

Professional Competence of Indonesian Language Lecturers in Technology-Integrated Teaching: A Study at Universitas Buana Perjuangan Karawang

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ABSTRACT

Digital technology has transformed higher education practices, but how it strengthens lecturers' professional competence in Indonesian Language learning remains underexplored. Previous studies have mainly focused on technology adoption and digital competence rather than on how lecturers demonstrate disciplinary mastery, develop materials, and integrate research through technology-based learning. This study aimed to analyze lecturers' professional competence in technology-based Indonesian Language learning at Universitas Buana Perjuangan Karawang. A multimethod qualitative-descriptive design with supplementary survey data was employed. Participants consisted of five lecturers selected purposively and 40 students selected based on their learning experience. Data were collected through observations, interviews, documentation, and questionnaires, then analyzed descriptively and qualitatively. The findings indicated positive practices in content mastery, resource updating, contextualization, and the development of digital materials. Questionnaire results showed positive student perceptions of mastery of the material (92.5%), current issue presentation (92.5%), and material relevance (92.5%), with students selecting "always" or "often." Qualitative evidence showed that technology use supported learning delivery but varied in depth of integration. The findings are limited to one institutional context and are not statistically generalizable. This study contributes insights for developing discipline-oriented technology integration in lecturer professional development.

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1. INTRODUCTION

Higher education is undergoing significant changes in the ways knowledge is produced, accessed, delivered, and evaluated. These transformations have positioned

technology as an integral component of the academic environment rather than merely a supplementary instructional medium, as digital technologies increasingly shape how lecturers acquire disciplinary knowledge, develop instructional materials, facilitate learning, and evaluate students' academic performance [1]. Despite these technological advances, the quality of higher education continues to depend fundamentally on lecturers' professional competence, particularly their ability to master disciplinary knowledge, critically evaluate academic information, and transform scientific knowledge into meaningful learning experiences that respond to students' academic needs [2].

The status of lecturers as professional educators is affirmed in Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers. The law defines competence as a set of knowledge, skills, and behaviors that must be possessed, internalized, and mastered in carrying out professional duties. Article 69 paragraph (2) states that the guidance and professional development of lecturers encompass pedagogical, personal, social, and professional competencies. Among these four domains, professional competence specifically refers to lecturers' mastery, development, and application of disciplinary knowledge within academic practice. Accordingly, this study adopts professional-competence standards as its primary conceptual foundation rather than pedagogical, technological, or digital-competence frameworks. Technology is viewed as the context in which professional competence is demonstrated rather than as an independent competence domain [3].

Previous studies consistently indicate that digital technology provides extensive opportunities for lecturers to strengthen their professional competence by facilitating access to scientific literature, digital repositories, electronic databases, language corpora, reference management systems, and other scholarly resources that support the continuous updating of disciplinary knowledge [4]. The literature also shows that technology contributes to the development of digital teaching materials, enhances access to authentic academic resources, and supports the integration of research findings into classroom learning. Nevertheless, these studies generally emphasize technology adoption, digital learning, or technological competence, while providing limited discussion of how lecturers' professional competence is demonstrated through technology-based learning practices [5].

The rapid development of digital technology has expanded opportunities for lecturers to strengthen their professional competence. Printed textbooks are no longer the sole source of academic knowledge. Scientific journal articles, electronic databases, institutional repositories, digital dictionaries, language corpora, reference management software, and various digital learning resources enable lecturers to update teaching materials more efficiently. However, the increasing abundance of digital information simultaneously requires lecturers to possess strong professional competence in evaluating the credibility, relevance, scientific validity, and contextual appropriateness of academic resources before integrating them into learning activities [6].

The existing literature also reveals conceptual ambiguity regarding the boundaries of professional competence. Several indicators frequently examined in technology-based learning—including students' motivation, student engagement, selection of digital tools, and participation in research and community service—actually belong to different competence

domains. Motivating students and facilitating engagement are generally categorized as pedagogical competence, whereas selecting and operating digital technologies are categorized as technological or digital competence. Likewise, research and community service constitute academic professional development activities. Consequently, these indicators should not be interpreted as components of professional competence itself, but rather as observable manifestations of how lecturers apply their disciplinary expertise within technology-supported instructional practices [7].

Accordingly, this study defines professional competence as lecturers' mastery and continuous development of disciplinary knowledge, their ability to contextualize academic concepts, their capacity to develop scientifically valid learning materials, and their integration of current research into technology-based learning. The use of digital technologies—including learning management systems (LMSs), digital teaching materials, presentation software, instructional videos, collaborative documents, online assessment platforms, electronic resources, and text-analysis applications—is therefore interpreted as instructional media through which professional competence is demonstrated rather than as a separate competence framework. Although previous studies frequently discuss technology integration using TPACK or digital-competence perspectives, this study does not adopt TPACK as its primary analytical framework because the emphasis remains on lecturers' professional competence in Indonesian-language instruction [8].

The Indonesian Language Course in higher education extends beyond the teaching of spelling, sentence structure, and paragraph organization. It also develops students' academic literacy, scholarly writing, logical reasoning, professional communication, academic presentation, citation management, editing skills, and understanding of academic integrity. These learning outcomes require lecturers to maintain strong disciplinary expertise while continuously updating their linguistic knowledge and adapting learning materials for students from diverse academic disciplines, without compromising scientific accuracy [9].

The contemporary digital communication environment further increases this challenge. The emergence of new vocabulary, social-media language varieties, multimodal texts, digital journalism, and generative artificial intelligence has become an inseparable part of students' academic experiences. Consequently, Indonesian Language lecturers are expected not only to understand these developments but also to analyze them critically using established linguistic theories and evidence-based academic perspectives, so that technological developments contribute to disciplinary learning rather than merely serve as instructional trends [10].

Research and scholarly publication also constitute important aspects of lecturers' professional development because they enable continuous updating of disciplinary knowledge, the development of evidence-based teaching materials, and the integration of authentic research findings into classroom learning. Within the framework adopted in this study, research and community-service activities are not treated as direct indicators of professional competence but as academic activities that strengthen lecturers' disciplinary mastery and support the implementation of professional competence in teaching [11].

The Indonesian Language Course at Universitas Buana Perjuangan Karawang has utilized various digital technologies, including learning management systems, presentation

media, online quiz applications, electronic resources, instructional videos, and collaborative documents. Nevertheless, it remains unclear to what extent these technologies have been used to strengthen lecturers' professional competence rather than merely to facilitate instructional delivery. Empirical evidence explaining how lecturers integrate disciplinary mastery, contextual learning materials, digital academic resources, and research-based knowledge into technology-based Indonesian-language learning remains limited, particularly in Indonesian higher education [12].

This limitation constitutes the principal research gap addressed in the present study. Unlike previous studies that primarily emphasize technology adoption, digital competence, or pedagogical innovation, this study specifically examines lecturers' professional competence in technology-based learning, clearly distinguishing it from pedagogical, technological, and academic professional development competencies. The novelty of this study therefore lies in its conceptual clarification of professional competence and its empirical examination within Indonesian Language instruction at Universitas Buana Perjuangan Karawang using technology-supported learning as the instructional context [13].

Based on this background, this study aims to analyze the professional competence of lecturers teaching the Indonesian Language Course in technology-based learning at Universitas Buana Perjuangan Karawang. The analysis focuses on four dimensions: (1) mastery and continuous updating of disciplinary content; (2) relevance and contextualization of learning materials; (3) development and utilization of digital resources and teaching materials as manifestations of professional competence; and (4) integration of research outcomes into technology-based learning. Indicators such as student engagement, instructional interaction, and technology utilization are interpreted as supporting evidence of how professional competence is enacted in instructional practice rather than as independent dimensions of professional competence. The findings are expected to contribute to a clearer conceptual understanding of lecturers' professional competence in technology-based learning while providing practical implications for lecturer professional development and curriculum implementation in higher education.

2. METHOD

This study employed a *multimethod qualitative-descriptive design with a supplementary survey*. The qualitative strand served as the primary methodological approach, whereas the questionnaire survey provided complementary descriptive evidence to support and corroborate the qualitative findings. The study did not adopt a mixed-methods design because the quantitative data were neither intended for statistical inference nor integrated through mixed-methods analytical procedures. Instead, descriptive percentages were used to strengthen the interpretation of qualitative evidence through methodological triangulation. Qualitative and survey data were collected during the same period, analyzed separately according to their respective characteristics, and integrated during the interpretation stage. Convergence between the two strands was used to reinforce the findings, whereas any inconsistencies were examined through repeated review of interview transcripts, observation records, and documentary evidence before drawing conclusions [14].

The study was conducted at Universitas Buana Perjuangan Karawang, H.S. Ronggowaluyo Street, Telukjambe, Karawang, from March to July 2025. The research focused on examining lecturers' professional competence in technology-based Indonesian Language learning within its natural instructional setting rather than evaluating intervention effects or testing causal relationships [15].

The unit of analysis was lecturers' professional competence as demonstrated through the planning, implementation, and evaluation of technology-based Indonesian Language learning. Consistent with the conceptual framework adopted in this study, professional competence was operationalized through four dimensions: (1) mastery and continuous updating of disciplinary knowledge; (2) relevance and contextualization of learning materials; (3) development and utilization of digital teaching materials and academic resources as manifestations of professional competence; and (4) integration of research into instructional practice. Technology utilization, student participation, and instructional interaction were examined as observable manifestations of these competencies rather than as independent competence domains.

The primary informants comprised five lecturers identified by the initials HJ, RM, SD, LM, and TR. The lecturers were selected through purposive sampling because they were directly responsible for teaching the Indonesian Language Course and had first-hand experience implementing technology-based learning. The informants were three female and two male lecturers. All informants held master's degrees in Indonesian Language Education or Indonesian Language and Literature Education. These academic qualifications were reported solely to describe participants' backgrounds and were not used as indicators of professional competence [14].

The questionnaire respondents comprised 40 students who had participated in Indonesian Language learning. Students were included because they directly experienced the lecturers' instructional practices and were able to evaluate observable aspects of classroom implementation. The questionnaire was developed prior to data collection based on predetermined conceptual dimensions of professional competence rather than from preliminary qualitative findings. Consequently, the survey served as a supplementary source of descriptive evidence rather than an instrument for hypothesis testing. The students assessed observable practices during the learning process, including the delivery of materials, discussion of current issues, the relevance of examples, the use of technology, the appropriateness of teaching materials, involvement in academic activities, and the strategies lecturers used to encourage participation.

The study utilized both primary and secondary data sources. Primary data were obtained through classroom observations, semi-structured interviews with lecturers, and student questionnaires. Secondary data consisted of instructional and institutional documents supporting the implementation of technology-based learning.

Data were collected through observation, semi-structured interviews, documentation, and questionnaires. The observations focused on mastery of the subject matter, accuracy of explanations, use of sources, functions of technology, relationships between theories and examples, assignment management, and forms of evaluation. Rather than documenting only the availability of digital applications, classroom observations examined how technology

supported lecturers in demonstrating disciplinary mastery, organizing learning resources, contextualizing concepts, and facilitating learning activities aligned with course objectives [16].

Semi-structured interviews were used to explore how lecturers updated their knowledge, selected sources, developed teaching materials, utilized technology, integrated research, and addressed constraints in professional development [17]. The documentation included Semester Learning Plans, modules, presentation materials, electronic documents, scholarly articles, test items, assessment rubrics, LMS materials, and research and community service documents related to learning.

The observation sheet, interview guide, documentation checklist, and questionnaire served as the principal research instruments. The questionnaire employed a five-point Likert scale with the response categories: always, often, sometimes, rarely, and never. The initial instrument consisted of 35 items. Based on the testing results, 32 items were declared valid, and 3 were invalid, with a critical r value of 0.312. The retained items represented predetermined indicators corresponding to the four dimensions of professional competence examined in this study. The analysis employed valid items related to mastery and delivery of materials, presentation of current issues, material relevance, use of technology, appropriateness of teaching materials, provision of examples, student involvement, and strategies for motivation and participation. In reporting positive statements, the term positive assessment refers to the combined responses of 'always' and 'often'. The negative item regarding an ineffective theoretical explanation was presented separately to avoid biasing responses [18].

The qualitative data were analyzed using an interactive model comprising data collection, data reduction, data display, and conclusion drawing and verification [19]. Data reduction involved coding and categorizing qualitative evidence according to the four predetermined dimensions of professional competence. Interview transcripts, observation notes, and documentary evidence were analyzed iteratively until consistent themes emerged. Questionnaire data were analyzed descriptively using frequencies and percentages and interpreted independently from the qualitative analysis. Integration occurred only during the interpretation phase, where the descriptive survey findings were compared with qualitative themes to identify convergence, complementarity, or disagreement. When inconsistencies emerged, the qualitative evidence was prioritized as the principal data source, while the survey findings were interpreted as supplementary descriptive information rather than as contradictory statistical evidence. Consequently, the reported percentages were not intended for statistical generalization or as independent measures of lecturers' competence.

The trustworthiness of the qualitative findings was established through credibility, dependability, confirmability, and transferability procedures. Credibility was strengthened through source triangulation, methodological triangulation, prolonged engagement with the research context, and member checking. Dependability and confirmability were enhanced by maintaining consistent analytical procedures and documenting the coding and interpretation process. Transferability was supported by providing detailed descriptions of the research setting, participants, and instructional context, enabling readers to determine the applicability of the findings to comparable educational environments. Source triangulation

was conducted by comparing information across lecturers' and students' perceptions. Methodological triangulation was conducted by comparing the results of observations, interviews, and documentation. Member checking was applied to interview summaries and thematic interpretations to reduce the risk of misinterpretation and enhance the credibility of the findings.

Ethical considerations were addressed throughout the research process. Participation was voluntary, and all participants provided informed consent prior to data collection. The identities of the lecturers were anonymized using initials, and all information obtained during the study was treated confidentially. The collected data were used exclusively for academic purposes, ensuring participants' privacy and research integrity throughout the study.

3. RESULTS AND DISCUSSION

3.1. Overview of the Technology-Based Learning Context

This section presents the findings regarding how lecturers' professional competence was manifested within technology-based Indonesian Language learning practices. The analysis integrates observation data, interviews, documentation, and supplementary student questionnaire responses. The qualitative findings were prioritized to explain the characteristics and depth of professional competence, while questionnaire data were used to strengthen the interpretation of observable instructional practices. The findings demonstrate that lecturers generally showed strong professional competence in disciplinary mastery, updating learning resources, contextualizing materials, and developing digital teaching materials. However, the findings also reveal differences in the extent to which technology was integrated beyond instructional delivery toward discipline-specific digital transformation.

The findings indicate that the professional competence of lecturers teaching the Indonesian Language Course tended to receive positive assessments in terms of content mastery, material currency, the relevance of examples, and the appropriateness of teaching materials. Technology was used in material development, concept presentation, material distribution, assignment management, and evaluation. Nevertheless, the use of technology demonstrated different levels of depth. While all lecturers utilized digital platforms to support learning management and content delivery, only some practices reflected deeper integration, such as collaborative writing, digital text analysis, and the use of authentic language data as learning objects.

All five lecturers possessed academic qualifications relevant to the courses they taught. The observed practices indicated that materials were developed from academic books, journal articles, linguistic documents, literary works, news, online resources, and language phenomena found in everyday communication and digital spaces. The lecturers demonstrated that professional competence was not limited to theoretical knowledge but also reflected their ability to select, evaluate, and transform various sources into contextual learning materials. As one lecturer explained, "I do not only rely on textbooks; I usually combine journal articles, current language phenomena, and examples from digital communication so that students can understand how Indonesian is used in real contexts" (Interview with Lecturer HJ, 2025). These findings demonstrate that professional

competence was reflected not only in mastery of concepts, but also in the ability to select and contextualize sources [20].

The comparison among lecturers showed variations in the intensity and characteristics of technology utilization. Although all lecturers incorporated digital technology into their teaching practices, the functions and depth of integration differed. Some lecturers primarily used technology for presentations, distributing materials, and managing assessment, whereas others used it to support collaborative learning, academic writing, and the analysis of digital language phenomena.

Table 1. Lecturer Practice Variation in Technology-Based Indonesian Language Learning

Lecturer Code	Main Digital Technologies Used	Learning Materials Developed	Technology Integration Pattern	Research Integration
HJ	LMS, presentation software, online resources, quiz applications	Academic writing, sentence effectiveness, language use examples	Mainly digital content delivery, assignment distribution, and evaluation	Used research articles as references, but integration of personal research findings into materials remained limited
RM	LMS, presentation software, videos, collaborative documents	Writing skills, communication, text analysis	Combined material presentation with collaborative editing activities	Connected several learning activities with academic articles and scholarly sources
SD	Presentation software, videos, online databases, digital documents	Linguistics, language variation, current language issues	Used digital sources to contextualize linguistic concepts	Introduced research-based examples from linguistic studies
LM	LMS, online resources, quiz applications, electronic modules	Academic literacy and Indonesian language skills	Emphasized structured learning management and digital assessment	Research integration mainly appeared through recommended readings
TR	LMS, videos, collaborative platforms, digital resources	Text production, academic writing, multimodal texts	More frequent use of interactive and collaborative digital activities	Attempted to connect research interests with classroom discussion

The matrix indicates that technology adoption was relatively widespread among the five lecturers; however, the depth of integration varied. The dominant pattern involved technology-supported delivery, such as uploading materials, presenting slides, sharing references, and administering online assessments. More advanced practices, including corpus-based analysis, collaborative editing, and systematic integration of lecturers' own research findings, appeared less consistently. This distinction is important because professional competence in technology-based learning should not be measured solely by the number of digital tools used but by how effectively technology strengthens disciplinary learning.

The technologies used included LMSs, digital presentations, videos, conferencing applications, quiz applications, online resources, and collaborative documents. These technologies were primarily used to present and distribute materials, manage assignments, provide learning resources, and conduct evaluations. Interview findings indicated that lecturers selected technologies based on practicality, accessibility, and their relevance to instructional objectives. One lecturer stated, "I choose applications that students can easily access because technology should help the learning process rather than create additional difficulties" (Interview with Lecturer RM, 2025).

However, lecturers also reported several constraints affecting consistent technology integration. These included limited preparation time, differences in students' digital readiness, the availability of appropriate discipline-specific digital tools, and the challenge of transforming conventional materials into interactive digital learning experiences. Another lecturer explained, "The challenge is not using the application itself, but designing activities where the technology truly supports analysis and student thinking" (Interview with Lecturer SD, 2025).

Table 1 shows that the highest ratings were given for mastery and delivery of materials, presentation of current issues, and appropriateness of teaching materials. Regarding technology, the assessment of its variety of use reached 87.5%, whereas the consistency of its use reached only 62.5%. This difference represents a central finding of the study. The lecturers demonstrated adequate digital familiarity, but the transition from using technology as instructional support to using it as a tool for disciplinary knowledge construction remained incomplete. This difference constitutes an important finding because it demonstrates that the availability and diversity of applications are not always accompanied by consistent, integrated use [21].

Overall, the findings suggest that strong disciplinary foundations and adaptive use of digital resources characterized lecturers' professional competence in technology-based Indonesian Language learning. Nevertheless, the evidence indicates a developmental gap between digitalized teaching practices and discipline-specific digital transformation. The subsequent sections discuss how this pattern appeared in the dimensions of disciplinary content mastery, technology integration, digital teaching material development, contextualization, and research integration.

3.2. Mastery and Updating of Disciplinary Content

The first dimension examined in this study was lecturers' mastery and continuous updating of disciplinary content. This dimension represents the core of professional competence because lecturers are expected not only to understand Indonesian Language concepts but also to continuously develop their knowledge in line with scientific developments, linguistic phenomena, and academic demands. The findings from observations, interviews, documentation, and student assessments indicate that all five lecturers demonstrated adequate disciplinary mastery; however, differences emerged in the depth of updating sources and the extent to which digital resources were transformed into analytical learning activities.

50% of the students assessed that lecturers always mastered and delivered materials systematically, engagingly, and in ways that were easy to understand, while 42.5% responded 'often'. Accordingly, the positive assessment of this indicator reached 92.5%. These quantitative findings were consistent with classroom observations showing that lecturers generally structured learning activities from theoretical foundations, conceptual explanations, examples, analysis, and application. The lecturers were able to explain linguistic concepts accurately and connect abstract theories with practical language phenomena encountered by students.

The observation and interview data supported this tendency by demonstrating the lecturers' ability to organize discussions from fundamental concepts to examples, analysis, and application. The interview findings further showed that lecturers actively updated their disciplinary knowledge through journal reading, participation in academic forums, seminars, workshops, and observation of contemporary language developments in digital environments. One lecturer explained that language is constantly changing, so I need to update my materials using research articles and current language phenomena. Students should not only learn rules but also understand how language develops in society" (Interview with Lecturer LM, 2025).

Mastery of materials in the Indonesian Language Course encompasses linguistics, academic writing, language skills, communication, and textual studies [22]. In this study, mastery of disciplinary content was reflected in lecturers' ability to maintain theoretical accuracy while adapting examples to students' academic backgrounds. For example, lecturers teaching students from different study programs adjusted examples of academic writing, argumentation, and communication practices according to disciplinary contexts without changing the fundamental principles of Indonesian language studies.

Scholarly writing materials, for example, concern not only grammar but also the logic of argumentation, information structure, the use of sources, and academic ethics. Lecturers also adapted examples to students' study programs without altering the discipline's fundamental principles. This practice demonstrates that professional competence involves transforming disciplinary knowledge into meaningful academic experiences rather than merely transferring textbook information.

A total of 47.5% of the students assessed that lecturers always presented current developments in linguistics, literature, and language learning, while 45% responded that this happened often. The positive assessment reached 92.5%. The high assessment indicates that lecturers succeeded in connecting Indonesian Language learning with contemporary issues. The topics introduced included language variation in digital communication, new vocabulary development, academic writing practices, plagiarism awareness, multimodal communication, and the influence of artificial intelligence on text production.

The issues discussed included vocabulary development, language variation, social-media language, digital literacy, scholarly writing, plagiarism, multimodal communication, and the use of technology in text production. Interview data revealed that lecturers considered current language phenomena important because students encounter them daily on digital platforms. One lecturer stated, "Students already interact with social media

language every day, so the classroom should become a place to analyze these phenomena scientifically rather than simply accept or reject them" (Interview with Lecturer TR, 2025).

The updating of materials was supported by journal articles, books, seminars, workshops, academic discussions, the online version of the Great Dictionary of the Indonesian Language (KBBI), digital thesauri, and other online resources. Language corpora had been recognized as one type of resource, but their use as analytical tools in learning activities was not yet consistently evident [23]. This finding highlights an important distinction between accessing digital academic resources and utilizing discipline-specific digital tools. Although lecturers demonstrated strong ability in finding and selecting digital sources, the use of advanced linguistic technologies, such as corpus analysis tools, automated text analysis, and digital linguistic databases, remained limited.

The variation among lecturers was particularly evident in how they transformed digital resources into learning activities. Some lecturers mainly used journal articles and online references as reading materials, while others encouraged students to examine authentic texts, compare language patterns, or analyze contemporary communication practices. However, the systematic integration of corpus-based analysis or computational linguistic approaches was not yet common.

Therefore, the lecturers' strengths were more clearly reflected in their access to and updating of sources than in their in-depth use of language-analysis technologies. This pattern suggests that professional competence in technology-based Indonesian Language learning has developed primarily at the level of digitally supported disciplinary delivery rather than discipline-specific digital transformation. In other words, lecturers have successfully incorporated digital resources into existing teaching practices, but the transformation of digital resources into new forms of linguistic inquiry remains an area for further development.

These findings are consistent with the concept of professional competence as mastery of knowledge, as manifested in academic performance [24]. The present findings extend this understanding by showing that professional competence in a digital academic environment requires not only up-to-date disciplinary knowledge but also the ability to critically select, interpret, and use digital resources for disciplinary purposes.

Mastery of materials is not limited to the ability to present definitions; it is also evident in how lecturers connect concepts, select sources, answer questions, and position digital phenomena as objects of analysis. Thus, the lecturers' professional competence was demonstrated through three interconnected practices: maintaining disciplinary accuracy, contextualizing knowledge through contemporary examples, and gradually incorporating digital resources into Indonesian Language learning.

3.3. Integration of Technology into Indonesian Language Learning

The second dimension examined was the integration of technology into Indonesian Language learning. This dimension was analyzed not only in terms of the availability of digital tools but also of how lecturers selected, utilized, and connected technology to disciplinary learning objectives. The findings indicate that technology had become an

established component of learning practices; however, the depth of integration varied among lecturers.

A total of 87.5% of the students provided positive assessments of the use of varied learning technologies. The lecturers used LMSs, digital presentations, videos, conferencing applications, quiz applications, online resources, and collaborative documents. The wide range of technologies demonstrates that lecturers possessed sufficient digital familiarity to support instructional activities. However, observations showed that the functions of these technologies varied across lecturers. Some lecturers used technology mainly as a medium for delivering information, while others utilized it to facilitate interaction, collaborative writing, and analysis of authentic language materials.

This variety indicates that the lecturers were familiar with and used several technologies in their learning practices. The lecturer practice matrix showed that LMSs were commonly used by all lecturers to distribute materials, collect assignments, and communicate information. Presentation software was also widely used to explain concepts, while videos and online resources were primarily used to provide contextual examples. Collaborative documents and digital text-analysis activities were less frequently implemented because they required more preparation time and more complex instructional design.

Interview findings revealed that lecturers selected technologies based on their perceived usefulness for specific learning objectives rather than simply adopting new applications. One lecturer explained, "I use technology when it can make students understand concepts more clearly. For example, videos or online texts are useful when students need to analyze real language use, not only memorize theories" (Interview with Lecturer RM, 2025).

Nevertheless, the combined assessment in the always and often categories for technology use consistency reached only 62.5%. This figure was lower than the assessment of technological variety. The difference between technological variety and consistency represents an important finding. The lecturers demonstrated the ability to use multiple digital tools, but their implementation was influenced by factors such as preparation time, course content characteristics, students' readiness, and the availability of suitable discipline-specific digital activities.

Thus, the findings do not indicate that all technologies were used equally in every meeting or for every type of material. Instead, technology integration occurred selectively in line with lecturers' instructional decisions. For example, quiz applications were considered appropriate for checking conceptual understanding, whereas academic writing tasks required more complex processes involving feedback, revision, and collaborative editing.

The observations and documentation showed that technology was most frequently used to upload materials, deliver presentations, provide instructions, collect assignments, provide links to resources, administer quizzes, and communicate evaluation results. These practices demonstrate effective digital support for learning management. However, they represent a functional level of technology use rather than a transformative level in which technology changes how disciplinary knowledge is explored and constructed.

These functions supported learning management, but not all demonstrated the integration of technology into more analytical scholarly activities. For instance, uploading a module to an LMS digitalizes access to learning materials, but it does not automatically create deeper learning experiences. Similarly, presenting linguistic concepts through slides differs from using corpus-based tools to examine language patterns or employing collaborative platforms to develop academic texts through peer feedback.

The appropriateness of technology to the material's characteristics is an important aspect of professional competence [25]. The findings support this perspective by showing that effective technology integration depends on the alignment between technological functions and disciplinary characteristics. In Indonesian Language learning, technology becomes professionally meaningful when it helps students analyze language phenomena, construct arguments, revise texts, and engage with authentic academic resources.

Quiz applications can be used to assess understanding of fundamental concepts, but they cannot replace analytical assessment of students' writing. Collaborative documents can be used for editing and providing feedback, while corpus resources can be used to observe language patterns. Therefore, the professional competence of lecturers is reflected not in the quantity of digital applications used but in their ability to determine when and why a particular technology contributes to disciplinary understanding.

The findings reveal two simultaneous conditions. First, technology has become a tangible component of Indonesian Language learning. Second, its use remains predominantly focused on presentation, distribution, assignment management, and evaluation. This condition indicates that lecturers have achieved a stage of digital adoption but are still developing toward discipline-specific digital transformation.

The data are insufficient to conclude that technology has been used in a transformative way or that its use has affected student learning outcomes. Instead, the findings provide evidence regarding how technology functions within lecturers' professional practices and identify areas requiring further development, particularly in analytical, collaborative, and research-oriented digital activities.

3.4. Development of Digital Teaching Materials Based on Current Sources

The third dimension concerned the development and utilization of digital teaching materials. This dimension reflects how lecturers transformed disciplinary knowledge into accessible, relevant, and academically valid learning resources through technology-supported formats.

A total of 92.5% of the students provided positive assessments of the appropriateness of teaching materials to current needs and developments in knowledge. The lecturers developed teaching materials in the form of modules, presentations, electronic documents, online resources, and LMS materials. The Semester Learning Plan and learning outcomes guided their development.

The documentation analysis confirmed that all lecturers prepared digital materials aligned with course objectives. However, differences appeared in the complexity of materials developed. Some lecturers primarily converted existing materials into digital

formats, whereas others enriched materials with external references, authentic texts, multimedia resources, and interactive activities.

The teaching materials incorporated sources from books, journal articles, linguistic documents, scholarly texts, news, and digital media. The use of diverse sources helped lecturers connect concepts with real-world situations. This practice demonstrates that digital teaching materials functioned not merely as electronic versions of printed resources but also as collections of contextual academic materials that reflected current language developments. Materials on effective sentences, for example, could be examined in official documents; argumentation in scholarly articles or opinion pieces; and editing in digital texts.

Interview findings indicated that lecturers considered contextual relevance as a major principle when developing digital materials. One lecturer stated, "Students understand Indonesian Language concepts better when examples are taken from texts they actually encounter, such as online news, academic articles, or social media content. The important thing is that these examples must still be analyzed scientifically" (Interview with Lecturer HJ, 2025).

Digital formats enabled materials to be presented through text, images, videos, links, and collaborative activities. Nevertheless, the findings indicate that digital format alone does not guarantee higher-quality learning materials. The academic value of digital materials depends on conceptual accuracy, source credibility, instructional organization, and the relationship between examples and learning objectives.

However, the quality of teaching materials was not determined solely by the medium's form. The organization of materials, conceptual accuracy, source credibility, alignment of examples with learning objectives, and document accessibility remained fundamental assessment criteria [26].

A comparison among lecturers showed that digital material development was strongest in resource enrichment but weaker in the systematic integration of interactive digital features. For example, lecturers frequently included hyperlinks, articles, videos, and digital documents, but fewer materials incorporated collaborative annotation, automated feedback, corpus exploration, or digital writing analysis.

The documentation showed that scholarly articles had been used as sources, but the integration of lecturers' research findings into teaching materials had not yet been implemented systematically. This finding indicates a gap between lecturers' roles as researchers and lecturers as knowledge producers in the classroom. Although lecturers were actively engaged in academic activities, translating their own research findings into learning resources remained an opportunity to strengthen professional competence.

This finding indicates that scholarly sources were already being used, whereas the direct connection between lecturers' research activities and learning design remained underdeveloped.

Overall, the development of digital teaching materials demonstrates that lecturers have successfully combined disciplinary knowledge with digital resources. However, the next stage of professional development requires a shift from the availability of digital materials to the transformation of digital knowledge, where technology supports students in investigating, producing, and critically evaluating Indonesian Language knowledge.

3.5. Relevance and Contextualization of Materials

The fourth dimension examined was the relevance and contextualization of Indonesian Language learning materials. This dimension represents an important manifestation of professional competence because disciplinary knowledge becomes meaningful when lecturers can connect theoretical concepts with authentic linguistic, academic, and social contexts. The findings indicate that lecturers demonstrated a strong ability to select relevant examples and adapt learning materials to students' academic needs.

A total of 45% of the students stated that lecturers always presented materials that were relevant and appropriate to contemporary needs, while another 45% responded that this happened often. The positive assessment reached 90%. These findings were supported by classroom observations showing that lecturers frequently connected Indonesian Language concepts with authentic texts, including academic articles, news reports, official documents, literary works, and digital communication texts.

Relevance was reflected in the use of authentic texts, including news articles, scholarly works, official documents, literary works, and digital communication. The lecturers did not merely introduce examples as illustrations but used them as analytical objects. For example, students were guided to examine the effectiveness of sentences in official documents, argument structures in academic writing, and language variation in digital communication.

Contextual materials helped students recognize the application of Indonesian-language concepts to academic and professional needs [27]. This finding reinforces the view that professional competence involves the ability to bridge disciplinary knowledge and practical application. In higher education, Indonesian Language lecturers are expected not only to teach linguistic concepts but also to prepare students to use academic language appropriately within their respective fields.

Lecturers connected theories with article writing, presentations, text analysis, report preparation, and editing. Such contextual adjustments continued to maintain the principles of argumentation, structural accuracy, and language conventions. The interviews indicated that lecturers intentionally selected contextual materials because students from different study programs required examples related to their academic environments. One lecturer explained, "The same concept can be understood differently depending on the students' field. Therefore, examples must be adjusted so students can see the function of language in their own discipline" (Interview with Lecturer TR, 2025).

A total of 45% of the students assessed that lecturers always provided relevant examples, while 42.5% responded that lecturers often did so. The positive assessment reached 87.5%. In addition, 47.5% of the students assessed that lecturers always used relevant and contextual examples to develop learning strategies, while 42.5% responded that this happened often. The positive assessment of this indicator reached 90%.

The relatively high assessment of contextual examples indicates that lecturers were successful in utilizing contemporary materials as bridges between theory and practice. However, observations also showed that the analytical depth of examples varied. Some examples were used primarily to demonstrate concepts, whereas others became objects of investigation through discussion, comparison, and critical analysis.

Technology expanded the sources of examples through online news, social media, videos, infographics, digital documents, and multimodal texts. In practice, examples were used for problem analysis, discussion, editing, and projects. The availability of digital texts provided opportunities for richer learning experiences, as students could analyze language phenomena beyond traditional textbooks. Nevertheless, the educational value of digital examples depended on lecturers' ability to verify sources, explain theoretical connections, and guide students in interpreting the phenomena scientifically.

The use of digital examples still required source verification and an explanation of the relationship between examples and concepts so that the materials did not stop at interesting phenomena but retained academic value [28]. This finding highlights an important distinction between contextualization and mere incorporation of contemporary content. Professional competence requires lecturers to transform everyday language phenomena into structured academic learning experiences.

In response to the negative statement that lecturers had not been able to explain theories effectively, 55% of the students responded 'never,' 37.5% responded 'sometimes,' 5% responded 'rarely,' and 2.5% responded 'often.' This means that 45% of the respondents had, at least on some occasions, experienced theoretical explanations that they considered not entirely effective.

Although the overall assessment indicated positive perceptions, this variation suggests that students' experiences varied depending on the material's complexity, learning situations, and instructional approaches. Certain theoretical topics, particularly abstract linguistic concepts, may require more adaptive explanations, additional examples, visual representations, and interactive learning activities.

This finding indicates that although the overall tendency was positive, students' experiences were not uniform, and certain materials or situations still required more adaptive forms of explanation. Therefore, strengthening professional competence should include not only maintaining disciplinary accuracy but also improving strategies for communicating complex knowledge through appropriate digital and contextual approaches.

3.6. Integration of Research and Technology-Assisted Student Involvement

The integration of research into learning is another important aspect of professional competence, as lecturers' engagement in scholarly activities provides opportunities to update disciplinary knowledge and enrich classroom materials continuously. However, in this study, research involvement was analyzed as a supporting manifestation of professional competence rather than as an independent competence dimension.

Research constitutes part of the development of lecturers' disciplinary content. The interviews and documentation indicated that the lecturers had been involved in research, article writing, and the development of academic works. The five lecturers demonstrated varying levels of integration between their research and instructional practices. Some lecturers integrated research findings into examples, discussions, and recommended readings, while others mainly used external scholarly publications as learning references.

However, the extent to which the findings of these research activities were integrated into materials, assignments, and learning activities continued to vary. Interview data

revealed that the main challenge was not the availability of research outputs but the process of translating research findings into accessible learning materials. One lecturer stated, "Sometimes research results are written for academic publications, but transforming them into materials that students can understand requires additional preparation" (Interview with Lecturer SD, 2025).

Technology can support the connection between research and learning through journal databases, online forms, reference managers, corpora, and collaborative documents [29]. In the present study, digital resources supported access to research information, but their use as tools for student research experiences remained limited. Students were more frequently exposed to research articles as reading materials than as participants in research-oriented learning activities.

In the Indonesian Language Course, linguistic data can be used as objects of analysis, while the academic writing process can be connected with source searching, data management, argument development, and the ethics of information use.

The findings indicate potential to strengthen research-based digital learning through activities such as analyzing authentic language data, comparing linguistic patterns, conducting digital text analysis, collaboratively revising academic writing, and developing evidence-based language projects. These practices would move technology use beyond mere information access toward the construction of disciplinary knowledge.

Student assessments indicated that 37.5% of the respondents were always involved in research and community service, while 35% responded often. The positive assessment reached 72.5%, whereas 27.5% of the respondents selected responses outside the always and often categories.

Compared with indicators related to material mastery and teaching material relevance, student involvement in research and community service received a lower assessment. This difference suggests that lecturers' scholarly activities were not always visible from students' learning experiences. In other words, lecturers may be active researchers, but the connection between research activities and classroom practices requires stronger instructional design.

This result was lower than those for mastery of materials, currency of sources, and relevance of teaching materials. Student involvement was positioned as a supporting finding because the indicator combined research and community service. The data were not used to distinguish the contribution of each activity.

This methodological consideration is important because research and community service represent distinct academic activities. Combining both indicators provides information regarding students' exposure to lecturers' scholarly activities but does not allow separate interpretation of research-based learning and community engagement practices.

The results indicate that the connection between lecturers' academic activities and students' experiences had not been perceived equally by all students. Therefore, future technology-based learning development should focus on creating stronger links between lecturers' scholarly activities and students' academic experiences through research-based assignments, digital collaboration, authentic data analysis, and publication-oriented learning projects.

3.7. Constraints and Professional Development Needs

The final thematic finding concerns the constraints and professional development needs experienced by lecturers in implementing technology-based Indonesian Language learning. This theme is important because professional competence in the digital era is not only determined by lecturers' existing abilities but also by their capacity to continuously adapt to changes in disciplinary knowledge, educational technology, and students' learning characteristics.

The interview findings indicated that lecturers attended seminars, training programs, and workshops, and engaged in academic discussions, read journals, and prepared publications as part of their professional development. These activities supported updating materials and introducing learning technologies.

The findings show that lecturers generally demonstrated awareness of the importance of continuous professional development. However, the main challenge was not the lack of access to technology but the process of transforming available technologies into meaningful discipline-specific learning activities. The lecturers were familiar with commonly available platforms, but more advanced digital practices, such as corpus-based learning, digital text analysis, automated feedback systems, and research-oriented digital collaboration, were not yet consistently implemented.

The principal development need did not lie in increasing the number of applications. The difference between the variety of technology use, which reached 87.5%, and its consistency, which reached 62.5%, indicates that enhancement should focus on selecting technologies appropriate to the disciplinary content, applying them sustainably, and using them for analytical and collaborative activities.

This finding indicates that professional development programs should shift from technology introduction to technology-pedagogical-content integration specifically designed for Indonesian Language education. Training that only introduces new applications may increase digital familiarity but does not necessarily strengthen professional competence. Lecturers require opportunities to explore how technology can support linguistic analysis, academic writing development, collaborative editing, and evidence-based language learning.

Strategies for student motivation and participation received a 75% positive assessment. This indicator is more closely associated with pedagogical competence and was therefore not used as the primary basis for concluding professional competence.

The relatively lower assessment of this indicator was interpreted carefully because student motivation and participation are influenced by multiple factors beyond lecturers' professional competence, including course characteristics, student readiness, learning environments, and interaction patterns. Therefore, this finding was treated as contextual information rather than as a direct measure of professional competence.

Nevertheless, this finding is important as contextual information because the use of too many technologies or technologies whose functions are unclear can increase the technical burden and reduce student engagement.

The interviews also revealed that lecturers faced practical constraints, including limited preparation time, workload demands, differences in students' digital skills, and difficulties in finding digital tools specifically designed for Indonesian Language learning.

One lecturer stated, "The challenge is designing meaningful activities. Using applications is relatively easy, but creating learning experiences where students analyze and produce knowledge through technology requires more planning" (Interview with Lecturer LM, 2025).

Field-specific professional development can be directed toward reference management, collaborative editing, text analysis, corpus use, the development of digital teaching materials, and the responsible use of generative artificial intelligence [30].

These directions correspond with the identified gap between digital access and digital transformation. Although lecturers had successfully incorporated various digital resources, further development is needed to ensure that technology serves as a tool for disciplinary inquiry rather than merely a medium for disseminating information.

3.8. Synthesis of Professional Competence in Technology-Based Learning

The overall findings demonstrate that lecturers' professional competence in technology-based Indonesian Language learning was characterized by strong disciplinary foundations combined with developing digital practices. The findings do not suggest a simple relationship between the availability of technology and professional competence. Instead, professional competence emerged from the interaction among disciplinary mastery, contextualization, the use of digital resources, and scholarly engagement.

The findings indicate that lecturers' professional competence in technology-based learning was formed through the interconnection of four dimensions. The first dimension was the mastery and updating of disciplinary content. The second was the relevance and contextualization of materials. The third was the development of teaching materials and the use of technology. The fourth was the integration of research and professional development into the learning process.

Among these dimensions, disciplinary mastery and contextualization represented the strongest aspects of lecturers' professional competence. The lecturers demonstrated the ability to explain linguistic concepts, connect theories with authentic examples, and update materials using contemporary academic resources. These strengths indicate that technology has functioned as an extension of lecturers' existing disciplinary expertise.

The principal strengths were evident in the mastery of the materials, the presentation of current issues, the relevance of the materials, the appropriateness of the teaching materials, and the use of relevant examples. However, the findings also reveal an important distinction between digital-supported content delivery and discipline-specific digital transformation. Digital-supported content delivery was evident through the use of LMS platforms, presentations, electronic materials, videos, and online assessment tools. In contrast, discipline-specific digital transformation—such as corpus analysis, collaborative academic writing, digital language research, and systematic integration of lecturers' own research findings—remained limited.

Technology was used for various learning functions, but its consistency was lower than its variety. Therefore, the diversity of technological tools cannot be directly equated with the depth of technology integration.

This distinction provides a broader understanding of professional competence in technology-based higher education. A lecturer may demonstrate digital proficiency by using multiple applications; however, professional competence requires the ability to determine how technology contributes to disciplinary understanding, critical analysis, and knowledge construction.

The findings also indicate that supporting aspects, such as student involvement in research and community service, and strategies for motivation and participation received relatively lower ratings.

These findings should not be interpreted as weaknesses in lecturers' overall competence but rather as areas for future development. Strengthening connections between lecturers' research and classroom practices may provide students with opportunities to experience authentic scholarly processes.

These results do not diminish the findings regarding content mastery, but they do identify opportunities for development to more closely connect technology-based learning with scholarly activities and students' active experiences.

3.9. Implications of the Findings for Technology-Based Learning

The findings have several implications for the development of professional competence among Indonesian Language lecturers in higher education. First, professional development should move beyond technology adoption toward discipline-specific technology integration. The goal is not merely to increase the number of digital tools used but to strengthen lecturers' ability to align technology functions with linguistic concepts, academic writing practices, and scholarly inquiry.

The findings guide the development of professional competence toward greater consistency and depth in technology utilization. The lecturers had used LMSs, digital presentations, videos, quiz applications, online resources, and collaborative documents, but the consistency of their use was lower than the variety.

Second, higher education institutions should provide professional development opportunities that combine disciplinary expertise with digital innovation. Training programs should include not only technical skills but also examples of how technology can support corpus-based analysis, collaborative writing, digital feedback, authentic language-data analysis, and research-based learning activities.

Further development should focus on the appropriateness of technology to Indonesian Language materials, rather than merely increasing the number of applications.

The teaching materials received high positive assessments, but the integration of research findings into the materials had not yet been systematic. Digital teaching materials can be reviewed periodically based on the currency of the sources, conceptual accuracy, connections to data or research findings, and ease of access for students.

Third, lecturers should strengthen the connection between their roles as researchers and educators. Research findings generated by lecturers can become valuable learning resources when transformed into accessible examples, analytical activities, and student research projects. This approach may strengthen students' academic literacy while increasing the visibility of scholarly activities within learning environments. Technology can also

support text analysis, collaborative editing, feedback provision, assignment management, and the use of scholarly sources.

Fourth, technology-based Indonesian Language learning should emphasize meaningful student participation. Digital platforms can support students in collecting language data, analyzing texts, collaborating on academic writing, and producing scholarly works. Such practices represent a shift from technology as a delivery mechanism toward technology as a tool for knowledge construction.

Such utilization should be adjusted to the task's complexity. The assessment of academic writing, for example, still requires analysis of content, argumentative structure, language accuracy, and the use of sources. Student involvement in research and community service, as well as strategies for motivation and participation, received relatively lower assessments.

Finally, future institutional policies should recognize that professional competence in the digital era requires continuous development. The findings suggest that lecturers already possess strong disciplinary foundations, but systematic support is needed to transform these foundations into innovative digital scholarly practices.

Therefore, technology-based activities can be designed to expand student involvement through data collection, document analysis, collaborative editing, source-based discussion, or the development of academic products that can be documented and evaluated.

3.10. Limitations and Future Research Directions

This study has several limitations that should be considered when interpreting the findings. First, the study involved only five lecturers from one higher education institution; therefore, the findings describe a specific institutional context and should not be generalized statistically to all Indonesian Language lecturers. Second, although student questionnaires provided supplementary evidence, the main interpretation relied on qualitative data. Third, the study examined technology-based professional practices but did not measure changes in student learning outcomes resulting from technology integration.

Future research may expand the number of participants across different universities and employ comparative designs to examine variations in professional competence development. Further studies may also investigate the effectiveness of specific discipline-oriented digital practices, such as corpus-based learning, artificial intelligence-assisted writing feedback, digital linguistic analysis, and research-based learning models in Indonesian Language education.

4. CONCLUSION

This study examined lecturers' professional competence in technology-based Indonesian Language learning at Universitas Buana Perjuangan Karawang, focusing on disciplinary mastery, contextualization of materials, development of digital resources, and integration of research. The findings show that the five lecturers demonstrated strong competence in updating disciplinary knowledge, developing relevant materials, and utilizing digital technologies to support learning. However, technology use was still dominated by digital content delivery and learning management, while discipline-specific digital

transformation, such as corpus analysis, digital text analysis, collaborative academic writing, and integration of lecturers' research findings, remained limited. This study contributes to understanding that the quantity of digital tools used does not determine professional competence in technology-based learning, but rather the ability to apply technology meaningfully to disciplinary knowledge construction. The findings should be interpreted cautiously because student ratings were aggregated and may not represent identical practices among all five lecturers. Practical implications include the need for discipline-specific digital training, corpus and text-analysis workshops, collaborative writing platforms, research-based module development, periodic digital-material review, and clearer separation between professional and pedagogical competence evaluation. Future research should involve larger multi-institution samples, lecturer-level analysis, validated multidimensional instruments, student interviews, longitudinal observations, and examination of the relationship between technology integration and student learning outcomes. Overall, the study indicates that lecturers have established strong professional foundations supported by technology, but further development is needed to transform digital practices from instructional support toward deeper disciplinary learning innovation.

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