

Appraisal of Digital Maturity Levels for EFL Learners: Benefits for Pedagogical Actions

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Abstract

This study aimed to (1) assess the digital maturity levels of EFL learners in relation to institutional digital readiness within a Thai higher education context, (2) examine the relationship between learners' digital maturity and English language proficiency, and (3) identify the institutional and pedagogical factors influencing the development of digital maturity. A mixed-methods design was employed, involving 63 third-year English major students selected through simple random sampling based on Krejcie and Morgan's (1970) table. Quantitative data were collected via questionnaires, while qualitative insights were obtained from semi-structured interviews with five participants. The findings revealed that learners demonstrated a high level of digital maturity and effectively utilized digital tools to enhance language learning. A strong positive correlation was observed between digital maturity and English proficiency, indicating that digitally competent learners tended to perform better academically. Qualitative results highlighted that access to resources, teacher guidance, and institutional support were key enablers, whereas limited infrastructure constrained progress. The study contributes new evidence by contextualizing digital maturity within Thai EFL education, underscoring the need to integrate digital and traditional approaches and to strengthen institutional readiness to maximize learning outcomes.

Keywords: Digital literacy, Digital maturity, EFL learners, Language proficiency, Pedagogical practices

Introduction

The concept of digital maturity in education refers to the ability and readiness of individuals and institutions - particularly universities - to effectively navigate and utilize digital tools, resources, and systems for teaching and learning purposes. It extends beyond simple technological adoption to encompass behavioral, pedagogical, and organizational capacities that enable sustainable digital transformation. Recent studies emphasize that digital maturity among university

staff and students plays a crucial role in enhancing online learning engagement, facilitating technology acceptance, and improving satisfaction with digital education (Pérez et al., 2024). It also supports sustainable learning behaviors by integrating digital competencies into institutional strategies and learning environments, aligning with the global shift toward digital transformation in higher education.

In the present study, digital maturity is operationalized as a multidimensional construct reflecting learners' technological proficiency, readiness, access, leadership support, and learning outcomes. Specifically, it refers to EFL learners' ability to effectively use digital platforms, tools, and applications for English language learning; their preparedness and confidence in digital environments; the degree of institutional and infrastructural support they receive; the guidance and digital leadership provided by instructors and policies; and the observable academic improvements achieved through digital engagement. This multidimensional framework was adapted from Vikhman Romm (2022), Laaber et al. (2023), ensuring conceptual alignment with international standards while maintaining contextual relevance for Thai higher education.

To ensure measurable analysis, these dimensions were examined using a structured questionnaire with Likert-scale items that evaluated learners' experiences, behaviors, and attitudes toward digital technology in EFL learning. Complementary semi-structured interviews were conducted to capture qualitative insights into learners' perceptions, institutional readiness, and contextual challenges. Together, these quantitative and qualitative data provide a comprehensive understanding of digital maturity as both an individual competence and an institutional attribute. This operational clarification not only enhances the study's methodological transparency but also enables comparison with existing digital maturity frameworks in higher education (Durek et al., 2019; Westerman et al., 2014). By defining measurable indicators, the present research bridges conceptual and empirical gaps in EFL studies and offers insights into how digital transformation can meaningfully enhance language proficiency and intercultural learning among university students.

Research Objectives

1. To assess the digital maturity level of EFL learners in relation to institutional digital readiness within a Thai higher education context.
2. To examine the relationship between EFL learners' digital maturity and their English language proficiency.
3. To identify the institutional and pedagogical factors that support or hinder the development of learners' digital maturity.

Literature Review

Understanding digital maturity has become a crucial factor for organizational success in modern digital environments. Bradley (2023) emphasized that research into digital maturity focuses on both its definitions and theoretical frameworks. Westerman, Bonnet, and McAfee (2014) defined digital maturity as the extent to which organizations have transformed processes, business models, and structures through the integration of digital technologies. They further highlighted that digital maturity involves a comprehensive alignment of digital technologies across all aspects of operations to achieve strategic objectives. This view underscores that digital maturity is not limited to technological adoption but requires systemic integration. Alimzhanov (2024) argued that digital maturity is characterized by several interrelated components that collectively determine an organization's readiness and capability to leverage digital technologies effectively.

Within educational contexts, digital maturity is defined by the extent to which institutions and their stakeholders adopt digital technologies to enhance teaching, learning, and administrative processes (Galvez Fernandez et al., 2023). Rizun and Pańkowska (2022) stressed that digital maturity enables the delivery of personalized learning experiences through adaptive technologies, interactive multimedia resources, and tailored instruction that meets diverse student needs. Similarly, Amzil et al. (2023) observed that digitally mature institutions can provide customized learning pathways aligned with individual learning preferences. Rosy (2024) further noted that digital maturity significantly transforms teaching practices by introducing innovative pedagogical methods, fostering collaboration and communication, supporting data-driven instruction, and improving classroom management.

In the context of English as a Foreign Language (EFL) learning, digital maturity emerges as a fundamental factor influencing student outcomes. Gooyabadi et al. (2024) highlighted those theoretical frameworks exploring digital maturity in language education reveal both the benefits and challenges of digital technology integration. Pertiwi (2022) explained that these frameworks show how digital maturity contributes to more interactive and flexible EFL learning while also presenting difficulties such as access and equity. Empirical studies confirm these benefits; for instance, Laaber (2023) reported that the use of digital storytelling tools in EFL classrooms significantly enhanced learners' narrative abilities, vocabulary acquisition, and overall language proficiency.

Given its importance, measuring digital maturity has become essential across organizations, industries, and educational institutions to determine their readiness for digital transformation (Shofiya & Rahayu, 2023). Vavura and Matei (2024) argued that digital maturity assessment models serve critical functions in sectors such as healthcare, banking, and education, where transformation depends on both technological and human readiness. In education, measuring digital maturity

involves evaluating technological proficiency, digital citizenship, critical thinking, responsible technology use, and the willingness of staff and students to embrace transformation. Natalya et al. (2023) noted that models and frameworks play a central role in this assessment, as they capture the multiple elements of digitalization. Awdziej et al. (2023) emphasized that digital maturity integrates mechanical technologies with human-related aspects, reinforcing the need to address both dimensions simultaneously. Furthermore, Turcan, Çoşkun, and Özşahin (2024) proposed assessment tools that evaluate not only technological capacities but also educational practices, ensuring comprehensive evaluation. In EFL contexts, Pitukwong and Saraiwang (2024) suggested that adapted assessment instruments can effectively measure the role of digital maturity in enhancing the quality of language learning.

Methodology

1. Research Design

The research design used a mixed-methods approach which integrated quantitative and qualitative methods to study EFL learners' digital maturity and its connection to English language proficiency. The quantitative component used structured questionnaires to gather numerical data which was analyzed through descriptive statistics and regression analysis to identify patterns and correlations. The qualitative component used semi-structured interviews to obtain detailed non-numerical information about learners' experiences and perceptions and their challenges. The researchers used thematic analysis of interview transcripts to discover repeated patterns about digital maturity and language learning and their educational effects.

2. Population and Samples

The study involved 75 third-year English major students at Buriram Rajabhat University during the 2023–2024 academic year. Using Krejcie and Morgan's (1970) sampling table, 63 students were randomly selected for the quantitative phase, and five participated in interviews. The participants came from varied socio-economic and technological backgrounds across urban and rural areas. Most were from low- to middle-income families and relied on smartphones or university facilities for digital access. About 76% regularly used online learning platforms, while 24% had limited prior experience. Nearly two-thirds completed the BRU Digital Literacy Test, though only 18% had formal advanced digital training. This diversity influenced their digital maturity and English learning behaviors, allowing the study to reflect the varied digital experiences of EFL learners in a Thai university context.

3. Instrument(s) and Procedures

Two primary research instruments were used: a structured questionnaire and a semi-structured interview protocol. The research team created the questionnaire through adaptation of

the Vikhman & Romm (2022) framework to achieve the study objectives. The survey instrument used a 5-point Likert scale which ranged from 1 (Strongly Disagree) to 5 (Strongly Agree). Three experts evaluated the content validity of the questionnaire which led to revisions based on their feedback. The Item-Objective Congruence (IOC) index was used to assess content validity, yielding an IOC value of 1.00, indicating a high level of item relevance. The instrument reliability was tested through a pilot study with 20 fourth-year students and Cronbach's Alpha coefficient of 0.89, which is high internal consistency. Similarly, the interview protocol was reviewed by the same panel of experts and also achieved an IOC value of 1.00. Both instruments were administered digitally via Google Forms (for the questionnaire) and recorded interview sessions (for the semi-structured interviews).

4. Data Collection

Quantitative data were collected through online questionnaires, while qualitative data were obtained via semi-structured interviews conducted with five selected participants. The research objectives were explained to all participants while maintaining strict ethical standards that included voluntary participation and confidentiality. The data collection process finished after verifying that all responses were complete and accurate.

5. Data Analysis

The statistical software performed the analysis of quantitative data. The research used descriptive statistics to present demographic variables through frequency and percentage data. The interpretation of learner responses used central tendency measures (mean) and dispersion measures (standard deviation) based on Best's (1970) interpretation criteria which defined 4.50 - 5.00 as strongly agree. Qualitative data from the interviews were transcribed and subjected to content analysis, using a computer-assisted qualitative data analysis program. The research team used coding methods to examine participant responses in order to identify thematic patterns which would help them understand the relationship between digital maturity and English language proficiency.

Results

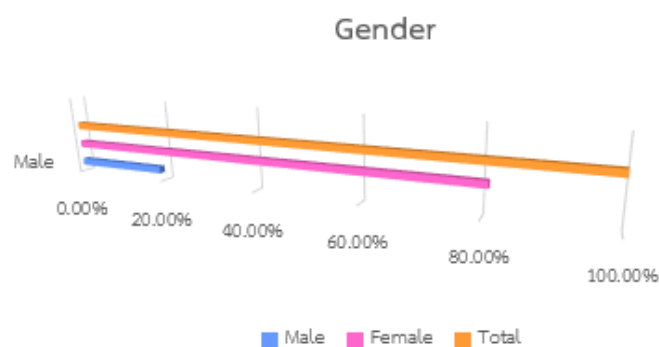


Figure 1: Gender

Figure 1 showed that most of them were female, the percentages of female learners was 81.0% out of 51 persons, male learners was 19.1% out of 12 persons, and the total was 100 percentages of the sample group at third-year level with 63 individuals.

Table 1 Understanding Digital Maturity and Success in EFL Learners

Items	Statements	Mean	SD.	Meaning
1	I believe digital maturity is important for success in learning English as a foreign language (EFL)	3.89	0.80	Agree
2	I frequently attend online English language courses or workshops that are specifically tailored to learners from my region or cultural background.	3.70	0.80	Agree
3	I often use language learning apps to prepare for English language tests.	3.75	0.88	Agree
4	I frequently participate in online learning communities or forums to improve my English skills.	3.79	0.81	Agree
5	I regularly use digital platforms to enhance my English reading skills.	3.86	0.82	Agree
Total		3.70	0.82	Agree

From the table 1, the findings showed that understanding digital maturity and success in EFL learners were at high level from the statements when considering each item, EFL learners had the most digital maturity level were “I believe digital maturity is important for success in learning English as a foreign language (EFL)” ($M = 3.89$, $SD. = 0.80$), followed by “I regularly use digital platforms to enhance my English reading skills.” ($M = 3.86$, $SD. 0.82$), and next were “I frequently participate in online learning communities or forums to improve my English skills.” ($M = 3.79$, $SD. = 0.81$), respectively.

Table 2 Relationship between Digital Maturity and Digital Proficiency of Digital Tools in English Learning

Items	Statements	Mean	SD.	Meaning
6	I believe that my digital abilities improve my capacity to learn about education.	3.92	0.81	Agree
7	I believe that my digital proficiency directly impacts my overall English language proficiency.	3.76	0.73	Agree
8	I find digital tools effective in improving my listening comprehension in English.	3.76	0.78	Agree
9	I frequently use digital tools to improve my English pronunciation.	3.78	0.75	Agree
10	I am able to troubleshoot problems while using digital tools for learning.	3.62	0.85	Agree
Total		3.77	0.78	Agree

From the table 2, the findings showed that relationship between digital maturity and digital proficiency of digital tools in English learning were at high level from the statements when considering each item, EFL learners had the most relationship of digital maturity were “I believe that my digital abilities improve my capacity to learn about education.” ($M = 3.92$, $SD. = 0.81$), followed by “I frequently use digital tools to improve my English pronunciation.” ($M = 3.78$, $S.D. = 0.75$), and next were “I believe that my digital proficiency directly impacts my overall English language proficiency.” ($M = 3.76$, $SD. = 0.73$), respectively.

Table 3 Cross-Cultural Collaboration and Technical Challenges in Digital Learning

Items	Statements	Mean	SD.	Meaning
11	I frequently collaborate with peers from different cultural backgrounds in digital environments to improve my English.	3.60	0.91	Agree
12	I use the digital tools to learn English reflect my cultural identity and values.	3.70	0.82	Agree
13	I often face challenges in accessing digital resources due to language barriers.	3.70	0.89	Agree

Items	Statements	Mean	SD.	Meaning
14	I often encounter technical difficulties that hinder me from using digital tools for English learning.	3.73	0.88	Agree
15	I use digital tools of language learning for my cultural background influences.	3.76	0.84	Agree
Total		3.70	0.87	Agree

From the table 3, the findings showed that relationship between digital maturity and digital proficiency of digital tools in English learning were at high level from the statements when considering each item, EFL learners had the most cross-cultural of digital learning were “I use digital tools of language learning for my cultural background influences.” ($M = 3.76$, $SD. = 0.84$), followed by “I often encounter technical difficulties that hinder me from using digital tools for English learning.” ($M = 3.73$, $SD. 0.88$), and next were “I use the digital tools to learn English reflect my cultural identity and values.” ($M = 3.70$, $SD. = 0.82$), respectively.

Table 4 Effectiveness of Digital Maturity in English Learning Access of Digital Learning Resources

Items	Statements	Mean	SD.	Meaning
16	Digital tools are effective in providing feedback on my language skills compared to in-person feedback from lecturers.	3.73	0.79	Agree
17	Digital resources for English learning are accessible in my region.	3.65	0.86	Agree
18	The digital platform I use to learn English is designed to accommodate my learning style and needs.	3.86	0.82	Agree
19	The digital literacy level of teachers affects my use of digital tools for learning English.	3.75	0.74	Agree
20	Digital tools help me understand complex English grammar concepts better than traditional methods.	3.86	0.78	Agree
Total		3.77	0.80	Agree

From the table 4, the findings showed that effectiveness of digital maturity in English learning access of digital learning resources were at high level from the statements when considering each item, EFL learners had the most effectiveness of digital maturity were “Digital tools help me understand complex English grammar concepts better than traditional methods.” ($M = 3.86$, $SD. = 0.78$), followed by “The digital platform I use to learn English is designed to accommodate my learning style and needs.” ($M = 3.86$, $SD. 0.82$), and next were “The digital literacy level of teachers affects my use of digital tools for learning English.” ($M = 3.75$, $SD. = 0.74$), respectively.

Table 5 The Correlation between each variable

VAR	A1	A2	A3	A4	A5	B6	B7	B8	B9	B10	C11	C12	C13	C14	C15	D16	D17	D18	D19	D20
A1	1	.576**	.526**	.535**	.513**	.506**	.415**	.447**	.492**	.455**	.601**	.464**	.604**	.388**	.465**	.565**	.546**	.489**	.547**	.591**
A2		1	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	0.002	<.001	<.001	<.001	<.001	<.001	<.001
A3			1	.694**	.649**	.613**	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	0.002	<.001	<.001	<.001	<.001	<.001
A4				1	.613**	.518**	.624**	.615**	.563**	.636**	.569**	.615**	.549**	.577**	.628**	.521**	.459**	.549**	.614**	.465**
A5					1	.371**	.719**	.604**	.577**	.545**	.573**	.441**	.634**	.391**	.326**	.564**	.497**	.469**	.444**	.497**
B6						1	.565**	.482**	.555**	.565**	.352**	.452**	.459**	.376**	.496**	.545**	.675**	.614**	.451**	.595**
B7							1	.662**	.634**	.550**	.485**	.471**	.603**	.471**	.402**	.613**	.528**	.532**	.510**	.503**
B8								1	.627**	.471**	.436**	.445**	.477**	.492**	.432**	.526**	.499**	.553**	.426**	.529**
B9									1	.497**	.579**	.548**	.501**	.395**	.357**	.634**	.525**	.623**	.565**	.524**
B10										1	.532**	.552**	.718**	.655**	.509**	.484**	.450**	.614**	.638**	.379**
C11											1	.533**	.687**	.588**	.489**	.502**	.453**	.509**	.660**	.443**
C12												1	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
C13													1	.602**	.584**	.549**	.443**	.513**	.619**	.514**
C14														1	.694**	.508**	<.001	<.001	<.001	<.001
C15															1	.427**	.529**	.569**	.634**	.364**
D16																	1	.489**	.682**	.585**
D17																		1	<.001	<.001
D18																			1	<.001
D19																				1
D20																				

** Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation coefficients in Table 5 showed statistically significant relationships ($p < .01$) between different indicators of digital maturity and English language proficiency. The strongest correlations were observed between digital engagement and improved vocabulary, grammar, and overall proficiency. These findings validated the quantitative assumption that digital maturity contributed positively to language acquisition.

Semi-structured Interview Questions for Appraisal of Digital Maturity Levels for EFL Learners: Benefits for Pedagogical Actions

Section A: Understanding Digital Maturity

Q1. Can you describe your experience with using digital tools in your English language learning? How comfortable are you with integrating these tools into your daily learning routine?

Summarized: Learners reported that digital tools significantly enhanced their English learning experience, providing instant feedback and making learning enjoyable. They appreciated the convenience of tools like Duolingo and Google for easy access to information and practice. The tools-maintained student motivation and engagement but some students stressed that discipline and proper planning were essential to achieve good results. The participants viewed digital tools as essential components which added value to their learning process.

Section B: Relationship Between Digital Maturity and Language Proficiency

Q2. In what ways do you think your ability to use digital tools has influenced your English language proficiency? Can you provide specific examples where digital tools either helped or hindered your learning process?

Summarized: The learners confirmed that digital tools enhanced their English language skills particularly through vocabulary development and grammar correction using Duolingo and ChatGPT. The tools proved useful for students to practice their speaking and listening and reading abilities. Some students observed that excessive use of digital tools might decrease independent thinking abilities and create distractions which negatively affect learning outcomes. The learners appreciated the tools but stressed that students need to use them in moderation to preserve their ability to self-correct.

Section C: Contextual Influence on Digital Maturity

Q3. How do you feel the specific educational environment you are in (e.g., your school, access to technology, teacher support) impacts your ability to develop digital skills? What challenges or advantages have you encountered?

Summarized: The educational environment served as a key factor for students to develop their digital skills according to their feedback. The development of digital skills depended on supportive teachers and technology access yet some students encountered obstacles because of unequal device and internet connection availability. The digital tools received assistance from tech-savvy teachers who helped learners use them effectively yet one student pointed out that these tools needed data and continuous analysis. Overall, the environment was beneficial, but gaps in access posed difficulties for some students.

Discussion

The study found that EFL learners with higher digital maturity showed stronger English proficiency in vocabulary, grammar, and communication. This supports Laaber et al. (2023), who noted that digital maturity enhances adaptability and engagement, and Rizun and Pańkowska (2022), who emphasized that technological competence promotes personalized learning. Learners reported that using Duolingo, Google Classroom, and ChatGPT improved confidence and motivation, aligning with Amzil et al. (2023), who highlighted the benefits of mobile-supported learning. However, some warned that excessive reliance on technology may reduce independent thinking, echoing Broadbent and Poon (2015) and Kirkwood and Price (2014) on self-regulation challenges in digital environments. Institutional factors also played a crucial role. Westerman et al. (2014) viewed digital maturity as an organizational transformation driven by leadership and technology integration, while Galvez Fernandez et al. (2023) stressed that institutions with strong infrastructure and trained teachers enhance learning outcomes. This study supports Awdziej et al. (2023), confirming that teacher development and equitable access improve digital readiness and satisfaction. By combining learner and institutional perspectives, the research bridges a gap in prior studies that often separated these dimensions. It demonstrates their interdependence - digital maturity thrives when institutions provide supportive ecosystems that promote teacher capability and learner adaptability. These findings extend global frameworks (Galvez Fernandez et al., 2023; Westerman et al., 2014) into the Thai EFL context, highlighting that sustainable English proficiency improvement depends on balanced institutional and learner readiness.

Conclusion

The research results demonstrate that digital maturity serves as a crucial factor for improving English language abilities of EFL students. Students who demonstrated higher levels of digital competence-characterized by the effective use of educational technologies, digital tools, and online platforms - exhibited stronger performance in vocabulary acquisition, grammar understanding, and language application. Through digital technologies students gained interactive personalized learning

experiences which they could complete at their own pace thus supporting the positive relationship between digital engagement and language development. The research shows a major problem because learners who depend too much on digital tools may lose their ability to think critically and self-regulate which negatively affects their deep cognitive engagement and long-term language retention. The research showed how contextual elements together with socioeconomic factors affected student learning through their impact on accessibility and teacher support. The majority of participants received benefits from their supportive learning environment yet digital resource access inequalities continue to block some students from learning effectively thus requiring better educational infrastructure for all. A balanced pedagogical strategy - integrating both digital and traditional methods - is essential to optimize learning outcomes, foster critical thinking, and promote sustainable skill development. Educational institutions need to offer students digital tools together with training programs to teach them how to use tools correctly and maintain responsible tool usage.

Recommendations

The study proposed that educational institutions include digital maturity frameworks into their curricula, focusing on technology access and teacher training to improve English competence. It emphasized the need for additional research into the long-term effects of digital maturity on language learning, as well as the specific effects of digital tools on certain language abilities.

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References

- Alimzhanov, A. K. (2024). *On the issue of defining the category of "digital maturity" in the era of digital transformation of the energy sector and its impact on financial performance*. <https://doi.org/10.58224/2658-5286-2024-7-3-324-329>
- Awdziej, M., Jaciow, M., Lipowski, M., Tkaczyk, J., & Wolny, R. (2023). Students' digital maturity and its implications for sustainable behavior. *Sustainability*, 15(9), article 7269. <https://doi.org/10.3390/su15097269>
- Amzil, I., Aammou, S., & Zakaria, T. (2023). *Enhance Students' Learning by Providing Personalized Study Pathways*. <https://doi.org/10.18316/rcd.v15i39.11130>

- Best, J. W. (1970). *Research in Education* (2nd ed.). Prentice Hall.
- Bradley, J. S. (2023). *Digital Maturity Models IGI Global eBooks*. <https://doi.org/10.4018/978-1-6684-4102-2.ch005>
- Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic performance in online courses. *The Internet and Higher Education*, 27, 1-12.
<https://doi.org/10.1016/j.iheduc.2015.04.007>
- Durek, V., Begicevic Redep, N., & Kadoić, N. (2019). Methodology for Developing Digital Maturity Model of Higher Education Institutions. *Journal of Computers*, 14(4), 247–256.
<https://doi.org/10.17706/JCP.14.4.247-256>
- Galvez Fernandez, R., Aguilar, M. A., Zea, S., & Garcia-Peñalvo, F. J. (2023). Measuring digital maturity in universities: A multidimensional framework for higher education transformation. *Computers & Education*, 200, 104788. <https://doi.org/10.1016/j.compedu.2023.104788>
- Gooyabadi, A. A., GorjianKhanzad, Z., & Lee, N. (2024). *Digital maturity models. In Nonprofit digital transformation demystified*. Springer. <https://doi.org/10.1007/978-3-031-47182-7>
- Kirkwood, A., & Price, L. (2014). Technology-enhanced learning and teaching: A review of the research literature. *Learning, Media and Technology*, 39(1), 6-36.
<https://doi.org/10.1080/17439884.2013.770404>
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607–610.
- Laaber, F., Florack, A., Koch, T., & Hubert, M. (2023). Digital maturity: Development and validation of the Digital Maturity Inventory (DIMI). *Computers in Human Behavior*, 143, 107709.
<https://doi.org/10.1016/j.chb.2023.107709>
- Natalya, V., Tarasova, И. П., Kazakov, A., & Chigrina, S. G. (2023). Model for assessing the digital maturity of general education: Methodological foundations and development technologies. *Perspektivy nauki i obrazovaniâ*, 64(4), 10-27.
- Pérez, V. D. F., Gómez, T. F., Sánchez, F. J. M., & Pérez, V. D. F., Gómez, T. F., Sánchez, F. J. M., & Pérez, M. E. F. (2024). Modelo de Madurez Digital para mejora continua. *South Florida Journal of Development*, 5(3), e3721-e3721. <https://doi.org/10.46932/sfjdv5n3-012>
- Pertiwi, I. (2022). Original research article digital literacy in EFL learning: University students' perspectives. *Journal of English Educators Society*, 7(2). 197-204.
<https://doi.org/10.21070/jees.v7i2.1670>

- Pitukwong, K., & Saraiwang, S. (2024). Exploring the effectiveness of digital writing tools on Thai EFL students' writing. *Contemporary Educational Technology*, 16(3), ep519.
<https://doi.org/10.30935/cedtech/14808>
- Rizun, M., & Pańkowska, M. (2022). Maturity Model for Assessment of Personalization of Higher Education. *International Conference on Knowledge Discovery and Information Retrieval*, 43–53. <https://doi.org/10.5220/0011537900003335>
- Rosy C.G, B. (2024). Innovations in Teaching Practices. <https://doi.org/10.47392/irjaem.2024.0198>
- Shofiya, A., & Rahayu, N. S. (2023). Exploring efl student's literacy practices in the era of online learning. *Lingua Scientia: Journal Bahasa*, 15(2), 361–386.
<https://doi.org/10.21274/lj.2023.15.2.361-386>
- Turcan, G., Coşkun, E., & Özşahin, M. (2024). *A Conceptual Framework Proposal for Digital Maturity Assessment and Sustainability for Municipalities. In Convergence of Digitalization, Innovation, and Sustainable Development in Business* (pp. 71-96). IGI Global.
- Vavura, N.-M., & Matei, G. (2024). Digital maturity models: A bibliometric exploration. In *Proceedings of the International Conference on Business Excellence*, 18(1), 1115–1131.
<https://doi.org/10.2478/picbe-2024-0096>
- Vikhman, V., & Romm, M. V. (2022). Evaluating digital maturity of education. *Science for Education Today*, 12(5), 40–56. <https://doi.org/10.15293/2658-6762.2205.03>
- Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading digital: Turning technology into business transformation*. Harvard Business Review Press.