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Harnessing Bloom's Digital Taxonomy for Modern Arabic Language Instruction in Islamic Universities

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This study explores the application of Digital Bloom's Taxonomy in Arabic learning to provide structured and diverse educational experiences that improve student understanding and mastery of the language. Utilizing an exploratory approach, the study engaged Arabic lecturers from nine public institutions across Sumatra and Java through a self-report survey based on Bloom's Digital Taxonomy. The data analysis revealed a generally positive attitude towards technology integration among lecturers, though areas such as online lecture attendance and addressing student differences require improvement. The findings suggest that while educators possess strong technical, pedagogical, and content knowledge, there is a need to enhance the use of online media platforms and the understanding of Arab culture in teaching. The study highlights the importance of adopting Digital Bloom's Taxonomy to optimize digital tool usage across various cognitive levels and offers practical guidance for Arabic educators. By addressing these areas, educators can provide a more comprehensive and engaging learning experience, ultimately preparing students for success in a digitally driven world. Further research is necessary to refine pedagogical strategies and evaluate long-term linguistic proficiency and cultural competence outcomes.

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Public Interest Statement

This study explores how Digital Bloom's Taxonomy can be systematically applied in Arabic language instruction at Indonesian Islamic universities. As digital technology reshapes higher education, Arabic lecturers must move beyond rote-memorization approaches toward structured, technology-enhanced pedagogies that develop both linguistic competence and 21st-century skills. This research surveyed Arabic lecturers across nine public institutions in Sumatra and Java, documenting which digital tools they use, how they align with Bloom's cognitive levels, and where critical gaps remain. The findings reveal that while educators show positive attitudes toward technology integration and strong foundational competencies, higher-order activities such as analyzing, evaluating, and creating remain significantly underutilized. This study offers practical guidance for curriculum developers, educational policymakers, and Arabic educators seeking to harness digital tools more effectively, ultimately preparing students for success in a digitally connected, multicultural world.

Introduction

Arabic learning in higher education is facing a period of significant challenges and transformation. Although the professional demand for Arabic competence is high, the field is often hampered by persistent issues, such as difficulties in comprehending the language's complex structure and a scarcity of engaging learning resources (Lassoued et al., 2020). This situation points to a concerning gap between market needs and the quality of educational supply. The rapid mushrooming of digital technology in higher education offers a promising avenue for addressing this disconnect, aligning with earlier studies by Li et al. (2021), who posit technology as a key solver for bridging traditional curricula and the skills demands of the digital age. Indeed, curricula that fail to align with technological progress and labor market needs can impede students' ability to develop relevant language skills (Jacobs & ASCD, 2010).

This evolving context necessitates a shift towards what can be defined as 21st-century Arabic learning. This modern approach moves beyond the confines of traditional instruction, which often prioritizes rote memorization, grammatical accuracy in isolation, and teacher-centered methodologies. In contrast, 21st-century Arabic learning is characterized by the seamless integration of digital tools to foster linguistic competence and essential future-ready skills. Its specific features include the strategic use of technology across all cognitive levels of learning—from remembering to creating—as articulated in frameworks like Bloom's Taxonomy. Furthermore, it explicitly aims to cultivate the 4Cs: Critical Thinking, Communication, Collaboration, and Creativity.

This approach also embeds digital citizenship, guiding students in the responsible and effective use of technology and advancing intercultural competence by using digital media to connect learners with authentic cultural contexts and diverse perspectives, enabling effective communication in multicultural environments (Alneyadi et al., 2023; Bacha & Bahous, 2011).

However, the integration of digital technology itself presents a new set of challenges, making the enhancement of student engagement paramount. As students become increasingly accustomed to interactive digital media, conventional teaching methods risk being perceived as rigid and uninteresting, potentially reducing student interest and hindering learning effectiveness (Bowen, 2012; Parong & Mayer, 2018). A critical question emerges: How can technology be optimized to enhance learning without sacrificing the authenticity of the Arabic language and its cultural nuances? Despite its potential, the discussion on effectively integrating and optimizing digital technology in higher education Arabic learning remains under-explored (Bower, 2017; Haleem et al., 2022).

This study argues that the Digital Bloom's Taxonomy concept is uniquely relevant to this challenge (Al Maani & Shanti, 2023; Willermark, 2018). This framework provides a structured way for educators to design learning experiences that are not only technologically infused but also cognitively rigorous and diverse, thereby directly supporting the goals of 21st-century Arabic learning. Research by Nkhoma et al. (2017) demonstrates that implementing Digital Bloom's Taxonomy improves conceptual understanding and problem-solving abilities, while Kinik and Sarikaya (2025) found that technology applications integrated with this framework enhanced communication skills and foreign language mastery.

Although the application of Digital Bloom's Taxonomy has been explored in various contexts, its specific use within the framework of 21st-century Arabic learning in higher education offers considerable scope for discussion. Therefore, this study aims to fill this gap by providing a deeper understanding of how the Digital Bloom's Taxonomy approach can be systematically applied to modernize Arabic instruction. The primary objective was to explore strategies for implementing this taxonomy, considering how digital tools can support each cognitive level, from basic knowledge to complex evaluation. Furthermore, this study aims to evaluate the impact of this approach on students' understanding and achievement, while also offering practical guidance for educators seeking to integrate these principles into their curriculum design.

Therefore, this study seeks to address this notable gap by examining the integration of Digital Bloom's Taxonomy in the specific context of 21st-century Arabic learning in higher-education. The novelty of this research lies in its systematic mapping of pedagogical practices at the intersection of digital tools and cognitive processes, an area that remains largely unexplored. Specifically, the investigation is guided by the following objectives: First, to document and analyze how Arabic lecturers pedagogically apply the various cognitive levels of Digital Bloom's taxonomy in their instructional designs. Second, to identify and categorize the specific digital tools that are most effectively employed to operationalize each level of the taxonomy in Arabic language courses. Finally, this study aims to critically examine the practical challenges and identify persistent gaps educators encounter when implementing this framework, moving beyond theoretical potential to address on-the-ground realities.

Literature Review

The Tradition and Its Discontents

Arabic language instruction in higher education, particularly for Modern Standard Arabic (MSA), has been characterized by traditional grammar-translation approaches for decades. These methods often prioritize the rote memorization of grammatical rules and vocabulary (Alosh, 2010), emphasizing achieving grammatical accuracy in written form. Although this approach provides a structured foundation, a significant body of criticism highlights its limitations. Wahba et al. (2014) argue that such methods can disconnect students' metalinguistic knowledge and their functional communicative ability. The teacher-centred nature of this model often results in passive learning, where students lack opportunities to apply their knowledge in meaningful, interactive contexts (Bacha & Bahous, 2011). This aligns with the concerns raised in the introduction regarding rigid teaching approaches that fail to engage digital-native students (Bowen, 2012), ultimately hindering the development of the practical language skills required in professional and academic settings.

The Shift to 21st-Century Arabic Learning

In response to these shortcomings, the concept of 21st-century learning has gained increasing prominence. This paradigm shift moves beyond linguistic competence to encompass a broader set of skills, including the 4Cs: critical thinking, communication, collaboration, and creativity (Khromchenko, 2024). In the specific context of Arabic, this means designing learning experiences that prepare students for real-world communication, intercultural competence and digital citizenship (Alneyadi et al., 2023). Technology in this model is not merely an add-on but is integrated as a core enabler to achieve these higher-order objectives. For instance, digital tools can facilitate collaboration on projects with international peers, use authentic multimedia resources to build cultural understanding, and create platforms for students to produce original Arabic content. This shift redefines the goal of Arabic education from mastering a system of rules to developing the capacity to use the language effectively and appropriately in a digitally connected environment.

Digital Bloom's Taxonomy: A Structured Framework for Integration

While the call for technology integration is clear, the question of how to do it systematically remains. This is where Bloom's Taxonomy, a classic framework for categorizing cognitive learning objectives, has been updated for the digital age. Digital Bloom's Taxonomy (Kloos & Alario-Hoyos, 2021) provides a crucial bridge between pedagogical goals and technological tools by mapping specific digital activities to each cognitive level (e.g., remembering through digital flashcards, evaluating through peer-review platforms, creating through multimedia presentations). General studies, such as Nkhoma et al. (2017), have demonstrated that using this framework improves conceptual understanding and problem-solving skills. In language learning, research by Kinik and Sarikaya (2025) suggests that technology applications aligned with Bloom's levels can enhance communication skills. However, Bower (2017) and Haleem et al. (2022) noted that the literature on technology integration often remains broad, lacking granularity on specific pedagogical implementations. Crucially, the application of Digital Bloom's Taxonomy within Arabic language pedagogy in higher education is notably underexplored. There is a lack of empirical studies that document how Arabic lecturers apply the taxonomy across its cognitive levels, which tools are most effective for specific Arabic learning objectives, and what challenges arise in practice.

Therefore, this literature review identifies a clear gap. While the need for 21st-century Arabic learning is established and the potential of Digital Bloom's Taxonomy as a guiding framework is recognized in other fields, a focused investigation into their intersection is absent. This study aims to fill this void by systematically exploring the application of Digital Bloom's Taxonomy in contemporary Arabic higher education.

Materials and Methods

This study employed an exploratory research design utilizing a self-report survey to investigate the integration of Digital Bloom's Taxonomy (DBT) in Arabic language instruction (Abbitt, 2011).

Participants and Recruitment

A purposive sampling strategy was used to recruit participants who could provide in-depth insights into the phenomenon being studied. The eligibility criteria required participants to be full-time or part-time Arabic language lecturers at public, faith-based higher education institutions under Indonesia's Ministry of Religious Affairs. To ensure geographic diversity, this study targeted institutions across the islands of Sumatera and Java. The recruitment procedure involved emailing the department heads of Arabic language studies at nine selected institutions between September and November 2023. The email contained a detailed study information sheet and an invitation to participate, which department heads were requested to forward to their eligible teaching staff members.

Instrumentation and Data Collection

Data were collected using an online questionnaire developed by synthesizing and adapting items from established frameworks by Agustini et al. (2019), Rahmadi (2019), and Schmidt et al. (2009) to align with the cognitive domains of Bloom's Digital Taxonomy. The final questionnaire consisted of 30 items divided into two main sections.

The first section collected demographic information (e.g., years of teaching experience and institution). The second section contained items mapped to the six levels of DBT (Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating). For each level, respondents were presented with several statements (e.g., "I frequently use digital flashcard apps like Quizlet to help students memorize Arabic vocabulary" for Remembering; "I assign projects where students use tools like Canva or video editors to create a digital campaign promoting an Arabic cultural concept" for Creating). Participants indicated their frequency of practice on a six-point Likert scale ranging from 1 (Never) to 6 (Always). The questionnaire concluded with open-ended questions to gather qualitative insights into perceived challenges and successes in applying DBT.

Validity, Reliability, and Data Analysis

To ensure content validity, the questionnaire was reviewed by two independent experts in educational technology and Arabic-language pedagogy. Their feedback was used to refine the clarity and relevance of the items in the questionnaire. A pilot study with 15 lecturers (not included in the main sample) was conducted, and the internal reliability of the DBT constructs was assessed using Cronbach's alpha, which yielded a coefficient of 0.87, indicating good reliability. Data analysis involved descriptive statistical techniques to summarize the quantitative responses, including tabulation and percentage calculations. Qualitative data from open-ended questions were analyzed using open coding to identify the emergent themes (Holcomb, 2016).

Results and Discussion

Demographic Profile

Table 1. Demographic Profile of Arabic Lecturers

Highest Level of Education	Total	Percentage
S-2 (Master degree)	31	67.39%
S-3 (Doctoral degree)	15	32.61%
Gender		
Male	33	71.74%
Female	13	28.26%
Status		
Civil servant	33	71.74%
Non-civil servant	13	28.26%
Age		
21–25	3	6.52%
26–30	7	15.22%
31–35	19	41.30%
36–40	11	23.91%
>40	6	13.04%
Teaching and Learning Gadgets		
Computer	1	2.17%
Laptop	22	47.83%

Smartphones	3	6.52%
Laptops, Smart Phones	14	30.43%
Laptops, Smart Phones, Computers	3	6.52%
Tablets, Smart Phones, Computers	3	6.52%
Online Lectures Since		
Pre-Pandemic	11	23.91%
Whilst-Pandemic	28	60.87%
Post-Pandemic	7	15.22%

As shown in Table 1, this study surveyed 46 lecturers across multiple universities to profile their educational backgrounds, demographics, and adaptation to online learning. Most respondents hold master's degrees (S-2), comprising 67.39% of the sample, while 32.61% have attained doctoral degrees (S-3). The gender distribution among respondents shows a predominant representation of male lecturers at 71.74%, with female lecturers accounting for 28.26%. Regarding employment status, 71.74% of respondents are civil servants (ASN). Age-wise, lecturers aged 31–35 constitute the largest group at 41.30%, contrasting sharply with those aged 21–25, representing only 6.52% of the sample. Regarding technological preferences, 47.83% of lecturers utilize laptops for teaching. The study also reveals significant shifts in pedagogical methods due to the COVID-19 pandemic, with 60.87% of lecturers commencing online teaching during the pandemic.

Table 1 provides insights into the demographics and behavior of lecturers in the context of online learning. Factors such as job security, technological readiness, and socioeconomic conditions are crucial in determining the dynamics of the labor market. The COVID-19 pandemic has been an essential factor in driving the adoption of online learning technologies, reflecting how crises can accelerate changes in educational practices. The balance between experience, innovation, and technology integration in teaching will be the key to improving the quality of Arabic teaching in the future.

Portrait of Arabic Lectures in the 21st Century

Table 2. Respondents' Views on Creativity

No.	Sub-Theme	M	SD
Imagine (Generate Original Ideas)			
1	Arabic lectures are designed with a project-based learning approach, such as writing everyday Arabic conversations	5.30	0.55
2	Arabic lectures are designed with a discussion and brainstorming approach, such as the discussion of the latest issues in Arabic	5.39	0.49
Make connections			
3	Arabic courses are designed to present students in a real-world context where they need to use Arabic	5.57	0.50
4	Arabic lectures are designed to prepare students to be able to use various Arabic sources	5.57	0.54
Elaborate or Transform			
5	Arabic lectures are designed to encourage students to write creatively in Arabic, such as short stories, conversations, and so on	5.57	0.50
6	Arabic lectures are designed by asking students to do creative translations from Arabic into Indonesian and vice versa	5.30	0.63
Take Risks (Entrepreneurship/Innovation)			

7	Arabic lectures are designed by inviting students to dare to use Arabic in the context of social media	5.41	0.62
8	Arabic lectures are designed by trying new methods, tools, or digital platforms that are not commonly used in teaching Arabic	5.48	0.59

Table 2 shows that the findings from the survey on teaching approaches in Arabic lectures reveal varied perceptions among respondents. The highest mean scores were consistently awarded to methods emphasizing real-world application and creativity. Specifically, approaches encouraging the use of Arabic in practical contexts and creative writing received top ratings, averaging 5.57 on the Likert scale. This suggests a strong endorsement of these methods. In contrast, the lowest mean scores were attributed to project-based learning and creative translations, which received scores of 5.30.

Critical Thinking

Table 3. Respondents' Views on Critical Thinking

No.	Sub-Theme	M	SD
	Identify Issues (Ask questions)		
1	Arabic courses are designed to encourage students to participate in structured discussions about the Arabic texts they study.	5.41	0.54
2	Arabic courses use news, articles, videos, and contemporary Arabic media to identify current and controversial issues.	5.59	0.50
	Find Evidence		
3	Arabic courses are designed to encourage students to use digital resources in Arabic, such as scientific databases or legitimate websites	5.61	0.58
4	Arabic lectures are designed to teach students how to use dictionaries, encyclopedias, or other Arabic sources	5.43	0.58
	Reach Conclusions		
5	Arabic lectures are designed to ask students to read Arabic texts and deduce the messages contained in the texts.	5.46	0.62
6	Arabic lectures are designed to analyze news or Arabic-language media materials to reach conclusions about specific issues presented in the news.	5.43	0.54
	Evaluate Evidence		
7	Arabic lectures are designed to encourage students to develop the ability to evaluate Arabic texts	5.35	0.60
8	Arabic courses are designed to encourage students to participate in critical discussions on Arabic topics	5.41	0.58

Table 3 shows that the mean scores indicate generally positive perceptions of these instructional approaches in Arabic language courses. The highest mean scores were given to methods involving contemporary media sources (5.59) and digital Arabic resources (5.61). This suggests a strong approval for integrating modern and diverse materials into the curriculum. However, the lowest mean scores were associated with methods aimed at developing the ability to evaluate Arabic texts (5.35) and encouraging critical discussions on Arabic topics (5.41).

Collaboration

Table 4. Respondents' Views on Collaboration

No.	Sub-Theme	M	SD
	Cooperate		

1	Arabic classes are designed by organizing classroom activities in which students work together in pairs or small groups to complete certain assignments or exercises.	5.43	0.58
2	Arabic courses are designed to encourage students with higher Arabic proficiency to act as mentors or tutors for other students who need additional guidance.	5.48	0.51
Build Team Strengths			
3	Arabic lessons are designed by involving students in team projects or group assignments and ensuring that the team consists of members with different strengths in Arabic.	5.52	0.62
4	Arabic lectures are designed to start the semester by recognizing the strengths and weaknesses of each student in Arabic through an initial competency test.	5.48	0.55
Evaluate the team			
5	Arabic lessons are designed by encouraging study group members to evaluate each other regularly	5.28	0.66
6	Arabic lectures are designed to analyze the results of assignments or projects carried out by the team to assess whether the set goals and targets have been achieved.	5.37	0.53
Find Solutions			
7	Arabic courses are designed to involve students in tasks that require them to jointly find solutions in Arabic courses.	5.39	0.58
8	Arabic courses are designed by utilizing technology and digital tools to find solutions in Arabic courses.	5.59	0.50

Table 4 shows that across the statements, the highest mean score of 5.59 was awarded to the use of technology and digital tools in Arabic courses, indicating strong support for integrating modern technological resources. Conversely, the lowest mean score of 5.28 was attributed to encouraging study group members to evaluate each other regularly, possibly reflecting concerns about fairness or effectiveness in such assessment methods. These scores highlight the importance of balancing innovative technological integration with effective, collaborative, and evaluative strategies.

Communication

Table 5. Respondents' Views on Communication

No.	Sub-Theme	M	SD
Share learning			
1	Arabic courses are designed to provide opportunities for students to present the results of their assignments in Arabic courses.	5.48	0.55
2	Arabic lectures are designed by creating a discussion forum or a special online platform to review Arabic lecture materials	5.35	0.57
Persuade others			
3	Arabic courses are designed to encourage students to create promotional materials such as brochures, posters, and advertisements in Arabic.	5.22	0.73
4	Arabic lectures are designed to allow students to present argumentative presentations on the assignments given in the Arabic course.	5.48	0.51
Be clear			
5	Arabic courses are designed to provide students with a strong understanding of Arabic grammar and structure.	5.35	0.74

6	Arabic classes are designed to involve students in speaking exercises, where they must communicate clearly and fluently in Arabic.	5.41	0.54
	Invite feedback		
7	Arabic lectures are designed to encourage students to ask questions and ask for guidance from Arabic course lecturers	5.28	0.62
8	Arabic courses are designed to hold individual sessions with students to discuss their progress in Arabic skills and to provide feedback.	5.39	0.54

Table 5 shows that activities such as providing opportunities for students to present their assignment results received a commendable mean score of 5.48, highlighting strong support for enhancing students' public speaking and presentation skills. Conversely, the mean score of 5.22 for creating promotional materials in Arabic indicates a lower level of endorsement for this activity, suggesting potential challenges in its perceived relevance or execution within an educational context.

Character

Table 6. Respondents' Views on Character

No.	Sub-Theme	M	SD
	Be organized		
1	Arabic courses are designed to teach students how to manage their assignments and responsibilities in Arabic	5.30	0.55
2	Arabic courses are designed to help students plan long-term and short-term study plans in Arabic courses	5.20	0.69
	Embody Grit — Go for It/Finish it		
3	Arabic courses are designed to motivate students to complete their Arabic assignments diligently and without leaving unfinished ones	5.43	0.62
4	Arabic courses are designed to encourage students to take additional courses, Arabic proficiency classes, or language-intensive programs to improve their language skills	5.22	0.94
	Self regulate		
5	Arabic courses are designed to teach students how to cope with stress, anxiety, or frustration they may experience during their Arabic learning	5.17	0.74
6	Arabic lectures are designed to encourage students to take the initiative in finding additional Arabic learning resources, such as through books, applications, or other media	5.43	0.54
	Set challenges		
7	Arabic courses are designed to encourage students to set challenging Arabic learning goals, such as improving their speaking or writing skills.	5.39	0.58
8	Arabic courses are designed to motivate students to take on the challenge of studying abroad in Arabic-speaking countries.	5.35	0.64

Table 6 shows that the mean scores reveal positive perceptions regarding character development in Arabic courses. Courses focusing on organizational skills and study planning received mean scores of 5.30 and 5.20, respectively. Initiatives aimed at fostering diligence in completing assignments scored 5.43. Scores for teaching stress management and promoting self-initiated learning through external resources were moderate, at 5.17 and 5.43, respectively.

Cultural and Ethical Citizenship

Table 7. Respondents' Views on Cultural and Ethical Citizenship

No.	Sub-Theme	M	SD

Get involved			
1	Arabic courses are designed to allow students to contribute to the learning atmosphere by sharing the cultural and ethical aspects of Arabic.	5.37	0.57
2	Arabic courses are designed to encourage students to attend and participate in cultural and artistic activities related to the Arab world, such as cultural festivals and art exhibitions.	5.33	0.70
Stay Objective			
3	Arabic lectures are designed to facilitate classroom discussions that encourage students to understand and appreciate cultural and ethical diversity in the Arab world.	5.30	0.63
4	Arabic lectures are designed by incorporating materials in Arabic learning that reflect diverse Arab cultures and respect different ethical standards.	5.41	0.54
Plan-do-review			
5	Arabic courses encourage students to plan their language learning by selecting relevant materials, resources and activities.	5.41	0.50
6	Arabic courses are designed to encourage students to plan and implement cultural projects in Arabic, such as organizing language and cultural festivals in Arabic.	5.35	0.64
Be responsible			
7	Arabic courses are designed to provide students with an in-depth introduction to Arabic culture, including cultural aspects such as language, history, art, religion, and ethical values.	5.33	0.67
8	Arabic lectures emphasize the importance of Arabic in understanding Arabic culture as a window to understanding Arabic culture and ethics.	5.39	0.61

Table 7 suggests strong endorsement of culturally grounded and ethical citizenship in Arabic courses. Students value opportunities to share cultural insights (5.37) and participate in Arab cultural activities, such as festivals (5.33). There is also an appreciation for classroom discussions that promote cultural diversity (5.30) and the incorporation of diverse cultural materials in learning (5.41).

Computer and Digital Technologies

Table 8. Respondents' Views on Computer and Digital Technologies

No.	Sub-Theme	M	SD
Create digital identity			
1	Arabic courses are designed to encourage students to create creative content in Arabic, such as blogs, podcasts, videos, and digital presentations.	5.52	0.55
2	Arabic courses are designed to encourage students to use e-learning platforms that support Arabic learning, which can also include building a digital identity.	5.48	0.51
Embody positive, safe, and ethical digital behaviour			
3	Arabic lectures were designed to teach the importance of using sustainable and environmentally friendly digital technology in the context of Arabic.	5.52	0.51
4	Arabic courses are designed to encourage students to participate in positive and supportive online discussions, as well as to promote tolerance and respect for cultural diversity	5.37	0.53
Digital rights and responsibilities			
5	Arabic lectures are designed with an understanding of the importance of respecting copyright when using Arabic materials, such as text, audio, and video.	5.43	0.54

6	Arabic lectures are designed to teach students to communicate with ethics and respect in a digital environment and to maintain social and cultural norms.	5.43	0.50
Digital Privacy			
7	Arabic courses are designed to encourage students to use digital technology responsibly and wisely, as well as to maintain their privacy and that of others in online communication.	5.39	0.58
8	Arabic courses are designed to provide a strong understanding of digital privacy, including how personal data are collected, used, and protected in an online environment.	5.33	0.56

Table 8 shows that the respondents strongly supported the integration of computer and digital technologies in Arabic courses. Courses encouraging students to create creative content, such as blogs, podcasts, and videos in Arabic, received a mean score of 5.52. Additionally, utilizing e-learning platforms to support Arabic learning and build digital identities scored 5.48. Emphasizing the importance of sustainable digital technology in Arabic contexts received a mean score of 5.52, while fostering positive online discussions and promoting cultural tolerance scored 5.37.

Matching Application for Bloom's Digital Taxonomy in Arabic Lectures

Table 9. Applications used in Arabic lectures according to Bloom's Digital Taxonomy

No.	Level/Application	Users
C1 (Remembering)		
1	Google	46
2	Quizlet	20
3	Wakelet	2
4	Hypothes.is	1
C2 (Understanding)		
1	YouTube	46
2	Twitter (X)	7
3	GoodNotes	2
4	Skitch	1
5	Instagram	1
C3 (Applying)		
1	Canva	39
2	Google Drive	37
3	Google Sheets	18
4	Microsoft Office	4
5	Genially	2
6	Discord	3
C4 (Analysing)		
1	Google Scholar	44
2	Tripetto	2

3	Mentimeter	2
C5 (Evaluating)		
1	Kahoot	34
2	Google Docs	34
3	Quizizz	6
4	Google Forms	4
5	Notion	3
C6 (Creating)		
1	Blogger	13
2	Flipgrid	3
3	Chat GPT	1

Table 9 categorizes digital tools according to Bloom's taxonomy levels of cognitive learning. At the foundational Remembering (C1) level, Google emerged prominently with 46 uses, demonstrating its widespread utility in retrieving and recalling information, followed by Quizlet with 20 uses for aiding memory retention. Moving to Understanding (C2), YouTube was the most popular medium with 46 mentions, indicating its role in clarifying and comprehending complex topics through video content. Applying (C3) sees tools like Canva (39 uses) and Google Drive (37 uses) being extensively employed for practical tasks, In Analyzing (C4), Google Scholar stands out with 44 uses, emphasizing its critical role in conducting scholarly research. Evaluating (C5) involves tools such as Kahoot and Google Docs, each with 34 uses. Finally, Creating (C6) tools such as Blogger and Flipgrid illustrate their roles in fostering creativity and generating original content, albeit with fewer uses than tools at lower cognitive levels.

The information provides insight into how Arabic instructors use digital tools to enhance their pedagogical approaches. Several technology tools, such as Canva, Google services (Docs, Drive, and Scholar), and YouTube, are widely used. These platforms supplement instruction and are increasingly essential, enabling resource sharing, interactive learning, and content delivery (Mudinillah et al., 2022; Salam & Adam Mudinillah, 2021). Furthermore, Özdemir and Seçkin (2024) noted that using apps like Kahoot and Quizlet, which show a generic approach to fostering student involvement and participation, demonstrates the diversification of learning resources (Eltahir et al., 2021). Integrating these interactive platforms into instructors' teaching methods shows their response to a shifting educational landscape and recognizes varied student preferences while studying.

Technology Integration in Arabic Classrooms

Technology integration in Arabic classrooms has made it possible to transform traditional, face-to-face Arabic classrooms into more modern, digitally connected ones (Albantani & Madkur, 2019). Arabic lecturers tend to acknowledge that we live in a digital age and that technology must be included in lessons to engage students who lead digital lives. As seen in the earlier section, they use resources such as Canva to create presentations, Google services to share documents, and YouTube to create educational videos.

YouTube is favored for its extensive content library and global accessibility. Although some Arabic teaching videos are scarce, as Dağbaşı et al. (2023) noted, this platform is promising for easy access to various Arabic lessons, talks, and culturally appropriate films. Moreover, YouTube is a valuable tool for explaining challenging topics in Arabic linguistics and cultural studies with clarity and precision (Jumah-Alaso & Onisabi, 2020). Second, technology enhances the flexibility and accessibility of learning in Arabic education. Arabic learners can access resources at their own pace through online repositories or platforms like Google Drive, regardless of their geographic location (Hilmi & Ifawati, 2020). Digital tools such as Quizlet personalize learning experiences, allowing students to tailor their study sets efficiently (Kholis & Nadhif, 2023). Furthermore, multimedia components in instruction cater to diverse learning styles, accommodating auditory learners through audio recordings, visual learners with aids, and interactive exercises like Kahoot (Pascu, 2024). This inclusive approach enhances retention and comprehension of Arabic topics among students.

Despite these benefits, integrating technology into Arabic teaching poses challenges. Teachers must navigate issues such as needing reliable internet access, learning new software, and managing potential distractions (Ritonga et al.,

2024). Teachers often face the challenge of adapting to students already comfortable with digital tools (Jouejati, 2011). Many educators feel uncertain about using technology beyond administrative tasks, limiting their confidence and teaching effectiveness (Ghavifekr et al., 2016). Additionally, concerns about losing control or feeling anxious about technology due to unfamiliarity can hinder teachers' adoption of new tools (Fang & Warschauer, 2004; Leask, 2001). Time constraints and inadequate preparation further limit effective classroom technology integration (Hew & Brush, 2007).

Using digital resources in Arabic classes can provide students access to more relevant information and aid their learning (Bahruddin & Ramadhanti Febriani, 2020). However, if the critical evaluation of Arabic texts is a key learning objective, efforts should be made to improve students' analytical skills (Ahmed Abdel-Al Ibrahim et al., 2023). Emphasizing technology and digital tools in Arabic courses can enhance students' ability to collaborate and solve problems (Abo El Seoud, 2023). If evaluating individual contributions in group work is important, the process should be refined for fairness and effectiveness (Leising et al., 2022). Prioritizing presentations and argumentative tasks can help students develop oral communication skills in Arabic (Griffin and Coelhoso, 2019). If promotional materials are less relevant to learning Arabic, these assignments should be adjusted to better fit the educational goals (Daniel & Benish-Weisman, 2019).

Character development is important for academic success and personal growth in Arabic education. Encouraging traits such as motivation, perseverance, and initiative can help students become more effective learners (Alsharari & Alshurideh, 2021). Managing stress and emotions is also essential, particularly under academic pressure (Vestad & Tharaldsen, 2022). When cultural and ethical content is effectively integrated, students gain a broader understanding of the context in which Arabic is used (B. Beribe, 2023). This prepares them to interact in diverse cultural and ethical environments (Albantani et al., 2022).

Integrating digital literacy, ethical behavior, and privacy awareness into Arabic education is crucial. Focusing on creativity and eco-friendly technology can help students develop the relevant skills for the digital age, allowing them to use technology positively in Arabic communication (Md Yunus et al., 2019). However, a strong understanding of digital privacy is also necessary in today's complex online world (Acquisti et al., 2020). Universities should continuously update their curriculum to address digital technology and online privacy challenges, equipping students with the knowledge and skills to navigate the digital world effectively.

Conclusion

This study provides a systematic investigation into the application of Digital Bloom's Taxonomy (DBT) within Arabic language departments in Indonesian higher education, offering clear answers to its guiding research questions. The findings reveal a predominant focus on the lower-order cognitive skills of Remembering and Understanding. Lecturers demonstrate strong technical and pedagogical competence in using digital tools for activities such as vocabulary memorization and grammar instruction. However, the application of DBT becomes progressively less frequent at higher levels, with activities requiring Analyzing, Evaluating, and especially Creating being significantly underutilized. Tools such as digital flashcards, presentation software, and video players are commonly used to support lower-order thinking. In contrast, there is a notable scarcity of tools that facilitate collaboration, critical analysis, and original creation—such as online collaborative platforms, digital storytelling applications, or tools for creating multimedia content—which are essential for fulfilling the promise of 21st-century learning.

The findings also highlight several critical issues. Key challenges include (1) a gap in leveraging online platforms for interactive forums and sustained engagement; (2) insufficient integration of digital resources to teach Arab culture and customs in an immersive way; and (3) a broader pedagogical gap in designing learning experiences that systematically develop higher-order thinking skills despite lecturers' positive attitudes toward technology. Further investigation into effective pedagogical strategies for maximizing student engagement, assessing long-term educational outcomes, and evaluating the sustained development of linguistic proficiency and cultural competence is thus crucial. By addressing these limitations and pursuing innovative research directions, educators can continue to adapt and innovate to prepare students for success in a digitally driven world.

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