

Article

Digital Learning Tools in Language Education: An Explanatory Model of Their Effects on Language Skills and Quality of Life

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Abstract

This study examines the extent to which Arabic language teachers employ digital learning tools and proposes an explanatory model of their effects on language skills development and students' quality of life. An explanatory approach was adopted, and data were collected through a questionnaire administered to a sample of 266 Arabic language teachers. Overall, the use of digital learning tools was high across all dimensions. Lesson preparation recorded the highest level, followed by quality of life, lesson implementation, and lesson evaluation. The results indicate that digital learning tools have a positive effect on both language skills development and quality of life. Among the examined dimensions, lesson implementation showed the strongest effect, whereas lesson preparation did not yield a statistically significant effect. Language skills also showed a direct positive effect on quality of life. In addition, the findings indicate an indirect effect of digital learning tools on quality of life through language skills, supporting the mediating role of language skills in explaining the relationships among the study variables.

Keywords: digital learning tools; educational technology; language skills; quality of life; technology integration

1. Introduction

Digital tools are now an integral part of contemporary education, offering clear benefits that support both teachers and learners in achieving more effective learning outcomes. In addition to facilitating instructional processes, these tools contribute to achieving both general and subject-specific educational goals, while also reducing the time and effort required by those involved in education.

In the context of Arabic language education at the general education level, the integration of digital learning tools has become an essential component of contemporary teaching practices (Mihaylova et al., 2022; Wang & Kabilan, 2024; Şentürk et al., 2023). These tools can enhance learners' core linguistic skills and effective communication, and the development of these skills may ultimately contribute to an improved quality of life (Zeide & Odiña, 2020; Feeney et al., 2017). Within this context, Arabic language teachers play a central role in using these tools in ways that enhance their pedagogical impact.

This direction is consistent with the strategic orientation of the Ministry of Education in the Kingdom of Saudi Arabia toward digital transformation in education. It is also reflected in Arabic language curriculum documents, as well as in the general and specialized standards endorsed by the Education and Training Evaluation Commission (ETEC), particularly those related to teacher licensing and professional competencies.



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Digital learning tools include a wide range of technologies that support language learning across planning, implementation, and assessment processes. Previous studies have identified several types of these tools, such as digital platforms (Hassan & Wimin, 2022; Mesh, 2016), computer-based applications and educational software (Al-Jadaani, 2024; Al-Sharafat, 2023), mobile devices like smartphones and tablets (Mihaylova et al., 2022; Al-Malham, 2021), social media environments (Haryanto, 2023), digital games and smart devices (Daud et al., 2024), as well as emerging technologies such as artificial intelligence (Aljabr & Al-Ahdal, 2024; Rodriguez-Ruiz et al., 2021; Borham et al., 2024). This diversity reflects the expanding role of educational technologies in supporting different dimensions of language learning and instructional practice.

Previous research indicates that the integration of digital learning tools in language education generally ranges from moderate to high levels and is positively associated with language development and broader educational outcomes. For example, Snodgrass Rangel et al. (2015) reported moderate use of digital curricula among teachers, whereas Al-Sharafat (2023) found highly positive attitudes among Arabic language teachers toward technology integration. These findings suggest that although acceptance of digital tools is relatively strong, differences in actual implementation practices still exist.

Based on these findings, several studies have emphasized the importance of integrating digital learning tools into Arabic language instruction in a more systematic way to support the development of linguistic competencies and contribute to students' quality of life (Yang & Yang, 2025; Mesh, 2016; Zeide & Odiña, 2020; Şentürk et al., 2023). However, the effectiveness of this integration depends not only on the availability of tools, but also on pedagogical alignment, teacher readiness, and contextual factors.

The literature also shows that research on digital learning has developed along several interconnected directions. One of the main directions focuses on technological and pedagogical integration. For instance, Yang and Yang (2025) highlighted the role of social context, language proficiency, and ongoing professional development in shaping teachers' technological pedagogical content knowledge (TPACK). This indicates that effective integration is not only technical in nature but is also influenced by cognitive and contextual factors. This perspective supports the current study's explanatory model by emphasizing that effective technology integration depends on both pedagogical and contextual factors rather than technical access alone.

Another direction focuses on emerging technologies, particularly artificial intelligence, and their implications for language education. Studies such as Borham et al. (2024) and Aljabr and Al-Ahdal (2024) point to both the opportunities and challenges associated with AI integration, including ethical considerations and the need to maintain pedagogical integrity. These studies suggest that while AI has strong potential, its educational value depends on responsible and context-sensitive use.

A third line of research focuses on learner engagement and instructional innovation. For example, Daud et al. (2024) showed that digital games can enhance motivation and engagement in Arabic language learning, while previous studies also highlighted the effectiveness of web-based and mobile learning environments in improving language skills and communication competencies (Baguzina, 2020; Mihaylova et al., 2022).

In parallel, a number of studies have examined how digital tools contribute to the development of specific linguistic skills. Al-Jadaani (2024) confirmed the positive impact of digital technologies on academic writing, while Al-Faqi (2025) emphasized the role of integrated digital environments in enhancing core language skills. At the same time, these studies point to ongoing challenges, such as infrastructural limitations and the need for more robust instructional design frameworks.

Teacher-related factors have also been widely discussed. Studies indicate that teachers' attitudes toward digital tools are generally positive (Al-Sharafat, 2023), yet their effective use is shaped by training, experience, and institutional support (Şentürk et al., 2023; Hassan & Wimin, 2022). This highlights the importance of professional development programs that extend beyond technical training to include pedagogical and evaluative competencies.

From a broader perspective, the relationship between language proficiency and quality of life has been addressed in studies such as Zeide and Odiña (2020) and Feeney et al. (2017), which show that linguistic competence is closely linked to different aspects of well-being. These findings suggest that language learning should be viewed not only as an academic outcome, but also as a contributor to broader human development.

Taken together, these findings indicate that although digital learning tools are widely recognized for their pedagogical value, the pathways through which they lead to broader developmental outcomes are still not fully understood. In this context, linguistic skills can be viewed as a key intermediary mechanism linking instructional practices to broader learner outcomes.

Despite the breadth of the existing literature, a clear conceptual and empirical gap remains. Most prior studies have examined digital learning tools, linguistic skills, and quality of life either separately or through simple associations. While such approaches are useful, they offer limited explanatory insight into how these variables interact within an integrated framework. In particular, there is still limited understanding of the mechanisms through which digital learning tools influence quality of life and whether this effect operates directly or through the development of linguistic skills.

This gap limits the development of theoretically grounded and empirically testable models that capture the complexity of these relationships. Accordingly, this study addresses this gap by developing an explanatory model that examines the relationships among digital learning tools, linguistic skill development, and quality of life. More specifically, it investigates the mediating role of linguistic skills in this relationship, providing a clearer understanding of the mechanisms through which digital learning contributes to both educational and life outcomes.

This approach goes beyond descriptive and correlational perspectives toward a more integrated and empirically testable explanation. In this context, the study empirically tests how digital learning tools influence students' quality of life, with particular attention to the mediating role of linguistic skills as a key explanatory pathway. This study contributes to understanding how digital learning tools influence students' quality of life, both directly and indirectly, through the development of language skills.

2. Theoretical Foundation and Hypotheses

This study is grounded in constructivist theory, which provides a strong basis for integrating digital tools in education through active learning and knowledge construction. Within this framework, learners build knowledge through their engagement with digital learning environments and technology-enhanced interactions.

In addition, the study draws on Self-Determination Theory (SDT), which complements the constructivist perspective by highlighting the role of autonomy, competence, and engagement in enhancing learning outcomes and well-being. In technology-enhanced learning environments, interactive digital tools can support students' intrinsic motivation, which in turn contributes to the development of linguistic skills and broader well-being outcomes.

Taken together, these theoretical perspectives provide a foundation for understanding how digital learning tools may influence both educational and developmental outcomes.

Based on this theoretical perspective, the study proposes the following hypotheses:

H1. Digital learning tools, across their three dimensions, have a statistically significant positive influence on students' linguistic skill development.

H2. Digital learning tools, across their three dimensions, are positively associated with students' quality of life at a statistically significant level.

H3. Linguistic skill development significantly contributes to students' quality of life.

H4. Linguistic skill development mediates the relationship between digital learning tools and students' quality of life.

3. Conceptual Model of the Study

In line with the theoretical framework and the proposed hypotheses, a conceptual model was developed to explain the relationships among the study variables (see Figure 1).

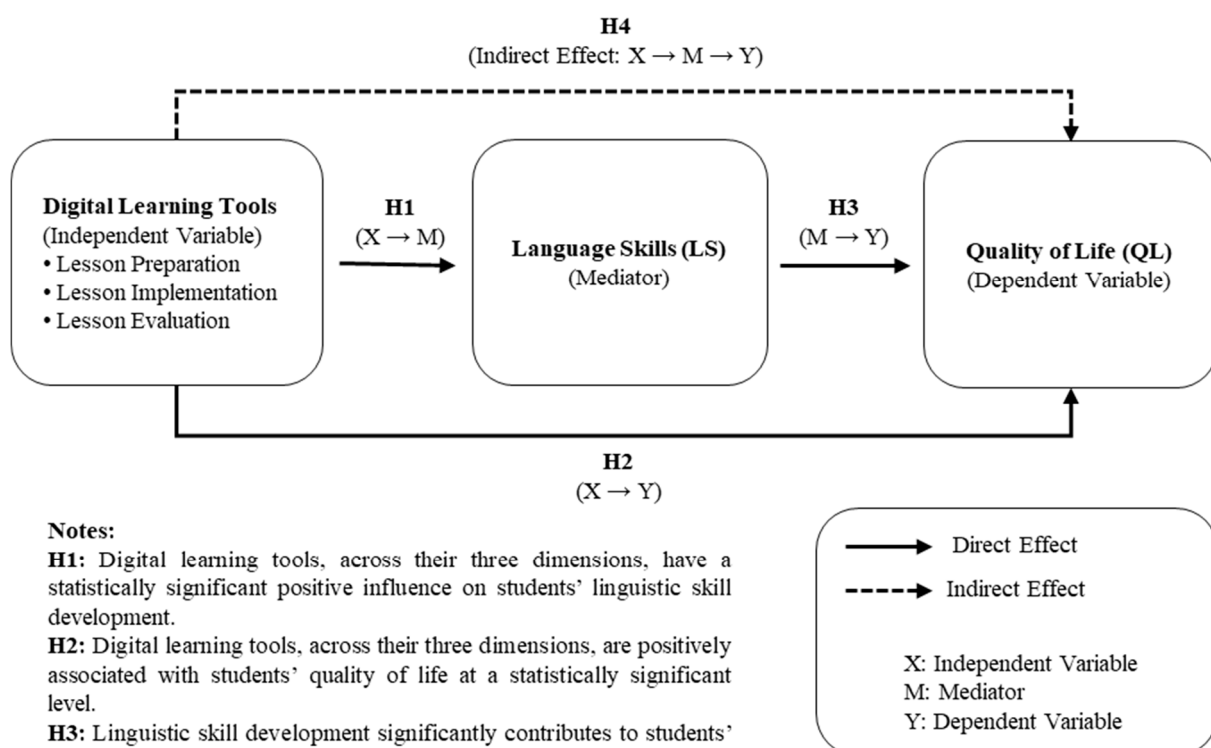


Figure 1. The proposed conceptual model of the study.

Figure 1 presents the conceptual model of the study, illustrating both the direct and indirect relationships among the variables. Digital learning tools are conceptualized as a multidimensional independent construct, language skills as a mediating variable, and quality of life as the dependent variable, consistent with hypotheses H1–H4.

4. Research Questions

The study addresses the following research questions:

1. What digital learning tools are appropriate for use in Arabic language curricula?
2. To what extent do teachers employ digital learning tools in the preparation, implementation, and assessment of Arabic language lessons to support students' linguistic skill development?

3. To what extent do teachers employ digital learning tools in Arabic language lessons to enhance students' well-being and quality of life?
4. Are there statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the degree of teachers' use of digital learning tools in Arabic language curricula attributable to the variables of gender, academic qualification, number of training courses, and years of experience?

5. Research Objectives

This study aims to:

1. Identify appropriate digital learning tools for use in Arabic language curricula.
2. Examine the extent to which teachers employ digital learning tools in the preparation, implementation, and assessment of Arabic language lessons to support students' linguistic skill development.
3. Examine the extent to which teachers employ digital learning tools in Arabic language lessons to enhance students' well-being and quality of life.
4. Identify differences in the degree of employing digital learning tools in Arabic language curricula based on gender, academic qualification, number of training courses, and years of experience.
5. Explain the direct effect of employing digital learning tools—across their three dimensions (preparation, implementation, and assessment)—on the development of linguistic skills and the enhancement of quality of life, in addition to examining the indirect effect of digital learning tools on quality of life through the mediating role of linguistic skills.

6. Significance of the Study

This study contributes to understanding how digital learning tools can be effectively integrated into Arabic language curricula to support linguistic skill development and broader educational outcomes.

The study also provides empirical evidence regarding the role of digital learning tools in enhancing students' well-being and quality of life within general education contexts in Saudi Arabia.

Furthermore, the study highlights the instructional and pedagogical requirements necessary for the effective integration of digital learning tools across Arabic language lessons.

This, in turn, is expected to positively reflect on students' quality of life in general education stages in the Kingdom of Saudi Arabia.

7. Operational Definitions

7.1. Digital Learning Tools

Digital learning tools are defined as the devices and applications represented by the items included in the study questionnaire, distributed across three dimensions:

1. Lesson preparation: the use of digital tools in preparing Arabic language lessons to develop students' linguistic skills.
2. Lesson implementation: the use of digital tools during the delivery of Arabic language lessons.
3. Lesson assessment: the use of digital tools in evaluating students' linguistic skills.

Responses were measured using a five-point Likert scale: Very High, High, Moderate, Low, Very Low.

7.2. Linguistic Skills

Linguistic skills are operationally defined as the development of students' language skills in Arabic language lessons, as measured by the items included in the questionnaire developed for this study.

7.3. Quality of Life

In this study, quality of life refers to the educational and well-being outcomes associated with the use of digital learning tools in Arabic language lessons, as perceived by Arabic language teachers. These include equal opportunities for students to participate and engage in discussion, the provision of a safe learning environment, the achievement of balanced and holistic development, effective communication among students and between students and teachers, the development of social relationships, increased motivation toward learning, and enhanced self-satisfaction among students.

8. Research Methodology

The study adopted an explanatory research approach and applied the research instrument to a sample of Arabic language teachers in the Kingdom of Saudi Arabia.

The study aimed to develop an explanatory model of the relationships among the study variables by examining the direct and indirect effects of digital learning tools—across their three dimensions (preparation, implementation, and assessment)—on linguistic skills and quality of life. It also examined the indirect effect of digital learning tools on quality of life through the mediating role of linguistic skills.

In addition, the study examined the extent to which teachers employ digital learning tools in Arabic language curricula to support linguistic skill development and enhance students' well-being and quality of life.

Statistical analyses included:

- Means and standard deviations.
- Correlation coefficients.
- Regression analysis.
- Mediation analysis using bootstrapping.
- Path analysis.

9. Study Limits

The study is defined by the following limits:

- Topical limits: The study focuses on the use of digital learning tools in language curricula, linguistic skills, and the enhancement of quality of life.
- Spatial limits: The study was conducted in public schools in Riyadh, Makkah, Hail, the Eastern Province, and Al-Jouf in the Kingdom of Saudi Arabia.
- Temporal limits: The second semester of the 2025 academic year.
- Human limits: The study was limited to Arabic language teachers in public schools across all general education levels in the selected regions.

10. Population and Sample

The study population consisted of all Arabic language teachers in public schools across general education levels in Riyadh, Makkah, Hail, the Eastern Province, and Al-Jouf in Saudi Arabia. The final sample consisted of 266 teachers based on the returned responses.

Data collection was conducted after obtaining all required ethical and institutional approvals, including ethical approval from the Research Ethics Committee at the University of Hail (Approval No. H-2025-567, dated 13 January 2025). In addition, approval was

obtained from the Education Policy Research Center at the Ministry of Education, and informed consent was secured from all participants prior to data collection.

The questionnaire was distributed through official educational channels in the targeted regions. Follow-up procedures included direct communication with responsible authorities. As the researchers did not have access to the total number of teachers to whom the questionnaire was distributed, the response rate could not be calculated. Therefore, the final number of valid responses ($n = 266$) is reported.

Table 1 presents the distribution of the study sample across the examined demographic variables.

Table 1. Distribution of the study sample across variables ($n = 266$).

Variable		<i>n</i>	%
Gender	Male	92	34.6
	Female	174	65.4
Educational Qualification	Below Bachelor's Degree	11	4.1
	Bachelor's Degree	231	86.8
	Higher Diploma	9	3.4
	Master's Degree	10	3.8
	Doctoral Degree	5	1.9
Years of Service	Less than 5 years	9	3.4
	5 to less than 10 years	12	4.5
	10 years or more	245	92.1
Number of Training Courses	Fewer than 5 courses	22	8.3
	5 to less than 10 courses	40	15
	10 courses or more	204	76.7
Educational Stage	Primary	149	56
	Intermediate	68	25.6
	Secondary	49	18.4
Educational Administration	Riyadh	19	7.1
	Makkah	9	3.4
	Hail	32	12
	Eastern Province	19	7.1
	Al-Jouf	187	70.3

Note. $n = 266$. The table presents the distribution of the study sample by gender, academic qualification, years of experience, training courses, educational stage, and educational administration.

11. Research Instrument

To achieve the study objectives, a questionnaire was developed following these steps:

11.1. Instrument Development and Validity

The questionnaire was developed by the researchers based on the relevant literature and previous empirical studies.

The instrument was then reviewed by a panel of experts, and the necessary revisions were made based on their feedback.

Internal consistency was examined using Pearson correlation coefficients between each item and its corresponding dimension score.

The coefficients ranged from 0.712 to 0.939, and all were statistically significant at ($p \leq 0.01$), indicating a high level of internal consistency.

11.2. Reliability

Reliability was assessed using Cronbach's alpha. The results indicated high reliability across all dimensions, with values ranging from 0.90 to 0.97, while the overall reliability

coefficient reached 0.97. These results indicate that the instrument demonstrates a high level of reliability and internal consistency.

11.3. Structure of the Instrument

The questionnaire consisted of 30 items. Twenty-one items measured teachers' use of digital learning tools across lesson preparation, lesson implementation, and lesson evaluation (seven items for each aspect). One item measured language skills, and eight items measured students' quality of life. This instrument was designed to address the study questions concerning the use of digital learning tools in Arabic language curricula and to examine the relationships between digital learning tools, language skills, and students' quality of life.

11.4. Scale Interpretation

Mean scores were interpreted as follows:

- 4.20–5.00 → Very High.
- 3.40–<4.20 → High.
- 2.60–<3.40 → Moderate.
- 1.80–<2.60 → Low.
- 1.00–<1.80 → Very Low.

(The interval length = 0.80.)

12. Results

12.1. Descriptive Statistics

The following descriptive results provide an initial overview of the level of digital learning tool use before proceeding to inferential analyses examining the relationships among the study variables. The questionnaire was administered to the study sample to address the study objectives and research questions. Means and standard deviations were calculated to determine the level of digital learning tool utilization across the study variables.

The descriptive analyses address the following research questions:

1. What is the level of teachers' use of digital learning tools in lesson preparation, implementation and evaluation in Arabic language curricula to support students' linguistic skill development?
2. What is the level of teachers' use of digital learning tools in Arabic language lessons to enhance students' well-being and quality of life?

Table 2 presents the descriptive statistics for the study variables.

Table 2. Descriptive Statistics for the Study Variables.

Variable	<i>M</i>	<i>SD</i>
Lesson Preparation (PL)	4.23	0.66
Lesson Implementation (IL)	4.12	0.71
Lesson Evaluation (EL)	3.79	0.85
Linguistic Skills (LS)	4.17	0.81
Quality of Life (QL)	4.14	0.74
Overall Mean	4.07	0.66

The overall mean for digital learning tool use was high ($M = 4.07$, $SD = 0.66$), indicating substantial utilization among teachers.

At the dimensional level, lesson preparation ranked first among the dimensions of digital learning tool use ($M = 4.23$, $SD = 0.66$), followed by lesson implementation ($M = 4.12$, $SD = 0.71$), and then lesson evaluation ($M = 3.79$, $SD = 0.85$).

Regarding the outcome variables, linguistic skills recorded a high mean score ($M = 4.17$, $SD = 0.81$), followed by quality of life ($M = 4.14$, $SD = 0.74$).

At the item level, the highest mean within the preparation dimension was for preparing lessons using computers ($M = 4.33$), whereas the lowest mean was associated with the use of social media in lesson preparation ($M = 4.13$).

Within the implementation dimension, the highest mean was observed for the use of digital platforms during lesson implementation ($M = 4.20$), while the lowest was for training students to use digital tools ($M = 3.94$).

In the evaluation dimension, the highest mean was for the use of electronic objective tests ($M = 4.06$), whereas the lowest was for the use of electronic questionnaires ($M = 3.66$).

Regarding quality of life, the highest mean was associated with providing a safe learning environment ($M = 4.20$), while the lowest was related to building social relationships among students ($M = 4.09$).

12.2. Differences Based on Demographic Variables

The results indicated statistically significant differences at the $\alpha = 0.05$ level attributable to gender, in favor of females, across all dimensions and the overall score.

No statistically significant differences were found by academic qualification, years of experience, or geographical region.

For training courses, significant differences appeared in the preparation and implementation dimensions and in the overall score. Post hoc comparisons (Scheffé test) showed that participants with more than ten training courses scored higher than those with fewer than five courses. No significant differences were found in the evaluation and quality-of-life dimensions.

13. Correlation Analysis

Pearson correlation analysis showed significant positive relationships among all study variables ($p < 0.001$), supporting the subsequent use of regression analysis.

Strong correlations were found among the dimensions of digital learning tool use: preparation and implementation ($r = 0.904$), preparation and evaluation ($r = 0.692$), and implementation and evaluation ($r = 0.739$).

In addition, moderate to strong correlations were observed between the dimensions of digital learning tool use and both dependent variables (language skills and quality of life), with correlation coefficients ranging from 0.583 to 0.763.

A strong positive correlation was also found between language skills and quality of life ($r = 0.830$).

14. Assumptions Testing

The Durbin–Watson values ranged from 1.86 to 1.91, indicating no autocorrelation in the residuals.

Variance Inflation Factor (VIF) values ranged from 2.22 to 6.36, indicating no serious multicollinearity concerns.

The Shapiro–Wilk test indicated that the data were normally distributed, supporting the assumptions required for linear regression analysis.

15. Regression Analysis Model Fit

The overall fit of the regression models was assessed using model fit indices, including R^2 , adjusted R^2 , and the F -statistic (Table 3).

Table 3. Model Fit Indices for Linear Regression Analyses.

Model	R^2	Adjusted R^2	F (df1, df2)	p
1 (QL)	0.610	0.606	F (3, 262) = 137	<0.001
2 (LS)	0.431	0.425	F (3, 262) = 66.2	<0.001

The regression analysis results presented in Table 3 indicated the following:

- For quality of life (QL), the model was statistically significant, $F(3, 262) = 137$, $p < 0.001$, explaining 61% of the variance ($R^2 = 0.610$, Adjusted $R^2 = 0.606$).
- For language skills (LS), the model was also statistically significant, $F(3, 262) = 66.2$, $p < 0.001$, explaining 43.1% of the variance ($R^2 = 0.431$, Adjusted $R^2 = 0.425$).

16. Predictors of Quality of Life and Language Skills

To examine the effects of the dimensions of digital learning tools (lesson preparation, implementation, and evaluation) on quality of life and linguistic skills, a multiple linear regression analysis was conducted (see Table 4).

Table 4. Regression Coefficients for Quality of Life and Linguistic Skills.

Predictor	β (QL)	t	p	β (LS)	t	p
PL	0.075	0.82	0.412	0.095	0.87	0.385
IL	0.516	5.31	<0.001	0.292	2.48	0.014
EL	0.242	4.21	<0.001	0.323	4.66	<0.001

The regression coefficients (Table 4) showed the following:

Predictors of Quality of Life

- Lesson preparation was not a significant predictor ($\beta = 0.075$, $p = 0.412$);
- Lesson implementation had a significant positive effect ($\beta = 0.516$, $p < 0.001$);
- Lesson evaluation also had a significant positive effect ($\beta = 0.242$, $p < 0.001$).

Predictors of Language Skills

- Lesson preparation was not significant ($\beta = 0.095$, $p = 0.385$);
- Lesson implementation had a significant positive effect ($\beta = 0.292$, $p = 0.014$);
- Lesson evaluation had a significant positive effect ($\beta = 0.323$, $p < 0.001$).

17. Mediation Analysis

A bootstrapped mediation analysis was conducted to examine whether linguistic skills mediate the relationship between the utilization of digital learning tools and quality of life (Table 5).

Table 5. Bootstrapped Mediation Analysis Results.

Effect	β	SE	95% CI	p
Indirect	0.40	0.06	[0.29, 0.51]	<0.001
Direct	0.44	0.07	[0.32, 0.60]	<0.001
Total	0.84	0.07	[0.69, 0.97]	<0.001

A mediation analysis using bootstrapping (Table 5) revealed:

- A significant indirect effect of digital learning tools utilization on quality of life through language skills ($\beta = 0.40$, $SE = 0.06$, 95% CI [0.29, 0.51], $p < 0.001$);
- A significant direct effect ($\beta = 0.44$, $SE = 0.07$, 95% CI [0.32, 0.60], $p < 0.001$);
- A significant total effect ($\beta = 0.84$, $SE = 0.07$, 95% CI [0.69, 0.97], $p < 0.001$).

These results indicate a partial mediation effect, where language skills partially mediate the relationship between digital learning tools utilization and quality of life.

18. Path Analysis Summary

The results further indicated the following:

- Digital learning tools utilization significantly predicted language skills ($\beta = 0.78$, $p < 0.001$);
- Language skills significantly predicted quality of life ($\beta = 0.52$, $p < 0.001$);
- Digital learning tools utilization also had a direct effect on quality of life ($\beta = 0.44$, $p < 0.001$).

19. Discussion

The findings of the present study indicate a high level of digital learning tool use in Arabic language curricula, as well as significant relationships with students' language skills and quality of life.

The results showed a high level of use of digital learning tools across all dimensions. Lesson preparation ranked highest, followed by lesson implementation and lesson evaluation. Regarding the outcome variables, linguistic skills also recorded a high mean score, followed by quality of life.

This suggests that Arabic language teachers actively use digital tools in their teaching, reflecting a consistently high level of utilization across the instructional dimensions.

This result can be explained by the strong emphasis on digital competencies within teacher professional standards in Saudi Arabia, particularly those related to teacher licensing, which require the use of digital tools in lesson preparation, implementation, and evaluation. It may also reflect the role of teacher preparation programs and ongoing professional development in supporting teachers' use of digital tools to enhance students' language skills and quality of life.

These findings may also be interpreted in light of the theoretical framework adopted in this study. From a constructivist perspective, the high level of digital learning tool use is consistent with the view that meaningful learning occurs through active student participation and knowledge construction in technology-enhanced learning environments. Similarly, Self-Determination Theory suggests that effective integration of digital learning tools may enhance students' autonomy, competence, and engagement, which may help explain the positive outcomes observed in language skills and quality of life. This interpretation is consistent with previous empirical studies, which have similarly shown that positive educational outcomes are achieved when digital learning tools are integrated through pedagogically meaningful teaching practices rather than relying solely on the availability of digital learning tools (Yang & Yang, 2025; Şentürk et al., 2023). This explanation is further supported by the educational context in Saudi Arabia.

The increasing reliance on technology in daily life and within the education system has made digital platforms a necessary part of teaching practice. In Saudi Arabia, the use of platforms such as Madrasati in lesson preparation, implementation, and evaluation has further reinforced teachers' use of digital learning tools, particularly to support language development and improve students' quality of life.

The results also suggest that teachers' efforts to enhance students' language skills and quality of life may partly explain the high levels of digital learning tool use. This

is consistent with prior research indicating that integrating technology into language instruction improves learning outcomes (Daud et al., 2024) and that there is a strong relationship between language proficiency and quality of life (Zeide & Odiña, 2020).

The high ranking of the lesson preparation dimension may be explained by the structured nature of lesson planning, which often requires teachers to prepare digital materials and submit evidence of planning through institutional platforms. This institutional requirement likely contributes to higher reported usage in this dimension.

These findings are consistent with previous studies (e.g., Al-Sharafat, 2023), which reported a high level of technology integration among teachers. However, they differ from other studies (e.g., Al-Malham, 2021; Snodgrass Rangel et al., 2015), which reported moderate levels of technology use. This discrepancy may be due to differences in study scope, as some studies focused on specific tools (e.g., smartphones), whereas the current study examined a broader range of digital learning tools.

Regarding demographic variables, the results show no statistically significant differences in the use of digital learning tools based on academic qualification, years of experience, or geographical region. This suggests that the use of digital tools has become a general professional requirement that does not vary across these factors.

However, significant differences were found by gender, favoring female teachers. This may reflect variation in engagement with digital learning practices and professional development activities.

Significant differences were also observed based on the number of training courses, particularly in lesson preparation, lesson implementation, and the overall score. Teachers who had completed more than ten training courses showed higher levels of digital tool use compared to those with fewer than five courses. This highlights the important role of professional development in strengthening teachers' digital competencies.

In contrast, no significant differences were found in the evaluation and quality of life dimensions with respect to training courses. This may be due to the nature of digital assessment practices, which often require more advanced technical skills and structured institutional procedures for effective implementation.

The findings show that lesson implementation had the strongest effect on quality of life. This may be because it is the stage in which students directly interact with digital tools, which has a more immediate influence on their learning experiences and well-being. In a similar way, the strong effect of the evaluation dimension on language skills suggests that digital assessment practices are closely linked to the development of students' linguistic performance. These findings are consistent with the constructivist perspective, which emphasizes that active student participation promotes better learning outcomes.

The non-significant effect of lesson preparation on both dependent variables may be explained by the fact that it represents a planning stage that does not directly translate into observable learning outcomes unless it is effectively implemented. This suggests that the use of digital tools in planning alone is not sufficient to produce meaningful outcomes. Rather, their effectiveness depends on how they are used during instruction. This highlights the greater influence of instructional practices compared to preparatory activities in actual classroom contexts.

The mediation analysis also shows that language skills act as a linking mechanism between the use of digital learning tools and quality of life. This indicates that digital tools contribute to improving quality of life indirectly, through their role in developing students' language skills, which in turn support their overall well-being.

This finding supports the proposed theoretical model and reinforces the view that educational outcomes, such as language skills, function as key pathways through which digital learning influences broader educational and well-being outcomes.

This interpretation is also consistent with Self-Determination Theory, which suggests that the development of learners' competence contributes to broader educational and well-being outcomes, offering a theoretical perspective for understanding the relationships identified in the present study.

Overall, the results indicate that the impact of digital learning tools extends beyond direct effects to include indirect pathways, highlighting the importance of focusing on language skill development as a central mechanism for improving students' quality of life.

20. Limitations

This study has several limitations that should be considered when interpreting the findings. First, all data were collected using a questionnaire administered to the same respondents at a single point in time. Consequently, the findings may be subject to common method bias. Second, the cross-sectional design limits causal inference and the examination of changes over time. Third, although the sample included teachers from several regions of Saudi Arabia, the findings may not be generalizable to other educational contexts. Future research may address these limitations by employing longitudinal designs, multiple data sources, and more diverse samples.

21. Recommendations

Based on the study findings, the following recommendations are proposed:

1. Integrate recent advances in digital learning technologies into both pre-service and in-service Arabic language teacher preparation programs to strengthen their use in lesson planning, implementation, and assessment in order to improve students' quality of life and support linguistic skill development.
2. Provide targeted training for Arabic language teachers on the effective use of digital learning tools in lesson design, delivery, and evaluation.
3. Use the study instrument (questionnaire) and its dimensions as a reference for assessing how digital learning tools are used in lesson planning, implementation, and evaluation when evaluating teachers' performance.
4. Develop Arabic language curricula by embedding digital tool-based applications that support linguistic skill development and enhance students' quality of life.
5. Update professional licensing standards for Arabic language teachers to include criteria related to improving students' quality of life and the effective integration of digital learning technologies in lesson planning, implementation, and assessment.
6. Promote equitable access to professional development related to digital learning tools, with a focus on supporting teachers with lower levels of digital engagement to help reduce gender-based differences.

22. Future Research Directions

In light of the study findings, the following directions for future research are suggested:

1. Examine the impact of integrating digital learning tools into Arabic language curricula on the development of students' linguistic and digital skills.
2. Assess the effectiveness of pre-service and in-service teacher preparation programs in supporting teachers' use of digital learning tools.
3. Explore contemporary practices of digital learning tool use among Arabic language teachers across different curricular contexts.
4. Analyze the relationship between students' linguistic skill levels and their quality of life across different stages of general education.

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