

Integrating Digital-Technology-Based Project-Based Learning to Build Student Engagement in Arabic Language Learning at Madrasah Aliyah

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Abstract

Arabic language learning in the digital era is expected not only to develop students' linguistic competence but also to foster twenty-first-century skills through learning that is innovative, contextual, and student-centered. One instructional model considered relevant to achieving these objectives is Project-Based Learning (PjBL) integrated with digital technology. This study aims to analyze the implementation of digital-technology-based Project-Based Learning in Arabic language learning, describe the integration of digital technology across each stage of the learning process, and examine its contribution to students' learning motivation, the development of the four Arabic language skills (mahārah al-istimā', mahārah al-kalām, mahārah al-qirā'ah, and mahārah al-kitābah), and twenty-first-century competencies. This study employed a descriptive qualitative approach using library research. Data were collected through document analysis of scholarly books, national and international journal articles, and relevant policy documents, and were analyzed using content analysis. The findings reveal that the implementation of digital-technology-based PjBL creates a more communicative, collaborative, and contextual Arabic learning environment through authentic projects, including videos, podcasts, vlogs, and digital portfolios. The integration of digital platforms such as Google Classroom, Google Docs, Canva, and CapCut effectively supports project planning, collaboration, production, presentation, and assessment. Furthermore, this instructional model enhances students' learning motivation, promotes the integrated development of the four Arabic language skills, and strengthens twenty-first-century competencies, including critical thinking, creativity, collaboration, communication, and digital literacy. These findings suggest that integrating Project-Based Learning with digital technology provides an effective strategy for creating innovative, adaptive, and future-oriented Arabic language instruction that meets the demands of twenty-first-century education.

Keywords: Project-Based Learning; digital technology; Arabic language learning; twenty-first-century competencies

ARTICLE INFO

Article history:

Received

May 10, 2026

Revised

June 02, 2026

Accepted

June 30, 2026

Published by
Website

ISSN

Copyright



STAI Masjid Syuhada Yogyakarta

<https://journal.stainsy.ac.id/index.php/Ihtimam/index>

2774-4302

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INTRODUCTION

Arabic language learning occupies a strategic position in Islamic education, functioning not only as a medium of communication but also as the principal means of understanding the Qur'an, Hadith, and classical and contemporary Islamic literature. Arabic instruction is further directed toward developing students' linguistic competence in an

integrated manner through a curriculum responsive to the needs of modern learning. Entering the digital era and twenty-first-century learning, Arabic language instruction can no longer be oriented solely toward linguistic mastery; it must also cultivate critical thinking, creativity, collaboration, communication, and digital literacy through learning that is innovative, contextual, and student-centered (Azra, 2012; Learning, 2019; Sholeh & Nuha, 2013)

Nevertheless, the practice of Arabic language instruction in many madrasah still faces a number of challenges. Instruction tends to be dominated by a teacher-centered approach relying on lecturing, qawā'id (grammar) drills, and mufradāt (vocabulary) memorization, so that opportunities for students to use Arabic in authentic communicative situations remain limited. This condition contributes to low learning motivation, minimal active student participation, and the suboptimal mastery of the four language skills, particularly mahārah al-kalām (speaking) and mahārah al-kitābah (writing) (Effendy, 2017).

The paradigm shift introduced through the implementation of the Kurikulum Merdeka (Freedom to Learn Curriculum) offers an opportunity to address these problems. This principle aligns with the development of an Arabic curriculum that positions students as active subjects of learning through experiences that are active, contextual, and oriented toward competency development. The curriculum emphasizes learning that is student-centered, contextual, collaborative, differentiated, and productive of authentic outputs through project-based activities. Within this paradigm, teachers are no longer the sole source of learning but act as facilitators who guide students in constructing knowledge through authentic learning experiences (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia (Kementerian Pendidikan Riset, dan Teknologi, 2022; Sholeh & Nuha, 2013).

In line with this paradigm, Project-Based Learning (PjBL) is regarded as an instructional model relevant to Arabic language learning. Through the completion of authentic projects, students gain the opportunity to integrate linguistic knowledge with thinking, collaboration, and communication skills. Learning products may take the form of conversational videos, podcasts, infographics, presentations, or digital portfolios that allow students to use Arabic in more meaningful contexts (Larmer et al., 2015; Sholeh, 2020).

The effectiveness of PjBL increases further when combined with digital technology. Various platforms, such as Google Classroom, Learning Management Systems (LMS), Google Docs, Canva, CapCut, and artificial-intelligence-based applications, allow the learning process to take place more flexibly, interactively, and collaboratively. Digital technology functions not merely as a medium for delivering material but also supports every stage of learning, from project planning, collaboration, and production to presentation and authentic assessment (Mishra & Koehler, 2006).

These findings are corroborated by a range of prior studies. Sarip et al. (2024) demonstrated that the implementation of e-learning-based PjBL improved students' learning activity, collaboration, and independence. Ihsan et al. (2025) likewise found that PjBL implementation under the Kurikulum Merdeka encourages students to be more active in constructing knowledge through authentic projects. Further research by Salsabila and Setiawan (2024) and Rahmaini (2024) has shown that PjBL effectively improves Arabic reading and speaking skills.

Nevertheless, a review of these studies indicates that most have focused on the effectiveness of PjBL for a single language skill or on the use of digital technology as a partial instructional medium. Studies that integrate Project-Based Learning and digital technology as a single, holistic instructional design for developing learning motivation, the four mahārah, and twenty-first-century competencies remain relatively limited, particularly within the context of Arabic language learning at Madrasah Aliyah. This condition indicates a research gap warranting further investigation (Ihsan et al., 2025; Rahmaini, 2024; Salsabila & Setiyawan, 2024; Sarip et al., 2024)

Building on this gap, the present study offers novelty in the form of a conceptual analysis of the implementation of digital-technology-based Project-Based Learning as an Arabic language learning strategy that integrates project-based instruction, the utilization of digital technology, the development of learning motivation, the four Arabic language skills, and twenty-first-century competencies within a single, unified instructional framework.

Accordingly, this study does not merely explain the effectiveness of PjBL or digital technology in isolation but also demonstrates how the two work synergistically to build Arabic language instruction that is innovative, communicative, and responsive to students' needs in the digital era.

Based on the foregoing discussion, this study aims to analyze the implementation of digital-technology-based Project-Based Learning in Arabic language learning, describe the forms of digital technology integration at each stage of instruction, and identify its contribution to learning motivation, the development of the four mahārah, and twenty-first-century competencies.

METHOD

This study employed a descriptive qualitative approach using a library research design. The qualitative approach was chosen because it aims to understand and interpret phenomena in depth on the basis of diverse literature sources, while library research was used to examine concepts, theories, research findings, and scholarly thought relevant to Arabic language learning, Project-Based Learning (PjBL), and the integration of digital technology in education (Moleong, 2019).

This study did not involve field data collection; rather, it focused on tracing, reviewing, and synthesizing relevant scholarly sources to produce a comprehensive conceptual understanding of the implementation of digital-technology-based Project-Based Learning in Arabic language learning (Zed, 2018).

The research data comprised primary and secondary data. Primary data were drawn from scholarly articles published in accredited national journals and reputable international journals discussing the implementation of Project-Based Learning, the utilization of digital technology, and Arabic language learning. Secondary data were obtained from reference books, scholarly proceedings, education policy documents, and research reports relevant to the focus of the study (Creswell & Creswell, 2023). Sources were selected based on criteria of thematic relevance, publisher credibility, publication recency, and contribution to the development of scholarship on digital-technology-based Arabic language learning. Data were collected through document analysis, namely by identifying, cataloguing, classifying, and selecting scholarly documents relevant to the research focus. Each source was then critically analyzed to obtain information on concepts, implementation models, instructional

strategies, the utilization of digital technology, and the impact of implementing Project-Based Learning in Arabic language instruction (Bowen, 2009; Creswell & Creswell, 2018).

Data were analyzed using the interactive analysis model developed by Miles et al. (2020). which comprises three stages: data condensation, data display, and drawing and verifying conclusions. During data condensation, the researchers selected and focused on information relevant to the research objectives. Data display was carried out by organizing the findings of the review into principal themes to facilitate interpretation. Conclusions were then drawn through a process of synthesizing and interpreting the various findings of prior research to produce a comprehensive understanding of the implementation of digital-technology-based Project-Based Learning in Arabic language learning, while simultaneously identifying research trends, research gaps, and the novelty that constitutes this study's contribution (Miles et al., 2020).

RESULT AND DISCUSSION

Implementation of Digital-Technology-Based Project-Based Learning on the Al-Ḥayāh al-Yaumiyyah (Daily Life) Theme

The theme of Al-Ḥayāh al-Yaumiyyah (الحياة اليومية, "Daily Life") is one of the themes most relevant for implementation through Project-Based Learning (PjBL), as it relates directly to students' authentic everyday experience. Material on activities such as waking up (al-istiḳāz), worship (al-'ibādah), studying at school (al-dirāsah fī al-madrasah), helping parents (musā'adat al-wālidayn), exercising (mumārasat al-riyāḍah), and interacting within the community provides students with a genuine context in which to use Arabic as a means of communication. Because the material is close to students' own experience, it is easier for them to connect new knowledge with prior experience, making learning more meaningful. Implementation of PjBL begins with the presentation of a contextual driving question, such as: كيف يمكننا تقديم أنشطتنا اليومية باللغة العربية باستخدام ("How do I spend my day?"), or كيف يمكننا تقديم أنشطتنا اليومية باللغة العربية باستخدام ("How can we present our daily activities in Arabic using digital technology?"). These questions become the starting point for students to identify problems, determine a project theme, gather information, and design the product to be produced. The teacher then guides students in drafting a project plan, setting an implementation schedule, assigning group roles, determining the digital media to be used, and formulating indicators of project success (Effendy, 2017; Piaget, 1950).

During the implementation stage, students work collaboratively to develop projects in the form of a video titled "يومي الجميل" ("My Beautiful Day"), a daily-activity vlog, an Arabic-language podcast, digital storytelling, an infographic, or a digital portfolio. The entire process culminates in a presentation of the project outcome, reflection on the learning experience, and evaluation of both process and product. These stages align with the PjBL syntax proposed by Larmer et al. (2015), which begins with the essential question, proceeds through designing a plan for the project, creating a schedule, and monitoring implementation and progress, and concludes with assessing the outcome and reflecting on the experience.

Throughout every stage of PjBL implementation, digital technology plays a strategic role as a learning ecosystem that supports Arabic instruction that is active, collaborative, contextual, and student-centered (Fauzi & Hidayati, 2024).

During the project-planning stage, teachers utilize Google Classroom or a Learning Management System (LMS) to convey learning objectives, explain the stages of PjBL, and distribute teaching modules, instructional videos, assessment rubrics, and project timelines. These platforms also function as a channel of communication between teacher and students, enabling ongoing mentoring and monitoring of project progress (Ihsan et al., 2025). This practice is consistent with the findings of a teaching-methodology training program for non-linear Arabic teachers, which showed that the use of digital platforms helps teachers design, implement, and evaluate Arabic instruction in a more systematic and interactive manner (Sholeh & Marhama, 2026).

At the project-development stage, students use Google Docs as a collaborative workspace to compose dialogue scripts, create storyboards, and jointly edit Arabic text. Through real-time collaboration features, every group member can contribute input on word choice (*mufradāt*), sentence structure (*tarākīb*), and grammatical accuracy without needing to be physically present in the same location (Ihsan et al., 2025).

At the production stage, students use a range of design and multimedia applications, such as Canva, Canva Video, and CapCut, to generate digital products, including the "يومي الجميل" video, a daily-activity vlog, an Arabic-language podcast, an infographic, or a digital magazine. These applications enable students to combine text, images, audio, animation, and video, making their message more communicative and consistent with the characteristics of twenty-first-century learning (Hidayati, 2024; Rahmaini, 2024).

The presentation and evaluation stage is likewise supported by digital technology. Completed products are presented or uploaded through Google Classroom or an LMS as part of a digital portfolio. Teachers then provide feedback based on an assessment rubric covering linguistic accuracy, creativity, product quality, collaboration, and communicative ability. This digital portfolio allows authentic assessment to be conducted more systematically, since student progress can be monitored at every stage of the project (Sarip et al., 2024)

A range of studies on web-based Project-Based Learning show that the use of digital platforms can enhance learning interaction, instructional flexibility, the quality of collaboration, and the quality of the products students generate. These findings are reinforced by digital-media-based Arabic teaching-methodology training, which demonstrated improved teacher competence in implementing more active and innovative Arabic instruction (Sholeh & Marhama, 2026). These findings indicate that digital technology within PjBL is no longer positioned merely as a supporting instructional medium but as a core component connecting every stage of learning. The success of a project is determined not only by the quality of the resulting product but also by teachers' ability to integrate technology harmoniously with pedagogical strategy and Arabic language content (Ihsan et al., 2025; Sarip et al., 2024).

These findings align with the Technological Pedagogical Content Knowledge (TPACK) framework developed by Mishra and Koehler (2006). According to this framework, learning proceeds optimally when teachers are able to integrate Content Knowledge (CK), Pedagogical Knowledge (PK), and Technological Knowledge (TK) in a balanced manner. In the implementation of PjBL on the *Al-Ḥayāh al-Yaumiyyah* theme, Content Knowledge is realized through material on daily activities in Arabic, Pedagogical Knowledge through the application of the PjBL syntax, while Technological Knowledge is realized through the use

of Google Classroom, Google Docs, Canva, and CapCut. The synergy of these three components produces a learning experience that is more contextual, interactive, and student-centered.

From a constructivist perspective, digital technology functions as a means of facilitating knowledge construction through interaction and collaboration. Students do not simply receive information from the teacher but actively construct understanding through information-seeking, discussion, script composition, digital-media production, and reflection on project outcomes. Digital technology thus becomes an instrument that enriches the learning experience rather than merely a device for delivering material (Vygotsky, 1978).

Based on the foregoing discussion, the implementation of digital-technology-based Project-Based Learning on the Al-Ḥayāh al-Yaumiyyah theme demonstrates that instructional success is determined not only by the choice of instructional model or the sophistication of the technology, but also by teachers' ability to integrate the two pedagogically. This integration produces a more meaningful learning experience, enhances student engagement, and provides a foundation for the integrated development of the four Arabic language skills, digital literacy, learning motivation, and twenty-first-century competencies.

Authentic Projects as a Vehicle for Developing the Four Language Skills (al-Mahārāt al-Lughawiyyah al-Arba')

The final product of Project-Based Learning is not merely an academic assignment but an authentic project that demonstrates students' ability to use Arabic in real-life contexts. Products may take the form of the "يومي الجميل" video, a daily-activity vlog, an Arabic-language podcast, a daily-schedule infographic, a digital magazine, or a digital portfolio. Through such projects, the four Arabic language skills develop in an integrated manner. Mahārah al-Istimā' (listening) develops through listening to sample dialogues, podcasts, and Arabic-language videos. Mahārah al-Kalām (speaking) develops through presentations, interviews, and the production of conversational videos. Mahārah al-Qirā'ah (reading) develops through reading various Arabic-language references related to the daily-life theme. Mahārah al-Kitābah (writing) develops through composing dialogue scripts, video scenarios, project reports, and learning reflections. Learning thus no longer separates these four skills but integrates them within a single, unified project activity (Thomas et al., 2022).

The implementation of digital-technology-based PjBL on the Al-Ḥayāh al-Yaumiyyah theme produces authentic projects capable of integrating the development of the four Arabic language skills within a single sequence of learning activities. In contrast to conventional instruction, which tends to teach listening, speaking, reading, and writing separately, project-based learning gives students the opportunity to use all these skills simultaneously in completing a meaningful project. The resulting product is realized not only as a written assignment but in various forms of digital work, such as the "يومي الجميل" ("My Beautiful Day") video, a daily-activity vlog, an Arabic-language podcast, a daily-schedule infographic, a digital magazine, digital storytelling, or a digital portfolio documenting the entire learning process (Ihsan et al., 2025).

These products reflect students' ability to apply Arabic as a communicative tool while also demonstrating their capacity to integrate digital literacy with linguistic competence. During project implementation, the development of the four mahārah proceeds in a gradual and complementary manner. Mahārah al-Istimā' (listening) develops as students listen to dialogues, podcasts, instructional videos, and native-speaker conversations as models of pronunciation and vocabulary use (Ellis, 2022). Listening activities occur during the material-exploration and project-preparation stages, providing students with adequate language input prior to language production. Mahārah al-Kalām (speaking) is then developed through group discussion, dialogue practice, brief interviews, presentation of project outcomes, and the production of videos on daily-life themes. Students, for example, engage in conversations using expressions such as:

متى تستيقظ كل يوم؟ ("What time do you wake up every day?")

أستيقظ الساعة الخامسة صباحاً، ثم أصلي الفجر، وبعد ذلك أذهب إلى المدرسة ("I wake up at five in the morning, then perform the dawn prayer, after which I go to school.")

Mahārah al-Qirā'ah (reading) develops through reading various Arabic-language sources, such as descriptive texts on daily activities, simple articles, digital dictionaries, and online references used as material for project preparation. Reading activities aim not only to obtain information but also to enrich vocabulary (mufradāt) and to develop understanding of sentence structure (tarākīb) for use in the final product. Mahārah al-Kitābah (writing), meanwhile, is developed through composing dialogue scripts, video scenarios, storyboards, project progress reports, learning reflections, and product descriptions in Arabic. Writing activities are conducted collaboratively through digital platforms such as Google Docs, allowing every group member to give direct input on the written output (Nurjanah & Izzan, 2024).

Authentic projects function as an integrative vehicle connecting all Arabic language skills within a single, unified learning experience. The development of the four mahārah no longer proceeds linearly and separately but occurs simultaneously throughout project completion (Brown & Green, 2023). Students first obtain language input through listening and reading, then process that information into language output through speaking and writing activities. This pattern shows that each skill mutually reinforces the others, forming a continuous learning cycle (Reinders & Hubbard, 2023).

From the perspective of second language acquisition, the integration of the four mahārah within project-based learning demonstrates a balance among input, interaction, and output. Input is obtained through listening and reading activities, interaction occurs during group discussion and project collaboration, while output is realized through presentations, videos, podcasts, and Arabic-language written work. This balance among the three components allows students to gain a more natural language-learning experience than instruction that focuses solely on grammar drills (Rahmaini, 2024).

In addition, authentic projects provide a meaningful context for language use, helping students understand the function of Arabic as a communicative tool rather than merely a school subject. When composing the "يومي الجميل" video, for instance, students do not simply memorize vocabulary about daily activities; they use that vocabulary to narrate personal experience, construct narrative, engage in dialogue, and interact with fellow group

members. Language is thus learned through genuine communicative practice, making the learning process more contextual and meaningful.

The use of digital technology strengthens the effectiveness of these authentic projects. Platforms such as Google Docs facilitate collaborative script writing, Canva assists in producing infographics and presentations, while CapCut enables students to generate more creative Arabic-language videos. This technological integration not only improves product quality but also expands opportunities for students to develop creativity, digital literacy, and problem-solving ability throughout the learning process (Lantolf et al., 2023).

Authentic projects on the Al-Ḥayāh al-Yaumiyyah theme therefore serve not merely as an end product of learning but as a medium integrating language acquisition, collaboration, creativity, digital literacy, and the development of communicative competence. This demonstrates that digital-technology-based Project-Based Learning can create Arabic language instruction that is more meaningful, applicable, and aligned with the demands of twenty-first-century competencies.

Contribution of Digital-Based Project-Based Learning to Learning Motivation

The implementation of digital-technology-based projects provides a more engaging learning experience than conventional instruction. Students are given the freedom to determine the form of their project, to use digital media with which they are already familiar, and to publish their work to a wider audience. This experience enhances students' sense of ownership over the learning process, allowing motivation to develop intrinsically. According to Self-Determination Theory as developed by Deci and Ryan, learning motivation increases when students have the opportunity to develop autonomy, competence, and relatedness. These three aspects are evident in the implementation of Project-Based Learning, since students are given the freedom to develop their project, the experience of demonstrating their competence, and the opportunity to cooperate with fellow group members throughout the learning process (Sarip et al., 2024).

The implementation of digital-technology-based PjBL on the Al-Ḥayāh al-Yaumiyyah theme has a positive impact on increasing student learning motivation. Instruction that was previously dominated by vocabulary (mufradāt) and grammar (qawā'id) memorization shifts toward learning oriented around authentic, real-world experience through project completion. Students are given the opportunity to determine the form of their project, choose the digital media to be used, develop ideas creatively, and present their work to the teacher and classmates. This condition makes students more active, enthusiastic, and responsible for the learning process (Ihsan et al., 2025).

On the Al-Ḥayāh al-Yaumiyyah theme, learning motivation is evident as students independently search for new vocabulary, refine their pronunciation (makhārij al-ḥurūf), compose dialogue, practice speaking, and edit the project video for publication. Students strive not merely to complete the assignment but to produce their best work, since the project will be presented and will receive appreciation from teachers and peers. Digital projects thus become a stimulus that drives students to engage actively at every stage of learning.

This increase in learning motivation is not caused by the use of digital technology alone but by a broader shift in the instructional paradigm that gives students space to participate actively in constructing their own learning experience. Digital technology

functions as a facilitator supporting project implementation, while Project-Based Learning serves as the pedagogical strategy that drives optimal student engagement (Ryan & Deci, 2000).

From the perspective of Self-Determination Theory (SDT), developed by Edward L. Deci and Richard M. Ryan, intrinsic motivation develops when individuals satisfy three basic psychological needs: autonomy, competence, and relatedness. These three dimensions are clearly evident in the implementation of digital-technology-based Project-Based Learning. The autonomy dimension is apparent when students are given latitude to determine the form of their project, choose the digital media to be used, construct the storyline, and divide tasks by group agreement. This freedom fosters a sense of ownership over the project, motivating students to complete it earnestly (Ryan & Deci, 2000). The competence dimension develops as students are able to demonstrate their Arabic proficiency through the resulting product. During the production of the "يومي الجميل" video, for example, students strive to refine their pronunciation, enrich their vocabulary, and construct correct sentences so that the final project achieves good quality. Successfully completing the project provides a mastery experience that strengthens self-confidence and enhances motivation for continued learning (Vansteenkiste et al., 2006).

The relatedness dimension, meanwhile, is evident through social interaction during the collaborative process. Students provide mutual feedback on dialogue scripts, help correct language errors, discuss creative ideas, and work together to resolve technical difficulties during project production. This positive social relationship creates a supportive learning atmosphere, allowing students to feel part of a learning community characterized by mutual respect and support. This interpretation indicates that learning motivation within digital-technology-based Project-Based Learning results from the interaction among the instructional model, the authentic project context, and a collaborative learning environment (Ryan & Deci, 2000). Digital technology certainly increases the attractiveness of learning, but the more decisive factor is students' active involvement throughout project planning, implementation, and publication. In other words, learning motivation grows because students perceive what they are learning as meaningful, purposeful, and genuinely useful in daily life.

Contribution to Twenty-First-Century Competencies

The implementation model of digital-technology-based Project-Based Learning on the Al-Ḥayāh al-Yaumiyyah theme not only enhances Arabic proficiency but also develops twenty-first-century competencies. Every stage of learning promotes the development of critical thinking, creativity, collaboration, and communication as the four core competencies required in the digital era (Malyn-Smith et al., 2021). In addition, the use of various digital platforms throughout the learning process strengthens students' digital literacy, whether in searching for information, processing data, generating content, or using technology ethically and responsibly. Arabic language instruction is thus no longer oriented solely toward linguistic achievement but becomes a vehicle for developing the competencies required in twenty-first-century academic, social, and professional life. This model demonstrates that the Al-Ḥayāh al-Yaumiyyah theme can serve as an effective learning context for integrating language mastery, digital literacy, and twenty-first-century competencies through a Project-Based Learning approach (Johnson & Johnson, 2009).

Critical thinking develops as students analyze the Al-Ḥayāh al-Yaumiyyah theme, determine which activities to include in the project, select appropriate vocabulary and sentence structures, and solve the various problems that arise during project preparation. Students do not merely copy available material but engage in a process of information selection, evaluation of learning sources, and decision-making based on the needs of the project at hand.

Creativity is evident in the process of designing the digital product. Students are given the freedom to determine the form of their project, such as the "يومي الجميل" video, a vlog, a podcast, digital storytelling, an infographic, or an Arabic-language digital magazine. This freedom fosters innovative ideas in script composition, filming, video editing, illustration selection, and information presentation, resulting in products that are both communicative and aesthetically appealing. Collaboration develops through the division of tasks within the group, with each member holding a distinct responsibility, such as scriptwriter, language editor, narrator, video editor, or presenter (Ihsan et al., 2025). This process requires students to work together, respect the opinions of group members, resolve conflict constructively, and take responsibility for completing shared tasks. Communication, meanwhile, develops through group discussion, dialogue practice, project presentation, and the publication of work in Arabic. Students learn to convey ideas both orally and in writing, respond to peers' opinions, and use Arabic in genuine communicative contexts.

Beyond the 4C competencies, the findings also indicate that the use of digital technology throughout the learning process strengthens students' digital literacy. The use of platforms such as Google Classroom, Google Docs, Canva, CapCut, and Learning Management Systems (LMS) trains students to search for information from various sources, evaluate the credibility of information, process data into digital products, and use technology ethically and responsibly. The learning process thus not only produces mastery of Arabic-language content but also increases students' readiness to face a technology-based learning ecosystem and workforce.

From the perspective of the OECD Learning Compass 2030 framework, the learning experience gained through authentic projects also develops student agency, namely students' capacity to make decisions, take responsibility for their own learning process, and produce work of value to themselves and their environment. In the "يومي الجميل" project, for example, students independently determine the video concept, select the digital media to be used, compose the script, divide tasks, and evaluate the outcome of their group's work. This experience shows that students are no longer passive recipients of information but the principal agents of their own learning (Development, 2020).

Furthermore, the use of digital technology strengthens the dimension of digital literacy, which in the modern education era constitutes an integral part of twenty-first-century competencies. Students not only learn to use digital applications as tools for content production but also learn to select valid information, respect copyright, maintain digital communication ethics, and take responsibility for their use of technology. The integration of digital technology within Project-Based Learning thus not only improves the effectiveness of Arabic language instruction but also shapes students' character as digital citizens who are capable, critical, and responsible (Alghamdi, 2023).

This model demonstrates that twenty-first-century competencies do not emerge as a stand-alone end result but as an accumulation of a systematically designed learning process.

A theme close to students' own lives becomes the trigger for meaningful learning; Project-Based Learning becomes the pedagogical strategy that activates students; digital technology becomes the medium that expands the learning space; while authentic projects become the means of integrating Arabic proficiency with the development of twenty-first-century competencies

CONCLUSION

The findings show that the implementation of digital-technology-based Project-Based Learning (PjBL) is an effective instructional strategy for improving the quality of Arabic language learning in the digital era. Integrating PjBL with digital technology shifts the instructional paradigm from teacher-centered learning to student-centered learning through project-based activities that are contextual, collaborative, and authentic. In its implementation, digital technology functions not merely as an instructional medium but as an integral part of every stage of PjBL, from planning, implementation, collaboration, and production to presentation and project evaluation. The use of various platforms, such as Google Classroom, Google Docs, Canva, and CapCut, supports the creation of a learning environment that is more interactive, flexible, and oriented toward students' learning experience.

This study also shows that the implementation of digital-technology-based Project-Based Learning contributes significantly to increased learning motivation, as students gain the opportunity to learn independently, work cooperatively in groups, and produce projects that are meaningful and relevant to real life. In addition, project-based learning is able to integrate the development of the four Arabic language skills (mahārah al-istimā', al-kalām, al-qirā'ah, and al-kitābah) through a range of communicative activities and authentic products. Arabic language instruction is thus no longer oriented solely toward the mastery of linguistic aspects but also toward the ability to use the language in real-world contexts.

The findings further demonstrate that the synergy between Project-Based Learning and digital technology not only strengthens Arabic language competence but also develops twenty-first-century competencies, including critical thinking, creativity, collaboration, communication, and digital literacy. The novelty of this study lies in its conceptual synthesis, which positions digital technology as an integrated component within every stage of Project-Based Learning rather than merely as a supporting instructional medium. This model may therefore serve as an alternative, innovative, adaptive Arabic language instructional strategy relevant to the implementation of the Kurikulum Merdeka and the demands of twenty-first-century education..

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