professional life?<br>• Do you use digital technologies to contribute to your professional development? If so, how? | Professional Engagement |

Prior to data collection, the participants were informed about the study, provided contact details for queries, and assured that their involvement was voluntary with optional withdrawal throughout. Interviews lasted up to 30 minutes, were scheduled when mutually convenient and were mostly held online due to the pandemic. Questions were shared in advance via email.

During the interviews, demographic information was first collected, followed by interview questions and probes. Consent was obtained for scientific use of their responses, with anonymity ensured (i.e., coded names; "Participant n"). Audiovisual recordings were used for verbatim transcription; starting the same day to avoid data loss. Dialect variations were ignored, and participant statements were quoted directly, with minor specified adjustments.

*Online Course Assessment Rubric*

Assessing instructors' digital competences typically leans towards qualitative inquiry. Rubrics with scores and ratings can enhance comparability when assessing behaviors

indicative of digital proficiency (Taddeo et al., 2016). The current study employed a rubric to evaluate technology integration within online courses (adapted from Kocatürk-Kapucu & Adnan, 2018). The rubric scored technology use and digital competence on a 3-point, Likert-type scale, with 15 items giving a total score of 15-45 points. Instructors were classified as "Advanced" (36-45 points), "Proficient" (26-35 points), or "Basic" (15-25 points).

Rubric reliability relies on consistency of evaluative scores when assessments are conducted at different times or by different people (Moskal & Leydens, 2000; Simon & Giroux, 2001; Tuncel, 2011). The current study's rubric reliability had a .928 intra-group correlation coefficient, indicating desired reliability as close to 1 (Tuncel, 2011). A strong correlation between course analysis outcomes and different assessors' ratings affirms a tool's reliability. During rubric development, criteria were crafted for interpreting technology integration and digital proficiency assessment. For robust content validity, criteria strictly matched objectives, comprehensively covering all aspects and aligning to the evaluation purpose. The rubric underwent refinements and expert endorsement for validation.

Researcher's Role

In qualitative studies, the researcher plays an active role in data collection, analysis, and interpretation to uncover insights within the study's context. Researcher subjectivity and reflexivity are essential in shaping the process and deepening understanding. The two primary researchers' extensive experience in distance education, e-learning, and online professional development significantly influenced the research concept. Their roles at the university's Distance Education Centre, covering emergency remote teaching and prior methodologies, provided valuable insight into concerns about digital competency and technology use in distance education courses, facilitating the exploration of potential solutions.

Data Collection and Ethics

Data were collected from academic staff working at MSKU during the 2022-2023 autumn semester using data collection tools developed within the study. Prior to the data collection, approval was obtained from the university's Human Research Ethics Committee.

Data Analysis

Data collected from interviews and course reviews were analyzed by content analysis. Content analysis can use predefined codes, those based on extracted concepts, or a combined approach. The current study inductively analyzed the qualitative data considering the six core DigCompEdu competencies as initial markers, forming themes and categories based on qualitative data codes. Both inductive and deductive angles were taken, aiming for higher-level conceptual insight (Bouma & Atkinson, 1995;

Creswell, 2003; Keller, 1995). During analysis, text sections were content-coded, leading to category and theme formation, guided by the literature.

For content analysis, collaboration with a curriculum and instruction expert allowed for independent and joint coding (with inter-coder consensus through code alignment following discussion and agreement) in consideration of the interpretative nature of qualitative analysis (Creswell, 2003). The analyzed interview data yielded six themes, 16 categories, and 79 codes for comprehensive representation and validity (Miles & Huberman, 2015), with each jointly agreed by the coders and aligned with the DigCompEdu competencies. Categories and codes were formed from responses linked to these competencies. One week after initial coding, re-coding was conducted to ensure reliability and guard against code leaks.

### Reliability

The study prioritized credibility, transferability, consistency, confirmability, and diversification. Credibility was ensured through 30-minute in-depth interviews and additional questioning when necessary. Maximum diversity was achieved by including participants with varying digital competence, academic fields, and titles, using both interviews and course analysis. Expert evaluations guided methodology, data analysis, and adjustments, while data accuracy was validated through emailed summaries and participant confirmation. Transferability was supported by diverse sampling and detailed documentation, allowing readers to assess the findings' applicability. Consistency was ensured through expert oversight in data collection and analysis. Confirmability was demonstrated by transparent processes, participant feedback, and expert review to maintain objectivity.

## Findings

### Findings From Interviews

The coding plan is based on the DigCompEdu framework. Analysis indicated 79 codes classified under 16 categories within DigCompEdu's six competency areas.

#### *Learning and Teaching*

This theme revealed categories of "virtual classroom system," "learning management system," "learning and teaching activities," and "feedback" (see Table 4).

**Table 4.**

*Code List for Learning and Teaching Theme*

| Theme | Category | Codes |
|---|---|---|
| Learning & Teaching | Virtual Classroom System | Adobe Connect<br>Zoom<br>Google Meet |
| | Learning Management System | Learning Management System (dys.mu.edu.tr)<br>Canvas<br>Google Class<br>Edmodo |
| | Learning & Teaching Activities | Collaborative learning activities<br>Interactive whiteboard/graphic tablet use<br>Discussion forums<br>Homework/projects<br>Quizzes |
| | Feedback | Online feedback<br>Video feedback<br>Individualized feedback<br>Task feedback/correction |

Instructors expressed learning and teaching digital competences as using digital tools and applications when teaching, enriching their courses using digital technologies, and giving feedback. Frequently cited codes within this theme included learning management systems and virtual classroom systems for distance education courses.

> *"I share topics with students on applications such as Coursera, Khan Academy, and YouTube related to the subject I'm teaching and suggest they watch them. I share links via our LMS and data online from institutions such as UNWTO, TUIK, and OECD; and explain how to access current data and how to use this information in lessons. These links are added to the LMS each week."* (P4)

> *"I track whether they completed tasks given through our LMS and provide feedback. Even if I cannot read all the tasks every week, I try to write feedback to five or 10 students. Some students take the opportunity to organize their next work based on this feedback."* (P6)

Digital Resources

Categories under this theme were "selecting," "creating," and "storing" digital resources (see Table 5).

**Table 5.**

*Code List for Digital Resources Theme*

| Theme | Category | Codes |
|---|---|---|
| Digital Resources | Selecting | Internet search<br>Social media (Twitter, Instagram, YouTube)<br>Colleague support<br>Animation/visual search<br>E-book sites<br>Online articles (Dergipark, Science direct, Libgen, Sci hub)<br>Official webpages<br>Online course videos (Khan Academy, Coursera)<br>Podcast pages |
| | Creating | PowerPoint preparation<br>Video creation/editing<br>Creating images/drawings<br>Canva design creation |
| | Storing | Filing/archiving<br>Backup/matching<br>Storage on computer<br>Storage on portable discs<br>Storage using cloud technology (Google Drive, Yandex Disk, OneDrive) |

Participants provided insight into their approaches for selecting, creating, and storing digital resources for distance education courses. They expressed limited familiarity with cloud technology, particularly regarding their usage for digital resource storage, and voiced concerns about copyright issues.

> *"I think this is the weakest part about online courses. I didn't take any precautions regarding copyrights or resource sharing. I've had no problems so far, and just followed the rules I know about copyright. I don't use flash drives anymore, and cloud store all my files."* (P5)

> *"I prepared materials in the form of videos and infographics. I don't share them on open platforms, and only give them to students via LMS or WhatsApp. I share my videos on the drive only with those who know the link."* (P6)

Empowering Learners

Under this theme, opinions focused on "adaptation for disadvantaged groups" and "ensuring active participation" to support students with low digital competence, limited Internet/device access or individuals with special needs (see Table 6).

**Table 6.**

*Code List for Empowering Learners Theme*

| Theme | Category | Codes |
|---|---|---|
| Empowering Learners | Adaptation for disadvantaged groups | Peer cooperation<br>Explanatory/tutorial videos<br>Sharing detailed instructions<br>Orientation meetings<br>Teaching digital technology usage<br>Keeping in constant contact |
| | Ensuring active participation | Online Q&A<br>Continuity of communication in WhatsApp groups<br>Working together during extracurricular time<br>Open and continuous communication |

Participants indicated their commitment to supporting disadvantaged students in distance education, primarily by offering guidance on Internet and device usage. They also emphasized student empowerment through peer support and online interviews. Notably, during the pandemic, they remained dedicated to providing instructional assistance by maintaining open communication channels with their students.

> *"I didn't have any students with disabilities or special education needs, but if I had, I would adapt accordingly. I try helping students who experience problems with computer and Internet access. For example, I kept exam-assignment times a little more flexible for students who couldn't use computers or had difficulty reading and writing online, shared detailed instructions with them in advance, answered their questions beforehand, planned online meetings, and provided explanations."* (P7)

Facilitating Learners Digital Competence

This theme included activities and practices regarding "media literacy," "providing information" to students, and "problem solving" for digital technology usage (see Table 7).

**Table 7.**

*Code List for Facilitating Learners' Digital Competence Theme*

| Theme | Category | Codes |
|---|---|---|
| Facilitating Learners' Digital Competence | Media literacy | Peer learning/interaction<br>Incentives for participation in training |
| | Providing information | Introducing digital technologies/being an example<br>Guiding/encouraging<br>Gaining experience |
| | Problem solving | Peer support<br>Helping/supporting<br>Solutions: Device access problems<br>Solutions: System utilization problems<br>Solutions: Internet connection problems<br>Warnings: Physical/psychological problems<br>Warnings: Online game playing<br>Warnings: Watching TV series/films online<br>Warnings: Information ethics, copyright infringement |

From examining the participants' responses, it was evident that the adjustments made in online courses to enhance learners' digital competencies encompassed information and interaction activities beyond course requirements and addressing issues related to course access. Participants showed strong commitment to resolving their students' online course challenges and guided them to appropriate resources for solutions.

> *"Male students play online games a lot, while female students watch TV series online for many hours, so, they are very distracted and tired. I think this negatively affects their lives. I tell them they need to be very careful in some laboratory applications. They can have difficulty maintaining focus, so of course I warn them."* (P3)

> *"I provide a brief overview on information ethics, focusing primarily on topics like Internet plagiarism and copyright. In the first lesson, I tell students they can contact me via email for any issues and that I'll respond within 24 hours. I also explain steps to take if they face difficulties accessing the system, watching lessons, or dealing with Internet problems. For issues I cannot resolve, I refer them to the Distance Education Center for help."* (P4)

Assessment

Two categories were revealed under this theme, "e-evaluation" and "producing/using digital evidence" (see Table 8).

**Table 8.**

*Code List for AssessmentTheme*

| Theme | Category | Codes |
|---|---|---|
| Assessment | E-evaluation | Collaborative assessment practices<br>Online assessment activities (Kahoot, Quizizz, Flipgrid, Edpuzzle)<br>Online assignment/project assessment<br>Online exams<br>Ethical violation/plagiarism |
| | Producing/using digital evidence | LMS system records review<br>Live lecture attendance tracking<br>Monitoring class attendance<br>Exam test/question analysis |

The participants primarily employed electronic assessment tools for assessment in online courses; thoroughly examining the generated digital evidence. Notably, participants with lower digital competence levels exhibited hesitancy in fully embracing electronic assessment tools; instead preferring to utilize the tools' basic functionalities, potentially due to limited familiarity with the more advanced features.

> *"I do 9-10 online assessments throughout the semester. I assign homework at the end of each course, and students upload their work. I do e-exams, and use web tools such as Kahoot, Quizizz before/after the course. I arrange appropriate times for students to participate in these assessments. If they don't participate, it's very difficult for them to pass the course since I evaluate the whole process."* (P9)

> *"I offered an online exam once, but couldn't ensure reliability. I couldn't calculate the exam time well. When the time was greater, they cheated and all had very high scores: I gave up and haven't done it since."* (P1)

Professional Engagement

This theme had two categories, "communication and cooperation," and "professional development" (see Table 9).

**Table 9.**

*Code List for Professional Engagement Theme*

| Theme | Category | Codes |
|---|---|---|
| Professional Engagement | Communication & Cooperation | Social media<br>Email groups<br>Online meetings<br>Online project management<br>Online cooperation<br>Online thesis defenses/jury memberships<br>Resource sharing |
| | Professional Development | Webinar/online workshop participation<br>Online training<br>Online conference/symposium/panel participation<br>Online course participation (Coursera, Udemy, AYEUM)<br>Online data collection studies |

On the assessment of digital technologies concerning professional development, it was evident that participants leveraged digital tools for peer communication and collaboration. Additionally, they actively participated in training programs for both their specific professional domains and digital technology integration into their teaching and learning practices to advance their professional growth.

> *"We can communicate and share files and information very quickly through social media. I've participated in seminars and meetings online, and in international and national meetings. Normally, such participation is expensive, so this way is better. I can get answers to my questions from the most accurate source and for questions I cannot ask at face-to-face events."* (P3)

> *"In surveys I conducted in the past, I received feedback from students that I used technology insufficiently, so I'm trying to improve my practices."* (P5)

Notably, these training opportunities intensified during the pandemic. The participants indicated that individuals with varying levels of digital competence actively engaged in these training programs, motivated both by professional and personal development objectives. Emphasis was placed on academic collaboration, with researchers from different geographic locations meeting online, highlighting the increasing prevalence of such activities.

Findings From Course Reviews

Reviewing instructors' learning management system courses was crucial to evaluating their digital competencies and use of instructional technology. Interview questions explored their technology integration in teaching, while course page analysis provided additional context. A rubric was used to assess technology usage in online classes, categorizing instructors based on their scores (see Table 10).

**Table 10.**

*Evaluation of Instructors' Use of Technology in Online Classes*

| Participant Code | Rubric Level | Score |
|---|---|---|
| P1 | Basic | 18 |
| P2 | Basic | 21 |
| P3 | Basic | 23 |
| P4 | Proficient | 30 |
| P5 | Proficient | 32 |
| P6 | Proficient | 34 |
| P7 | Proficient | 34 |
| P8 | Advanced | 38 |
| P9 | Advanced | 40 |
| P10 | Advanced | 42 |

Evaluation of the instructors' technology usage in online courses revealed alignment between rubric scores and digital competence levels. To support this, a course page screenshot from a randomly selected participant at each level is presented (see Figures 4-8).

Figure 4 displays an Explorer-level (A2) instructor's course screenshot, indicating mere written materials and virtual classroom links for live lectures or recordings. This underscores congruence between the instructor's digital competence level, interview responses, distance education practices, and course page content since Explorer-level instructors recognize the potential of digital technologies but need encouragement.

Participant P1 shared general views on the use of digital technologies in their lessons:

> *"I cannot use digital technologies in my lessons because of my lack of knowledge and time constraints. It's very difficult for me to research these technology applications, learn how to use them, and prepare before the lesson. My students know much better than me, and they even use them in their lectures. I actually like it very much, but unfortunately I cannot spare the time."* (P1)

**Figure 4.**

*Lesson screenshot: Participant at Level A2*

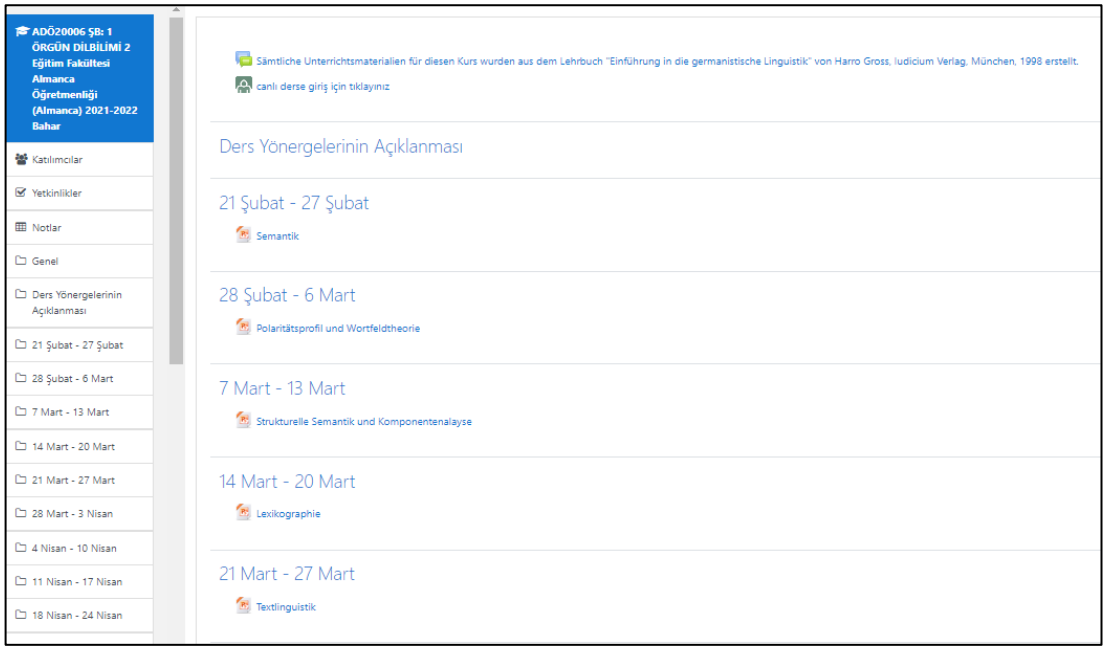



Figure 5 presents a screenshot of a course page on the institutional LMS of an instructor operating at the Integrator level (B1) in terms of digital competence. The course incorporates written materials, e-assessment tools, and a virtual classroom link for live lectures or recordings. However, the course page appears disorganized, with a lack of separation between weekly achievements and lecture notes, and no instructions for evaluation tools. Participant P3 explained the use of technology for assessment purposes in their lessons:

> *"I did exams on LMS, but I didn't use different question styles. For example, there are things like creating a question bank and using random questions, but I've never used that. I give online homework, but some students copy/paste assignments from websites without adding anything. Some students upload incomplete assignments or files that won't open, so I provide feedback and warn them. Sometimes I've organized online meetings and provided explanations about assignments. I communicate with students via email or through their peers."* (P3)

Alignment was seen between the instructor's digital competence level (B1), interview responses, distance education practices, and the course page content. At the integrator level, instructors are open to experimenting with digital technologies in various contexts, willing to expand their repertoire of applications, but lack sufficient knowledge about which tool to use and how to use it.

**Figure 5.**

*Lesson screenshot: Participant at Level B1*

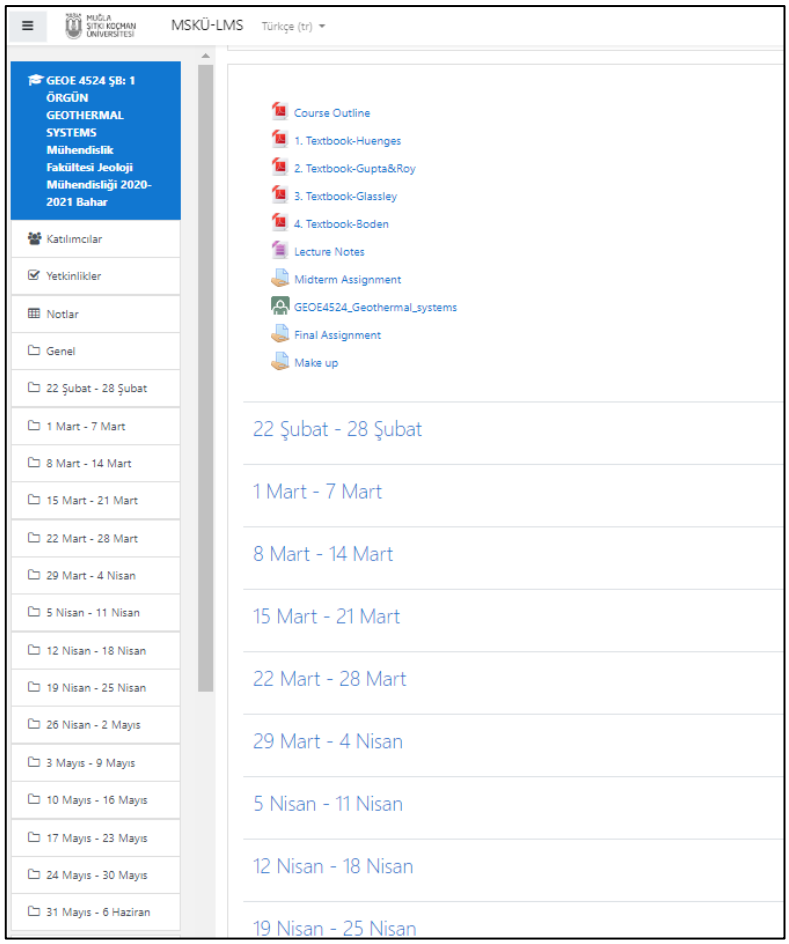



Figure 6 shows a course page by an instructor at the Expert level (B2) of digital competence. The course offers a virtual classroom for live lectures, recorded lectures, an e-course syllabus detailing resources, activities, evaluation methods, discussion forums, and evaluation tools. Yet, enriching the materials and providing explanations for each week would have enhanced the course's effectiveness for students.

The expert-level participant exemplified the use of technology in their lessons:

> *"I give students research topics and direct them to sites such as WebQuest. Sometimes I give reading assignments, where they need to do reflective thinking and write an answer. I then highlight certain words for them to look up. I assign creative tasks, but these are usually like preparing a presentation. They try to resolve any problems they encounter while preparing their presentations, but I don't offer them any digital solutions."* (P6)

Alignment is evident between the instructor's digital competence level (B2), interview responses, and course page content. Expert-level instructors are curious about digital

technologies and accept that there are many things they have yet to try. They use experimentation as a means to expand, structure, and consolidate their repertoire of digital technologies.

**Figure 61.**

*Lesson screenshot: Participant at Level B2*

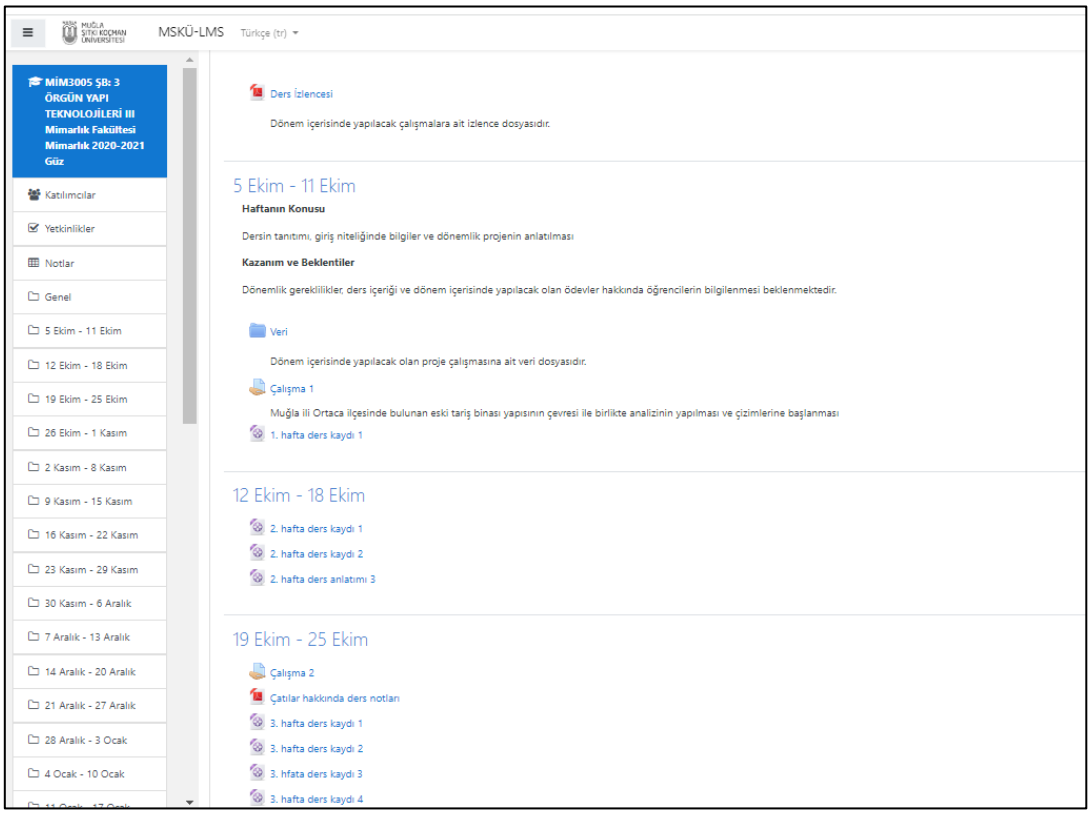


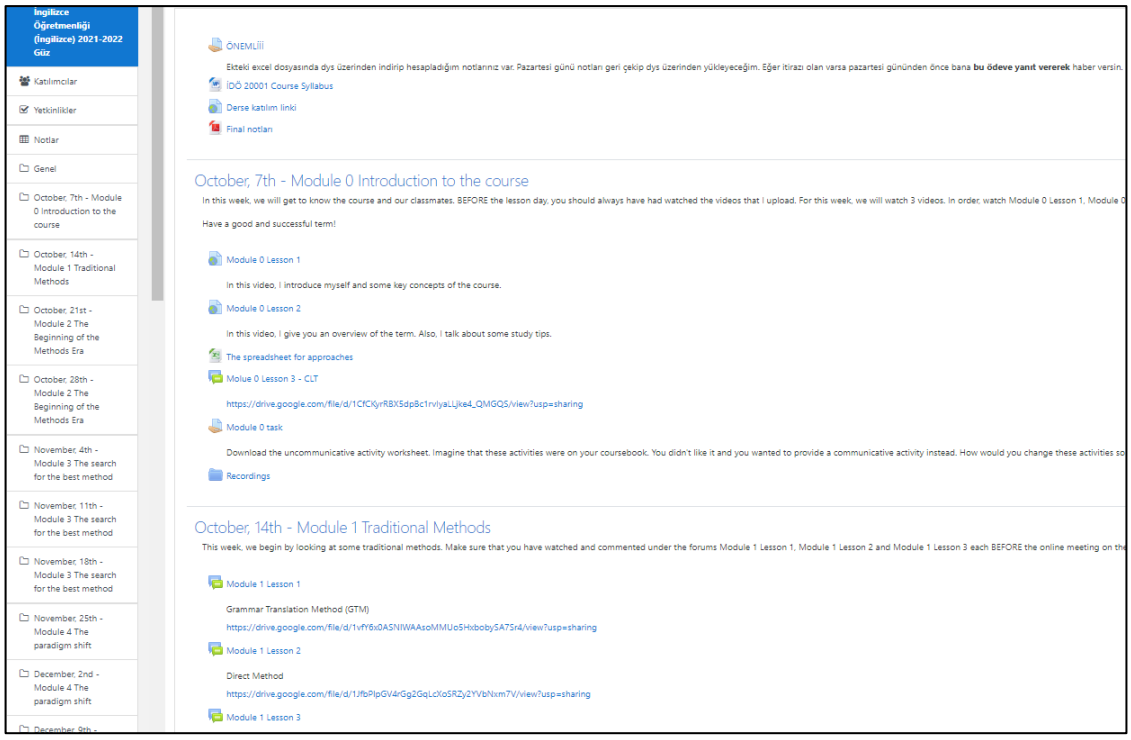

Figure 7 presents a course page screenshot of an instructor with a Leader level (C1) digital competency. The course comprises e-entertainment elements, including introductions, learning outcomes, written materials, e-assessment tools (assignments), and a virtual classroom link for live classes or lecture recordings. This design and technology usage aligns with the participant's (P8) competence at the leader level, since leaders utilize a large repertoire of digital strategies, from which they know how to choose the most appropriate for any given situation. They continuously reflect and further develop their practices.

The instructor commented on their use of technology in terms of storing digital resources and using them for collaborative purposes:

> *"I archive course-related resources both on my computer and on an external drive in separate folders each semester. I used OneDrive for one semester, but couldn't keep up with it. I couldn't follow it for update-matching purposes. Today I use Google Drive. It is also good for sharing, especially with graduate students."* (P8)

**Figure 7.**

*Lesson screenshot: Participant at Level C1*

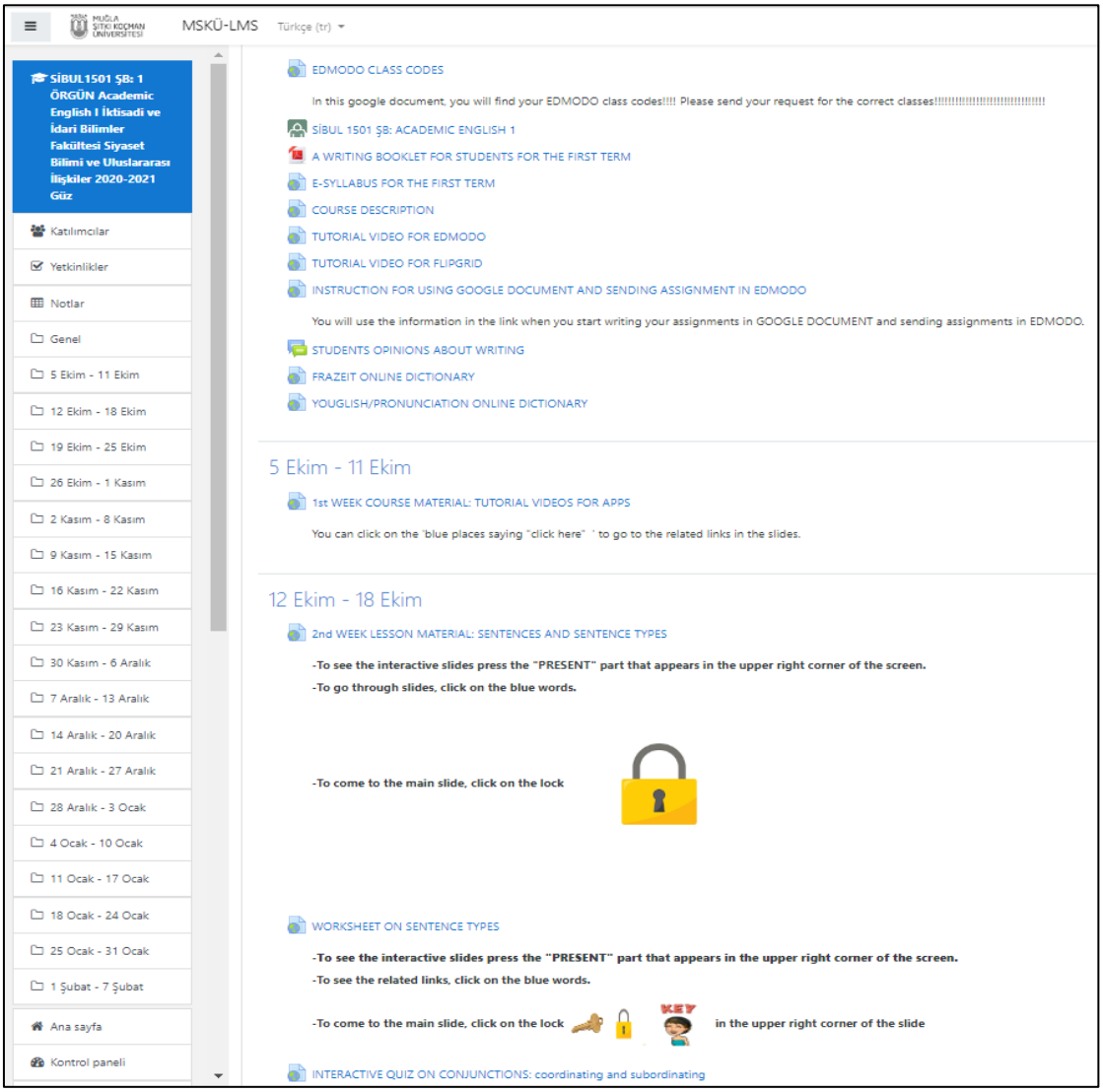



The screenshot in Figure 8 is from an instructor with a Pioneer (C2) digital competence level. The course shows several materials such as virtual classroom links to join live lectures and watch lecture recordings, an e-syllabus containing details such as resources, activities, evaluation methods related to the course, tutorial materials on how to use digital technologies and Web 2.0 tools and how students can use these technologies, videos, web links, and evaluation tools. The course is designed efficiently in terms of educational use of technology. The interview with the instructor (P9) also revealed detailed information about the course design, which showed alignment with their digital competence level, with clear overlap of statements and practices. Pioneer-level instructors develop and innovate highly innovative and complex digital technologies and/or new pedagogical approaches. They act as role models for their students and junior colleagues.

> *"I make tutorial videos for all technologies I use. To facilitate students' use, I first teach what I am going to use as an orientation. In the first 2-3 lessons, I only give information about how to use them. In fact, I pretend to teach the use of technology, but I do this to facilitate the teaching of the lesson."* (P9)

**Figure 8.**

*Lesson screenshot: Participant at Level C2*




Findings from reviewing the participants' online course pages indicate that their digital competence levels, based on their digital competence scale scores, aligned with their technology use in lessons, as evidenced by their interview responses and course reviews. For example, a participant at the Pioneer level (C2) structured their lessons akin to an educational technologist, while another at the Explorer level (A2) acknowledged digital technologies but faced challenges incorporating them into lessons for various reasons.

## Results and Discussion

Digital competence is crucial for teachers to integrate digital technologies into learning effectively. As digital transformation accelerated by the COVID-19 pandemic

continues, the digital competency levels of higher education faculty have become a key focus. The DigCompEdu framework offers a structured approach to assessing and improving these competencies. This study used the framework to explore faculty digital competence through learning management system data and in-depth interviews.

Content analysis focused on the six competencies in the DigCompEdu framework, using participants' responses to generate themes, categories, and codes. The instructors' statements about technology use in their courses reflected their digital competency levels. Findings showed proficiency in selecting and presenting existing learning materials, but limitations in creating interactive materials, using diverse storage methods, guiding students in digital competency development, and facilitating complex tasks. Overall, the study highlighted instructors' strengths in digital competencies while identifying areas for improvement in technology integration in distance education. These findings are discussed by core competency below.

The first core competency of the DigCompEdu framework, *professional engagement*, focuses on using digital technologies to improve communication, foster educator collaboration, and support co-development of teaching practices. It also promotes reflection on digital pedagogy and emphasizes continuous professional development. Our findings showed that faculty actively use digital technologies, such as social media, email groups, and online meetings, to enhance collaboration. However, ongoing digital professional development was more evident among the faculty members.

Professional development is crucial for addressing gaps in faculty members' digital competencies. Research highlights the need for personalized, context-specific training programs to meet educators' unique needs. Cabero-Almenara et al. (2022) stress the importance of continuous training to upskill educators in digital technologies and develop expert-level competencies. Training should be aligned with educators' needs and regularly updated to incorporate technological advancements, ensuring effective integration of digital tools into teaching (Dias-Trindade & Albuquerque, 2022). Continuous professional development also boosts educators' confidence and awareness in using digital tools effectively (Lee et al., 2020). Muammar et al. (2022) further emphasize the necessity for ongoing development as digital technologies evolve.

Faculty members' participation in webinars, online workshops, conferences, and courses through platforms like Coursera and Udemy demonstrates their commitment to continuous professional development, aligning with the framework's focus on using digital resources for ongoing learning. The second core competency, *Digital Resources*, involves selecting, adapting, and creating digital materials based on learning goals and context, as well as managing, protecting, and sharing resources responsibly while respecting privacy, copyright, and open licensing.

The creation and use of digital resources are well-established competencies among faculty members. Studies conducted in Spain and Ecuador report high levels of

proficiency in this area (e.g. Martínez España et al., 2024; Moreira-Choez et al., 2023). However, participants expressed concerns about copyright and ethical issues when integrating digital resources. Kaya (2006) noted the lack of clear examples on legal regulations, making it difficult for instructors to interpret intellectual property laws. As a result, faculty often approach digital resources cautiously, fearing legal errors. Institutional support is essential to provide instructors with the knowledge and resources on copyright and ethics, enabling them to use digital resources confidently and enhance the learning experience.

*Learning and Teaching* focuses on integrating digital technologies to enhance instructional strategies, support learner interaction, and foster both individual and collaborative engagement. It encourages guiding students through digital means, promoting cooperative learning, and supporting self-regulated learning. Faculty generally show strong competencies in using digital tools to enhance student engagement (e.g., Dias-Trindade et al., 2023; ; Muammar et al, 2022; Palacios-Rodríguez et al., 2024), though some still exhibit lower competency levels in integrating technology for teaching and learning (e.g. Sánchez-Caballé & Esteve-Mon, 2022).

*Assessment* emphasizes using digital technologies to enhance both formative and summative strategies, including collecting and analyzing digital evidence of student performance, providing timely feedback, and adapting instruction. It also ensures that assessment data is understandable and useful for learners and parents. In our interviews, instructors commonly used digital technologies for assessments, such as electronic exams and online homework. This aligns with Akşan-Kılıçaslan et al. (2022), who found that teachers use digital tools throughout the course, but only occasionally during evaluations. In our study, instructors leveraged digital technologies to streamline assessment and create an engaging learning environment. However, across various studies, assessment remains an underdeveloped area and a key weakness (e.g. Martínez España et al., 2024; Moreira-Choez et al., 2023).

DigCompEdu's fifth core competency, *Empowering Learners*, focuses on using digital technologies to ensure accessibility and inclusion for all students, considering their diverse needs and abilities. It promotes personalized learning paths, differentiated instruction, and self-paced progress. Additionally, it emphasizes fostering active, creative engagement through meaningful, inquiry-based, and collaborative digital learning experiences.

Our participants with lower digital competence recognized digital technologies but faced challenges in integrating them into their teaching. Conversely, those with higher competence incorporated activities that not only met course objectives but also fostered students' technological skills. These findings suggest that the ability to empower learners through digital tools is closely tied to the instructor's digital competence. Studies in Spain and Peru show that while teachers excel in creating digital resources and integrating technology, there is room for improvement in empowering learners (Dias-Trindade et al., 2023; ; Martín-Párraga et al., 2023). Cabero-Almenara et al.

(2020) emphasize the importance of instructors understanding how to empower students in using digital technologies and supporting their digital competence development to meet the demands of the information society.

The final competency, *Facilitating Learners' Digital Competence*, involves activities to enhance digital skills in areas like information literacy, responsible use of technologies, and solving digital problems. It also emphasizes promoting students' well-being and safe technology use. Research shows that faculty members often struggle to empower students through digital tools, particularly in fostering digital competencies, as seen in studies from Spain, Portugal, and Latin America (e.g., . Cabero-Almenara et al., 2023; Dias-Trindade et al., 2023; Palacios-Rodríguez et al., 2024). In Turkey, Ültay and Uludüz (2016) found that teachers recognize the importance of technology but face practical barriers like time constraints and lack of resources. Similarly, Keleş and Turan-Güntepe (2018) highlighted issues like inadequate technical infrastructure and limited technology knowledge. In our study, instructors with lower digital competence reported needing assistance for basic problems, underscoring the need for further support and training to enhance digital competencies and effectively integrate technology into teaching.

Our interviewees also emphasized the value of adopting the European Commission's Digital Competence Framework to enhance digital competencies, a view aligned with Geçgel et al. (2020). They found this framework effective in fostering digital skills and knowledge, particularly in the Turkish context, to promote better technology and digital resource use. The findings from both interviews and course analyses revealed a strong alignment between participants' reported use of technology and the course data from the institutional LMS, indicating a high level of compatibility.

## Implications and Conclusion

Our findings indicate that while faculty members excel in certain aspects of digital competency, such as presenting existing learning materials, they face challenges in more complex areas like assessment and guiding students' digital skill development. This underscores the need for continuous professional development, tailored to educators' specific needs, to keep them up to date with evolving digital technologies and pedagogical practices. Additionally, concerns about copyright and intellectual property rights were identified as barriers to fully utilizing digital resources. Institutions must provide guidance and resources to help instructors navigate legal issues. Lastly, the study highlights the importance of faculty members not only using digital tools but also empowering students to develop their digital competencies, ensuring they are prepared to become responsible digital citizens in an increasingly digital world.

## Recommendations

1. Continuous Professional Development Programs: Institutions should develop ongoing, personalized professional development programs that align with faculty needs and are regularly updated to incorporate emerging technologies and evolving teaching practices.

2. Institutional Support for Digital Resource Usage: Clear guidelines and training on legal and ethical issues related to digital resources, such as copyright laws and privacy concerns, should be provided to help faculty confidently use a wide range of digital tools in their courses.

3. Fostering a Collaborative Culture: Encourage collaboration among faculty members through digital communities of practice, allowing them to share resources, strategies, and experiences, fostering a more innovative use of digital technologies in education.

4. Empowering Students through Technology: Faculty should receive training to empower students in using digital technologies effectively, focusing on digital literacy, critical thinking, and problem-solving, while incorporating activities that promote self-regulated and collaborative learning.

5. Conduct Comparative Studies Across Disciplines: Future studies should compare how digital competencies and technology use vary across academic disciplines and explore their impact on student learning outcomes, offering discipline-specific insights for enhancing digital integration.

6. Investigate the Student Perspective: Research should include student evaluations of digital tools to identify best practices and areas for improvement, ensuring teaching strategies align with student needs and preferences.

7. Need for a Customized Framework for Higher Education: A tailored digital competence framework for higher education institutions will address specific challenges and needs of faculty, ensuring effective integration of ICT into teaching practices.

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## Genişletilmiş Türkçe Özet

Günümüzde dijital çağın gereklerine uygun bir toplum yaratmak ve bu toplumun sürdürülebilirliğini sağlamak açısından, öğreticilerin dijital yetkinliklerinin geliştirilmesi büyük önem taşımaktadır. Yükseköğretimin yeniliği tanıtma ve yayma için önemli bir kaynak oluşturması sebebiyle akademisyenlerin ve öğrencilerin dijital yetkinliklerinin geliştirilmesi, dolaylı etki yoluyla toplumun dijitalleştirilmesinin önünü açacaktır. Öğretim elemanlarının dijital yetkinliklerinin artırılması, yükseköğretimde dijital dönüşümün anahtarı olarak nitelendirilmektedir. Çevrimiçi ders veren öğreticilerin mesleki gelişimlerini katkı sunarak, nitelikli bir e-öğrenme sürecinin yürütülmesini sağlamak, e-öğrenme çalışmalarını başlatan eğitim kurumlarının görevidir (Sakal ve Adnan, 2015). Kurumlarda e-öğrenmenin önündeki engellerin en önemlilerinden birinin insani faktörler, bir diğerinin de öğreticilere uygun mesleki gelişim olanağı sağlanmaması olduğu ifade edilmektedir (Rosenberg, 2007; Stein ve diğerleri, 2011). E-öğrenme sürecinde yer alacak öğreticilerin yeni bilgi ve becerilere, yeni rollere doğru şekilde hazırlanmaları, ancak iyi planlanmış, amaca uygun tasarlanmış, koordineli ve özgün mesleki gelişim programlarıyla mümkün olabilir (Kocatürk-Kapucu ve Adnan, 2018). Son yıllarda teknolojinin, öğrenme aktivitelerini daha aktif ve daha öğrenci merkezli kılması, öğrenme deneyimlerini zenginleştirmesinden dolayı (Thiele ve diğerleri, 2014), öğreticilerin gerekli hazırlıkları yaparak ders etkinliklerini öğrenci merkezli hale getirmesi gerekmektedir. Öğreticiler, modern çağın gerektirdiği, öğretim teknolojilerini bilmeleri ve eğitim-öğretim faaliyetlerinde yer vermeleri hususunda gerekli önemi göstermeleri için cesaretlendirilmelidir. Hızla değişen teknolojileri tanıma, seçme ve kullanma konusunda öğretim elemanları yeterli bilgi ve tecrübeye sahip olmayabilir. Kendi uzmanlık alanlarının dışında kalan bu becerileri kazanmalarına yönelik gerçekleştirilen eğitimlere katılmak, zaman ayırmak ve emek vermek birçoğu için oldukça zordur. Çoğu öğretici, en azından üniversitelerde görev yapanlar, içerik açısından son derece iyi eğitilmiş ve öğrettikleri konu alanına oldukça hâkim kişiler olmalarına rağmen, yükseköğretim kurumlarında çalışan öğretim elemanları, genellikle, öğretim, pedagoji veya öğrenme alanında yapılan araştırmalar konusunda ya hiç eğitimli değildir ya da çok sınırlı bir eğitim almışlardır (Bates, 2015). Dijital yetkinliklerin geliştirilmesi amacıyla eğitimler açılması, kurslara katılım konusunda öğreticilerin teşvik edilmesi ve desteklenmesi kurumsal olarak önemli bir sorumluluktur. Cleveland-Innes'e (2013) göre; üniversitelerde görev yapan öğretim elemanlarının hem yetkin bir konu alanı uzmanı, başarılı bir araştırmacı ve aktif olarak derse giren bir öğretmen, hem de dijital olarak yetkin bir çevrimiçi öğretici olmalarını beklemek pek de gerçekçi bir yaklaşım değildir. Ancak çevrimiçi öğreticilik rollerinin bilincinde olmaları ve hem uzaktan hem de yüz yüze derslerini dijital teknolojilerle desteklemeleri konusunda farkındalık sahibi olmaları önemlidir. İçinde yaşadığımız dijital çağda, tüm öğretmenlerin dijital yetkinlikler konusunda farkındalığı yüksek ve öğrenmeye açık olmalarını sağlamak öncelikli olmalıdır. Bu nedenle de her öğretim elemanının, öğretim rolüyle ilgili yetkinlikleri içerisinde dijital teknolojilere alan açması kaçınılmazdır. Bu bağlamda, Avrupa Komisyonu Ortak Araştırma Merkezi'nin dijital teknolojilerin eğitim-öğretim süreçlerindeki rolü ve istihdam, kişisel gelişim ve sosyal

içerme için gerekli olan dijital yetkinliklere ilişkin olarak, kanıta dayalı politika desteği sunmak amacıyla 2005 yılında başlattığı "Dijital Çağ İçin Öğrenme ve Beceriler" araştırması kapsamında hazırlanan Eğitimcilerin Dijital Yeterliliği için Avrupa Çerçevesi (DigCompEdu) büyük önem taşımaktadır (Redecker ve Punie, 2017). DigCompEdu, pek çok Avrupa Devleti arasında, eğitimcilerin, dijital teknolojilerin geliştirme ve yenilik yapma potansiyelini yakalayabilmeleri için mesleklerine özgü bir dizi dijital yeterliliğe ihtiyaçları olduğuna dair artan farkındalığa yanıt vermektedir. DigCompEdu Çerçevesi içerisinde yer verilen altı temel yetkinlik alanı ve 22 alt yetkinlik, eğitimcilerin dijital araçları kullanarak etkili, kapsayıcı ve yenilikçi öğrenme stratejilerini teşvik etmek için sahip olmaları gereken yeterlilikleri detaylandırır. Bu detaylar incelenerek, DigCompEdu kapsamında yapılan çalışmalarda, öğretim materyallerinin geliştirilmesi ve değerlendirme araçlarına karar verilmesi sağlıklı şekilde mümkün olur.

Bu araştırmada, öğretim elemanlarının dijital yetkinliklerinin uzaktan öğretim derslerindeki öğretim teknolojileri kullanımları açısından incelenmesi amaçlanmıştır. Belirlenen amaç doğrultusunda, güncel bir olguyu gerçek hayattaki bağlamıyla inceleyen ve sınırlı bir çalışma grubunun derinlemesine incelenmesini içeren durum çalışması gerçekleştirilmiştir. Araştırma kapsamında, Muğla Sıtkı Koçman Üniversitesinde görev yapan öğretim elemanlarının dijital yetkinliklerinin bir göstergesi olarak uzaktan öğretim dersleri incelenmiş ve görüşmeler gerçekleştirilmiştir. DigCompEdu Çerçevesi doğrultusunda hazırlanan görüşme formu aracılığıyla gönüllü katılımcılarla gerçekleştirilen görüşmelerde yöneltilen sorulara verilen cevaplar, içerik analizine tabi tutulmuştur. Hazırlanan rubrik yardımıyla gerçekleştirilen uzaktan öğretim ders incelemeleri ile öğretim elemanlarının dijital yetkinlikleri ve uzaktan öğretim derslerinde teknoloji kullanım durumlarına yönelik veriler toplanmıştır. Bu aşamanın doküman analizi olarak adlandırılması uygun bulunmuştur. Araştırma evrenini, Muğla Sıtkı Koçman Üniversitesi bünyesinde görev yapan öğretim elemanları oluşturmaktadır. Araştırmada, geniş bir evrenden az sayıda analiz biriminin seçkisiz olarak belirlemesi işlemi olan amaçlı seçkisiz örneklem (amaca uygun seçkisiz örneklem) tekniği kullanılmıştır. Gönüllü olan 50 öğretim elemanı, kendileriyle mülakat yapılmasını ve uzaktan öğretim derslerinde teknoloji kullanımının incelenmesini kabul etmiştir. Amaca uygun seçkisiz örneklem içerisinden maksimum çeşitliği (çalışma alanı, kadro unvanı ve dijital yetkinlik düzeyi dikkate alınarak) sağlayacak biçimde belirlenen gönüllü 10 katılımcı ile görüşme tamamlandığında, veriler üzerinde yapılan ön incelemede, veri doygunluğunun sağlandığı konusunda hem fikir olunduğu için daha fazla görüşme yapmaya gerek duyulmamıştır. Elde dilen nitel verilerin analizinde, veriler toplanmış, azaltılmış ve düzenlenmiş, sonrasında kodlara ayrılmış ve ayrılan kodlarla kategorilerin oluşturulması sağlanmıştır. Daha sonra gruplanmış kodlardan kategoriler, kategorilerden temalar oluşturulmuştur. İçerik analizi işlemi yapıldıktan sonra 79 kod, 16 kategori ve altı tema belirlenmiştir. Kodlar, kategoriler ve temalar belirlenirken iki kodlayıcı uzlaşarak ortak karar vermiştir. Temalar, DigCompEdu çerçevesinde belirtilen altı yetkinlik olarak önceden belirlenmiştir. Kategori ve kodlar bu yetkinlikler kapsamında oluşturulan sorulara verilen yanıtlardan derlenmiştir. Ayrıca ilk kodlamanın ardından geçen bir haftalık bir

aranın ardından tekrar kodlama yapılarak, kod kaçaklarının önüne geçilmiş ve kodlama güvenirliği sağlanmaya çalışılmıştır. Öğretim elemanları ile yapılan görüşmelerden elde edilen veriler doğrudan alıntılamalar yoluyla aktarılarak yorumlanmıştır. Ayrıca aynı öğretim elemanlarının uzaktan öğretim ders görünümleri de doğrudan gösterilerek elde edilen veriler desteklenmiştir.

Araştırma sonucunda, öğretim elemanlarının dijital yetkinlikleri açısından, görüşmelerden elde edilen veriler ve ders inceleme sonuçlarının birbiriyle uyumlu olduğu görülmüştür. Genel olarak öğretim elemanlarının, mevcut öğrenme materyallerini bulma, seçme ve sunma konusunda başarılı olduğu, ancak kendi etkileşimli öğrenme materyallerini yaratma, çeşitli şekillerde saklama, öğrencilerin dijital yetkinliklerini geliştirmeleri konusunda rehber olma, öğrencilerin dijital teknolojileri kullanarak karmaşık ve probleme dayalı görevleri yerine getirmelerini sağlama konusunda yetersiz olduğu tespit edilmiştir. Ayrıca öğretim elemanlarının uzaktan öğretim derslerinde dijital kaynaklara yer verme konusunda dile getirdikleri en önemli sorunlardan birinin telif hakları ve etik ihlal çekincesi olduğu görüşme verilerinden anlaşılmaktadır. Katılımcıların, görüşmedeki ifadeleri ile öğrenme yönetim sistemi içerisindeki uzaktan öğretim ders görünümleri birbirlerini destekler nitelikte bulunduğundan, öğretim elemanlarının uzaktan öğretim derslerinde dijital teknolojilere yer verme durumlarının dijital yetkinlik düzeylerine bağlı olarak biçimlendiği sonucuna ulaşılmıştır.

***Ethics Committee Approval:*** The ethics committee approval for this study/reserach was obtained from Muğla Sıtkı Koçman Üniversitesi Sosyal ve Beşeri Bilimler Araştırmları Etik Kurulu (No:93).

***Informed Consent:*** Informed consent was obtained from all parties.

***Peer Review***: This study was peer reviewed.

***Authors' Contribution:*** Nurhayat Kocatürk Kapucu 60%

Bilal Duman 15%

Müge Adnan 25%

***Conflict of Interests:*** The authors have no conflict of interest to disclose.

***Financial Disclosure:*** This study includes a part of the TUBITAK 1002 Project numbered 122K043.

***Acknowledgement:*** We would like to thank the MSKU faculty members whose opinions were consulted during the research process. We would like to thank TÜBİTAK for the project support.

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