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The Predictive Role of Digital Readiness in Academic Self-Efficacy among Students at the Institute of Physical Education and Sport Sciences

Benharrat Bilal[1]*, Tablaoui Fateh[2]

[1] University of Algiers 3 (algeria), benharrat.bilal@univ-alger3.dz

[2] University of Tissemsilt (algeria), f.tablaoui@univ-tissemsilt.dz

Abstract:

This study aimed to investigate the predictive role of digital readiness in academic self-efficacy among students of the Institute of Physical Education and Sports at the University of Algiers 3. The study adopted a predictive correlational descriptive design and was conducted on a sample of 134 students. The Digital Readiness for Academic Engagement Scale (DRAE) and the College Academic Self-Efficacy Scale (CASES) were employed. The findings revealed high levels of both digital readiness and academic self-efficacy among the participants. A significant positive correlation was found between the two variables ($r = 0.67$, $p < .001$). Multiple regression analysis showed that the dimensions of digital readiness explained 55.1% of the variance in academic self-efficacy. The findings highlight the importance of enhancing students' digital competencies as a means of strengthening their academic self-efficacy and supporting academic success in higher education.

Keywords: Digital Readiness, Academic Self-Efficacy, University Students, Physical Education and Sports

* *Corresponding author benharrat.bilal@univ-alger3.dz*

1. Problem Statement

Over the past two decades, higher education has undergone a profound transformation driven by the rapid advancement of information and communication technologies (ICT). Traditional modes of instruction are no longer sufficient to meet the demands of contemporary academic environments, particularly in applied disciplines such as Physical Education and Sport Sciences, where digital technologies have become increasingly integral to learning, movement analysis, training management, and academic assessment. Consequently, students are now expected to possess what is commonly referred to as digital readiness, a multidimensional construct encompassing the knowledge, skills, and attitudes required to use digital technologies effectively and efficiently within educational settings (UNESCO, 2018). In this context, contemporary research suggests that digital readiness extends far beyond the acquisition of technical skills; rather, it has emerged as a fundamental determinant of successful learning experiences in higher education. It is closely associated with students' ability to engage with instructional content, accomplish academic tasks, and develop self-directed learning competencies (Ng, 2012). Conversely, inadequate digital readiness may hinder academic adjustment and increase learning-related psychological stress, particularly in educational environments that rely extensively on digital platforms and technology-enhanced instruction (Ilomäki et al., 2016).

From a psychological perspective, academic self-efficacy represents one of the most influential determinants of university students' academic success. According to Bandura's Social Cognitive Theory, self-efficacy refers to individuals' beliefs in their capabilities to organize and execute the courses of action required to attain designated levels of performance (Bandura, 1997). A substantial body of research has demonstrated that students with high levels of academic self-efficacy exhibit greater resilience when facing academic challenges, superior time-management abilities, stronger perseverance, and more effective learning strategies than their counterparts with lower levels of self-efficacy. Within the field of Physical Education and Sport Sciences, academic self-efficacy assumes particular importance because students are required to integrate theoretical knowledge with practical and performance-based competencies. Furthermore, the growing reliance on digital technologies for performance analysis, training program design, and physical assessment underscores the need for students to develop adequate digital competencies. Accordingly, a higher level of digital readiness may strengthen students' confidence in their academic abilities and contribute positively to the enhancement of their academic self-efficacy.

Recent empirical evidence supports the existence of a positive relationship between digital competencies and academic self-efficacy. For instance, Siddiq and Scherer (2019) reported that students with more advanced digital skills tend to exhibit higher levels of confidence in their academic capabilities. Likewise, the international study conducted by Fraillon et al. (2020) concluded that the effective use of digital technologies promotes learner autonomy and reinforces students' perceptions of academic self-efficacy. Despite this growing body of international literature, a significant research gap remains within the Arab context, particularly in the field of Physical Education and Sport Sciences. Existing studies have predominantly focused on physical performance and motor skills, whereas psycho-digital constructs such as digital readiness and academic self-efficacy have received comparatively limited scholarly attention, despite their potential contribution to explaining academic achievement and student success in increasingly digitalized educational environments. Moreover, students enrolled in institutes of Physical Education and Sport Sciences constitute a distinctive population because they are expected to balance motor competencies, scientific knowledge, and contemporary digital skills throughout their academic training. This unique educational context raises important questions regarding the extent of their digital readiness and the manner in which such readiness may influence their perceptions of academic self-efficacy during their university studies.

Accordingly, the present study seeks to address this gap by examining the predictive relationship between digital readiness and academic self-efficacy among students of the Institute of Physical Education and Sport Sciences. In doing so, it aims to provide empirical evidence that may contribute to the development of university curricula and support the effective integration of digital technologies into sport and physical education programs.

2. Research Question

2.1. Main Research Question

To what extent does digital readiness predict the level of academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3?

2.2. Specific Research Questions

- ✓ What are the levels of digital readiness and academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3?

- ✓ Is there a statistically significant correlation between digital readiness and academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3?
- ✓ To what extent do the dimensions of digital readiness contribute to the prediction of academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3?

3. Research Hypotheses

3.1. Main Hypothesis

Digital readiness makes a statistically significant contribution to predicting academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3.

3.2. Specific Hypotheses

- ✓ Students at the Institute of Physical Education and Sport Sciences, University of Algiers 3 demonstrate high levels of both digital readiness and academic self-efficacy.
- ✓ There is a positive and statistically significant correlation between digital readiness and academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3.
- ✓ The dimensions of digital readiness significantly predict academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3.

4. Research Objectives

The present study aims to examine the nature of the relationship between digital readiness and academic self-efficacy in order to determine whether students' possession of advanced digital competencies is associated with higher levels of confidence in their academic abilities. Furthermore, the study seeks to investigate the predictive capacity of digital readiness in explaining variations in academic self-efficacy, thereby providing a deeper understanding of the role that digital competencies play in shaping students' perceptions of academic capability and success. Finally, the study aims to examine differences in both digital readiness and academic self-efficacy according to gender, academic level, and digital experience, with the objective of identifying the extent to which these demographic and educational variables influence the two constructs under investigation.

5. Significance of the Study

The significance of this study lies in its examination of a contemporary issue situated at the intersection of digital transformation in higher education and the cognitive-psychological factors that influence university students' academic experiences. As such, it contributes to the growing body of research exploring the impact of digital technologies on academic behavior and learning outcomes. From a theoretical perspective, the study enriches the educational literature on digital readiness and academic self-efficacy, particularly within the Arab context, where empirical research examining the interplay between digital competencies and psychological constructs in higher education remains relatively limited. By addressing this gap, the study provides a more comprehensive understanding of how digital readiness may contribute to students' academic development in increasingly technology-mediated learning environments.

6. Definition of Concepts and Terminology

6.1. Digital Readiness : Digital readiness is a contemporary concept that has emerged in response to the accelerating digital transformation of education. The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines digital readiness as the set of knowledge, skills, and attitudes that enable individuals to use digital technologies effectively and efficiently across educational and professional contexts (UNESCO, 2018). Similarly, Ng (2012) conceptualizes digital readiness as learners' capacity to use digital technologies critically, creatively, and ethically in ways that facilitate the achievement of learning objectives. Furthermore, Ilomäki et al. (2016) argue that digital readiness extends beyond technical proficiency to encompass cognitive and social dimensions that enable individuals to interact effectively within digital environments.

6.2. Academic Self-Efficacy : Academic self-efficacy is a fundamental construct in educational psychology. According to Bandura (1997), it refers to individuals' beliefs in their capability to organize and execute the actions required to attain desired academic performance. Zimmerman (2000) further defines academic self-efficacy as students' judgments of their ability to successfully accomplish a wide range of academic tasks. Likewise, Schunk and Pajares (2002) describe academic self-efficacy as learners' self-evaluations of their capacity to learn effectively and achieve academic success.

Within the context of the present study, students enrolled at the Institute of Physical Education and Sport Sciences constitute a distinct population of university students whose academic preparation integrates theoretical instruction in sport sciences and coaching with practical field-based training and physical activities. Consequently, they require well-developed digital competencies to

support their learning processes and to enhance both their academic development and future professional practice.

7. Review of Previous Studies

7.1. Study by Scherer and Siddiq (2019) : In their study entitled "The Digital Skills Gap: Are Students Adequately Prepared?", Scherer and Siddiq (2019) investigated the relationship between students' digital skills and major indicators of academic success, with particular emphasis on academic self-efficacy and academic achievement. Employing a descriptive correlational approach through an extensive synthesis of empirical studies conducted across diverse educational contexts, the authors found a strong positive association between students' digital competencies and their academic self-efficacy. Specifically, students possessing higher levels of digital competence reported greater confidence in their academic capabilities. The study further emphasized that digital competence has become a critical determinant of learning quality and academic success in higher education institutions.

7.2. Study by Fraillon et al. (2020) : Fraillon et al. (2020), in their international report entitled "Preparing for Life in a Digital World: IEA International Computer and Information Literacy Study 2018 International Report", sought to evaluate students' levels of digital competence and their ability to employ information and communication technologies in addressing both academic and real-world challenges. Using a comparative descriptive design and drawing upon large representative samples from numerous countries, the study demonstrated that students with higher levels of digital competence exhibited greater learner autonomy, more effective information management skills, and stronger confidence in their own abilities. The findings further highlighted digital competence as a pivotal factor in fostering self-efficacy and promoting academic engagement within technology-enhanced learning environments.

7.3. Study by Hatlevik et al. (2018) : Hatlevik et al. (2018), in their study entitled "Students' ICT Self-Efficacy and Digital Competence as Predictors of Academic Achievement", examined the relationships among digital competence, academic self-efficacy, and academic achievement among secondary school students. Adopting a descriptive correlational methodology, the researchers administered standardized instruments to assess the study variables. The results revealed a significant positive effect of digital competence on academic self-efficacy, indicating that students with higher levels of digital competence displayed greater confidence in their abilities and were better equipped to cope

with academic demands. The study concluded that digital competence represents a key predictor of academic success in contemporary educational contexts.

7.4. Study by Al-Zoubi et al. (2021) : Al-Zoubi et al. (2021), in their study entitled "Digital Skills and Their Relationship with Academic Achievement among University Students", examined the association between digital skills and academic achievement among university students within the Arab higher education context. Using a descriptive correlational design, the researchers collected data through a questionnaire administered to a sample of university students. The findings revealed a statistically significant positive relationship between digital skills and academic achievement. Furthermore, students with more advanced digital skills demonstrated higher levels of academic self-efficacy and greater confidence in their ability to succeed academically. Based on these findings, the authors recommended integrating digital skills development programs into the curricula and educational strategies of Arab universities.

8. Methodology

8.1. Research Design

The present study adopted a descriptive correlational predictive research design, as it is considered the most appropriate approach for addressing the research problem and achieving the study objectives. This design aims to describe phenomena as they naturally occur, examine the relationships among variables, and determine the predictive capacity of an independent variable in explaining the variance observed in a dependent variable (Creswell, 2018, p. 376). It was selected because the present study seeks not only to investigate the relationship between digital readiness and academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, but also to examine the extent to which digital readiness and its underlying dimensions predict academic self-efficacy. This is fully consistent with the characteristics of predictive correlational research, which relies primarily on correlation and regression analyses to explain relationships among variables (Fraenkel, Wallen, & Hyun, 2019, p. 332).

Furthermore, the descriptive correlational design provides an accurate description of participants' levels of digital readiness and academic self-efficacy while enabling the analysis of the direction and strength of the relationship between these constructs without manipulating or experimentally controlling the study variables. Consequently, it is particularly well suited to educational and psychological research of this nature (Ary, Jacobs, Sorensen, & Walker, 2018, p. 373).

8.2. Population of the Study

The study population refers to the entire group of individuals possessing the characteristics relevant to the research problem and to whom the findings may be generalized (Cohen, Manion, & Morrison, 2018, p. 218). Accordingly, the target population comprised all students enrolled at the Institute of Physical Education and Sport Sciences, University of Algiers 3, during the 2025–2026 academic year, regardless of their academic level or specialization. This population was selected because it represents the primary target group of the study and is directly concerned with the constructs of digital readiness and academic self-efficacy within contemporary higher education.

8.3. Sample of the Study

A simple random sampling technique was employed, as it is among the most widely used sampling procedures in educational and psychological research. This method provides every member of the target population with an equal probability of selection, thereby enhancing the representativeness of the sample and increasing the generalizability of the findings (Kerlinger & Lee, 2000, p. 171). The final study sample consisted of 134 undergraduate students enrolled at the Institute of Physical Education and Sport Sciences, University of Algiers 3.

8.4. Delimitations of the Study

Human Delimitation: The study was limited to students enrolled at the Institute of Physical Education and Sport Sciences, University of Algiers 3.

Geographical Delimitation: The research was conducted at the Institute of Physical Education and Sport Sciences, University of Algiers 3.

Temporal Delimitation: Data collection was carried out during the 2025–2026 academic year.

9. Research Instruments

9.1. College Academic Self-Efficacy Scale (CASES)

Academic self-efficacy is one of the central constructs of Bandura's Social Cognitive Theory, referring to individuals' beliefs regarding their capability to organize and execute the actions required to achieve designated levels of academic performance. According to Bandura, these efficacy beliefs directly influence the amount of effort individuals invest, their persistence when

encountering difficulties, and their ability to cope successfully with academic challenges.

Grounded in this theoretical framework, Steven V. Owen and Robin D. Froman developed the College Academic Self-Efficacy Scale (CASES) in 1988 to assess university students' perceptions of their competence in performing a broad range of academic tasks associated with university life. Owing to its strong psychometric properties and its demonstrated ability to predict academic performance and student engagement, the CASES has become one of the most widely used instruments in higher education research.

The original version of the scale was not designed around distinct subscales; rather, it was developed to measure the broader construct of academic self-efficacy. Nevertheless, its items collectively assess several essential domains of academic functioning, including:

- ✓ Time management and study organization.
- ✓ Preparation for examinations and academic assessments.
- ✓ Participation in lectures and classroom discussions.
- ✓ Completion of assignments and academic coursework.
- ✓ Preparation of research papers and scientific reports.
- ✓ Comprehension and mastery of academic content.
- ✓ Interaction with instructors and peers in educational settings.

The original instrument consists of 33 items, each describing a common academic task or situation encountered by university students. Respondents are asked to indicate the degree of confidence they have in their ability to successfully perform each task.

Scoring Procedure : In the original version of the CASES, Owen and Froman employed an 11-point response scale ranging from 0 ("No Confidence at All") to 10 ("Complete Confidence"). Participants' responses are summed across all 33 items to obtain an overall academic self-efficacy score.

Minimum possible score: $0 \times 33 = 0$

Maximum possible score: $10 \times 33 = 330$

Higher total scores indicate higher levels of academic self-efficacy.

Table 1. Interpretation of Score Levels

Academic Self-Efficacy Level	Total Score
Low	0–110
Moderate	111–220

High	221–330

9.2. Digital Readiness for Academic Engagement Scale (DRAE)

Over the past decade, higher education institutions have undergone an unprecedented process of digital transformation, requiring students to acquire a broad range of digital knowledge, skills, and competencies that enable them to engage effectively in technology-enhanced learning environments. Within this context, the concept of digital readiness has emerged as an individual's preparedness and capability to utilize digital technologies effectively in pursuit of educational and academic goals.

Building upon this conceptual framework, Ah Jeong Hong and Hye Jeong Kim developed the Digital Readiness for Academic Engagement Scale (DRAE) in 2018 to assess university students' digital competencies required for successful participation in contemporary learning environments. The instrument is founded on the premise that digital readiness extends beyond technical proficiency to encompass the ability to manage digital information, communicate through digital platforms, create digital content, and engage in self-directed learning supported by technology. Consequently, the DRAE is regarded as one of the most specialized instruments for assessing academic digital readiness among higher education students.

The scale comprises 17 items distributed across five core dimensions of academic digital readiness:

- ✓ Digital Technical Competence.
- ✓ Digital Information Management.
- ✓ Digital Content Creation.
- ✓ Digital Communication and Collaboration.
- ✓ Responsible Use of Digital Technologies.

Scoring Procedure : The DRAE employs a five-point Likert scale, with responses ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree"). Participants' responses are summed across all items to obtain an overall digital readiness score.

Minimum possible score: 17

Maximum possible score: 85

Higher scores indicate higher levels of digital readiness.

Table 2. Interpretation of Score Levels

Digital Readiness Level	Total Score
Low	17–39
Moderate	40–62
High	63–85

10. Psychometric Properties of the Research Instruments

Prior to the main data collection, the psychometric properties of the two research instruments—the Digital Readiness for Academic Engagement Scale (DRAE) and the College Academic Self-Efficacy Scale (CASES)—were evaluated using a pilot sample of 76 students enrolled at the Institute of Physical Education and Sport Sciences, University of Algiers 3. To ensure the suitability of both instruments for the main study, two procedures were employed to establish validity and two additional procedures were used to assess reliability.

10.1. Validity

10.1.1. Internal Consistency Validity

Internal consistency validity refers to the degree to which individual items are correlated with the total score of the scale to which they belong. It is one of the most widely employed methods for evaluating construct validity in educational and psychological research. In the present study, Pearson's product-moment correlation coefficients were calculated between each item and the corresponding total scale score.

Table 3. Internal Consistency Validity Coefficients for the Research Instruments

Instrument	Number of Items	Lowest Item–Total Correlation	Highest Item–Total Correlation	Significance Level
Digital Readiness for Academic Engagement Scale (DRAE)	17	0.47	0.82	$p < .01$
College Academic Self-Efficacy Scale (CASES)	33	0.44	0.86	$p < .01$

As shown in Table 1, the item–total correlation coefficients ranged from 0.44 to 0.86, with all coefficients being positive and statistically significant at the 0.01 level. These findings indicate a high degree of internal consistency, demonstrating that the individual items are well aligned with the constructs they are intended to

measure. Accordingly, both instruments exhibit satisfactory internal consistency validity.

10.1.2. Discriminant Validity (Extreme Groups Method)

Discriminant validity was examined using the extreme groups method, which evaluates an instrument's ability to distinguish between individuals with high and low levels of the measured construct. This procedure involved comparing the mean scores of the upper quartile and lower quartile using an independent-samples t-test.

Table 4. Discriminant Validity Results for the Research Instruments

Instrument	Upper Mean	Lower Mean	t-Value	Sig.Level
Digital Readiness for Academic Engagement Scale (DRAE)	73.14	48.26	9.83	$p < .001$
College Academic Self-Efficacy Scale (CASES)	282.17	176.35	11.27	$p < .001$

The results presented in Table 2 reveal statistically significant differences between the upper and lower quartile groups on both instruments. The calculated t-values were 9.83 for the DRAE and 11.27 for the CASES, both of which were statistically significant at the 0.001 level. These findings confirm that the two instruments effectively discriminate between participants with high and low levels of the measured constructs, thereby providing strong evidence of their discriminant validity.

10.2. Reliability

10.2.1. Cronbach's Alpha Coefficient

Cronbach's alpha is one of the most widely used indicators of reliability, as it assesses the internal consistency of a measurement instrument by evaluating the extent to which its items consistently measure the same underlying construct. High alpha coefficients indicate that the items are homogeneous and provide reliable estimates of the construct of interest.

Table 5. Cronbach's Alpha Reliability Coefficients for the Research Instruments

Instrument	Number of	Cronbach's

	Items	Alpha
Digital Readiness for Academic Engagement Scale (DRAE)	17	0.89
College Academic Self-Efficacy Scale (CASES)	33	0.93

As presented in Table 3, Cronbach's alpha coefficients were 0.89 for the Digital Readiness for Academic Engagement Scale (DRAE) and 0.93 for the College Academic Self-Efficacy Scale (CASES). Both values substantially exceed the minimum acceptable threshold of 0.70, indicating excellent internal consistency and a high degree of homogeneity among the items of each instrument. These findings demonstrate that both scales provide highly reliable and consistent measurements of their respective constructs.

10.2.2. Split-Half Reliability (Spearman–Brown Coefficient)

To further examine the reliability of the instruments, the split-half method was employed. The items of each scale were divided into two equivalent halves (odd-numbered and even-numbered items). The correlation between the two halves was first calculated and subsequently corrected using the Spearman–Brown prophecy formula to estimate the reliability of the full instrument.

Table 6. Split-Half Reliability Coefficients for the Research Instruments

Instrument	Correlation Between the Two Halves	Spearman–Brown Coefficient
Digital Readiness for Academic Engagement Scale (DRAE)	0.81	0.89
College Academic Self-Efficacy Scale (CASES)	0.85	0.92

As shown in Table 4, the corrected split-half reliability coefficients, calculated using the Spearman–Brown formula, were 0.89 for the Digital Readiness for Academic Engagement Scale (DRAE) and 0.92 for the College Academic Self-Efficacy Scale (CASES). These high coefficients indicate excellent score stability and consistency across the two halves of each instrument, providing further evidence of the strong reliability of both scales and confirming their suitability for use in the present study.

11. Presentation, Analysis, and Discussion of the Study Findings

11.1. Presentation, Analysis, and Discussion of the First Hypothesis

The first hypothesis stated that: "Students at the Institute of Physical Education and Sport Sciences, University of Algiers 3, demonstrate high levels of digital readiness and academic self-efficacy."

To test this hypothesis, descriptive statistics, including means and standard deviations, were computed for the two study variables, as presented in Table 5.

Table 7. Means and Standard Deviations of the Study Variables (N = 134)

Variable	Mean	Standard Deviation	Level
Digital Readiness	68.42	8.71	High
Academic Self-Efficacy	247.35	31.64	High

11.1.1. Analysis and Discussion of the Findings

The descriptive statistics presented in Table 5 indicate that the participants demonstrated a high level of digital readiness, with a mean score of 68.42 out of a maximum possible score of 85. Likewise, the participants exhibited a high level of academic self-efficacy, achieving a mean score of 247.35 out of a possible 330. These findings suggest that students at the Institute of Physical Education and Sport Sciences possess well-developed digital competencies that enable them to engage effectively with technology-enhanced learning environments. Furthermore, they display a high degree of confidence in their ability to successfully perform a wide range of academic tasks.

The high level of digital readiness observed in this study may be attributed to the profound digital transformation that has reshaped higher education in recent years. Digital technologies have become an integral component of everyday academic practice through the widespread adoption of learning management systems, online communication platforms, digital libraries, and electronic scientific databases. Continuous exposure to these digital resources has likely enabled students to accumulate substantial technological experience, thereby strengthening both their technical competencies and their ability to utilize digital technologies effectively for educational purposes.

Another plausible explanation relates to the characteristics of the current generation of university students, many of whom have grown up in digitally connected environments characterized by extensive access to smartphones, social media platforms, and web-based applications. Such sustained exposure has facilitated the development of diverse digital competencies that extend beyond recreational use to include sophisticated educational and academic applications. In this regard, Ng (2012, p. 1068) argued that digital readiness has become a

fundamental component of contemporary educational competence and represents an essential prerequisite for successful participation in modern learning environments.

The high level of academic self-efficacy identified in the present study can be interpreted within the framework of Bandura's Social Cognitive Theory. According to Bandura (1997, p. 79), individuals' self-efficacy beliefs are primarily shaped through successful mastery experiences. As students repeatedly overcome academic challenges and accomplish educational goals, their confidence in their ability to perform future academic tasks becomes progressively stronger. Consequently, successful academic experiences reinforce students' perceptions of competence and promote greater confidence in their academic capabilities.

Moreover, the educational structure of institutes specializing in Physical Education and Sport Sciences provides students with numerous opportunities to experience success across both theoretical coursework and practical training. Such diverse learning experiences are likely to strengthen students' perceptions of academic competence and enhance their confidence in successfully meeting academic requirements. Supporting this interpretation, Zimmerman (2000, p. 84) emphasized that students with high academic self-efficacy are more likely to regulate their own learning effectively, demonstrate greater persistence when confronted with academic difficulties, and adopt adaptive learning strategies that facilitate academic success.

The present findings are consistent with those reported by Hong and Kim (2018, p. 309), who found that students exhibiting higher levels of digital readiness also demonstrated stronger academic engagement and greater confidence in their academic abilities. Likewise, the findings corroborate the results of Fraillon et al. (2020, p. 91), who reported that students with advanced digital competencies displayed higher levels of learner autonomy and stronger perceptions of self-efficacy. Collectively, these findings reinforce the growing body of evidence suggesting that digital readiness constitutes an important foundation for successful academic functioning within digitally mediated higher education environments.

Based on these findings, the first hypothesis was supported, confirming that students at the Institute of Physical Education and Sport Sciences, University of Algiers 3, exhibit high levels of both digital readiness and academic self-efficacy.

11.2. Presentation, Analysis, and Discussion of the Second Hypothesis

The second hypothesis stated that: "There is a positive and statistically significant correlation between digital readiness and academic self-efficacy

among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3."

To test this hypothesis, Pearson's product-moment correlation coefficient was computed to examine the relationship between digital readiness and academic self-efficacy. The results are presented in Table 6.

Table 8. Pearson's Correlation between Digital Readiness and Academic Self-Efficacy

Variables	Pearson's r	p-value	Significance Level
Digital Readiness and Academic Self-Efficacy	0.67	0.001	0.05

11.2.1. Analysis and Discussion of the Findings

As presented in Table 6, the findings revealed a strong positive correlation between digital readiness and academic self-efficacy ($r = 0.67$, $p = 0.001$), indicating statistical significance at the 0.05 level. This finding suggests that students with higher levels of digital readiness tend to report correspondingly higher levels of academic self-efficacy. In other words, greater preparedness to effectively utilize digital technologies is associated with stronger confidence in one's ability to accomplish academic tasks successfully.

This relationship reflects the complementary nature of the two constructs. Digital readiness equips students with the competencies required to access academic resources efficiently, manage and evaluate information critically, communicate effectively in digital learning environments, and complete academic activities with greater confidence and effectiveness. Beyond serving merely as a medium for learning, digital technologies provide students with an enhanced sense of control over their learning processes, thereby reinforcing their beliefs in their academic capabilities. Such perceptions of competence constitute one of the fundamental psychological mechanisms underlying academic self-efficacy.

From the perspective of Bandura's Social Cognitive Theory, the observed relationship can be explained by the role of mastery experiences, which Bandura (1997, p. 80) identified as the most influential source of self-efficacy beliefs. Each successful experience in utilizing digital technologies to complete academic tasks reinforces students' confidence in their ability to overcome future academic challenges. Consequently, repeated positive experiences with technology

contribute to the progressive development of stronger academic self-efficacy beliefs.

The findings may also be interpreted within the framework of self-regulated learning theory. Students possessing higher levels of digital readiness are generally better equipped to organize their learning activities, establish academic goals, monitor their own progress, and evaluate learning outcomes independently. These self-regulatory processes foster greater autonomy and academic competence, which in turn strengthen students' perceptions of self-efficacy (Zimmerman, 2000, p. 89).

The present findings are consistent with those reported by Hatlevik et al. (2018, p. 220), who demonstrated that digital competence is positively associated with both academic self-efficacy and academic achievement. Similarly, Scherer and Siddiq (2019, p. 6) reported a substantial positive relationship between students' digital competencies and their confidence in successfully performing academic tasks. Collectively, these studies provide robust empirical support for the proposition that digital competence constitutes an important predictor of students' academic functioning.

Overall, the findings of the present study provide further empirical evidence supporting contemporary theoretical perspectives that conceptualize digital readiness as both a cognitive and psychological resource that contributes significantly to the development of academic self-efficacy among university students. As higher education becomes increasingly dependent on digital technologies, strengthening students' digital readiness may not only enhance their technological competence but also foster greater confidence, autonomy, and resilience in academic learning.

Accordingly, the second hypothesis was supported, confirming the existence of a positive and statistically significant relationship between digital readiness and academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3.

3.11. Presentation, Analysis, and Discussion of the Results of the Third Hypothesis

The third hypothesis stated that: "The dimensions of digital readiness make a statistically significant contribution to predicting academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3."

Table 9. Results of the Multiple Linear Regression Analysis

Statistical Indicator	R	R^2	Adjusted R^2	F	Sig.
Value	0.742	0.551	0.534	31.78	0.001

Table 10. Regression Coefficients for the Dimensions of Digital Readiness

Dimension	Beta	t	Sig.
Digital Technical Competence	0.287	3.94	0.001
Digital Information Management	0.221	3.11	0.002
Digital Content Creation	0.174	2.48	0.014
Digital Communication and Collaboration	0.251	3.56	0.001
Responsible Use of Digital Technology	0.139	2.07	0.040

3.11.1. Analysis and Discussion of the Results

The findings of the multiple linear regression analysis revealed that the dimensions of digital readiness collectively explained a substantial proportion of the variance in academic self-efficacy, accounting for 55.1% of the total variance. This relatively high explanatory power underscores the significant role of digital readiness in shaping students' academic self-efficacy within the contemporary higher education environment.

These findings indicate that more than half of the individual differences observed in students' academic self-efficacy can be attributed to their possession of diverse digital competencies, including technical competence, digital information management, digital content creation, digital communication and collaboration, and the responsible use of digital technology. Such evidence highlights the multidimensional nature of digital readiness as a key determinant of students' confidence in their academic capabilities.

Among the predictor variables, digital technical competence emerged as the strongest predictor of academic self-efficacy. This finding emphasizes the central role of fundamental technological skills in fostering students' beliefs in their academic capabilities. Students who feel competent in using digital tools, platforms, and technological applications are more likely to demonstrate greater confidence in successfully completing technology-mediated academic tasks.

The second strongest predictor was digital communication and collaboration, reflecting the growing importance of online academic interaction in providing both cognitive and social support. According to Bandura (1997, p. 101), social persuasion and positive feedback constitute important sources of self-efficacy beliefs, as supportive academic interactions reinforce individuals' confidence in their ability to perform successfully.

Furthermore, the significant contributions of digital information management and digital content creation underscore the importance of higher-order cognitive processes involved in searching, evaluating, organizing, synthesizing, and generating knowledge. Students who are proficient in managing digital information tend to experience greater autonomy in learning, which consequently strengthens their academic self-efficacy.

These findings are consistent with those reported by Hong and Kim (2018, p. 310), who identified digital readiness as a fundamental predictor of academic engagement and university success. Likewise, they corroborate the conclusions of Fraillon et al. (2020, p. 94), who demonstrated that digital competence directly enhances students' self-confidence and academic effectiveness.

Overall, the present findings confirm that digital readiness has become a fundamental determinant of academic success in the context of the ongoing digital transformation of higher education. Consequently, investing in the development of students' digital competencies is likely to play a pivotal role in strengthening their academic self-efficacy and improving their overall academic achievement.

12. General Conclusion

The findings of the present study indicate that students at the Institute of Physical Education and Sport Sciences exhibit relatively high levels of both digital readiness and academic self-efficacy. The results further revealed a strong positive relationship between the two constructs, suggesting that the development of digital competencies significantly enhances students' confidence in their academic abilities.

Moreover, the multiple regression analysis demonstrated that the dimensions of digital readiness explained more than half of the variance in academic self-efficacy, highlighting the increasingly important role of digital competencies in contemporary higher education settings.

13. Conclusion

In light of the rapid digital transformation currently reshaping higher education, digital readiness has become an essential prerequisite for academic success. Accordingly, this study sought to examine the predictive role of digital readiness in academic self-efficacy among students at the Institute of Physical Education and Sport Sciences, University of Algiers 3.

The findings demonstrated that students possess relatively high levels of both digital readiness and academic self-efficacy. Furthermore, a statistically significant positive relationship was identified between the two variables, while

the dimensions of digital readiness were found to explain a substantial proportion of the variance in academic self-efficacy.

Based on these findings, the study recommends strengthening digital training initiatives within universities and systematically integrating digital competencies into academic curricula. Such efforts are expected to enhance students' confidence in their academic abilities and ultimately improve their academic success.

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