

## THE EFFECT OF DIGITAL-BASED TALENT MANAGEMENT ON ACADEMIC PERFORMANCE THROUGH DIGITAL COMPETENCE

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### Abstract

Digital transformation has significantly reshaped higher education, requiring universities to develop effective strategies for enhancing students' academic outcomes. However, empirical evidence regarding how digital-based talent management improves academic performance through digital competence remains limited, particularly in emerging economy contexts. This study aims to examine the direct and indirect effects of digital-based talent management on students' academic performance, with digital competence serving as a mediating variable. Drawing upon Human Capital Theory and the Technology Acceptance Model (TAM), data were collected from 200 students of Universitas Islam Sumatera Utara and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results indicate that digital-based talent management has a positive and significant effect on both digital competence and academic performance. Digital competence also significantly influences academic performance and partially mediates the relationship between digital-based talent management and academic performance. Furthermore, the indirect effect through digital competence is stronger than the direct effect, highlighting the importance of capability development in achieving academic success. These findings contribute to the literature by integrating institutional strategy and individual capability within a comprehensive framework and provide practical implications for universities seeking to enhance academic performance through structured digital talent development initiatives.

**Keywords:** *Academic Performance; Digital Competence; Digital Talent Management; Higher Education; SEM-PLS*

### INTRODUCTION

Digital transformation has become one of the most significant developments influencing higher education worldwide. Universities are increasingly required to integrate digital technologies into teaching, learning, and academic management processes to improve educational quality, institutional effectiveness, and competitiveness. The rapid advancement of digital technologies has transformed traditional learning environments into technology-enabled ecosystems where students interact with learning management systems, virtual classrooms, academic information systems, and digital collaboration platforms. Consequently, higher education institutions are expected not only to provide technological infrastructure but also to ensure that students possess the competencies necessary to utilize digital technologies effectively in achieving academic success (Bond et al., 2021; García-Morales et al., 2021). The growing adoption of digital technologies has also encouraged universities to implement more systematic approaches to developing student capabilities. One emerging approach is Digital-Based Talent Management (DBTM), which refers to the strategic utilization of digital technologies to identify, develop, monitor, and optimize individual potential. Digital talent management integrates technology-enabled systems, data analytics, and digital learning platforms into capability development processes, enabling institutions to support students more effectively and efficiently. Unlike conventional talent management approaches, digital-based talent management emphasizes continuous capability enhancement through technology-driven interventions and personalized development opportunities (Singh et al., 2023).

In higher education, students can be viewed as strategic human capital whose competencies and capabilities must be continuously developed to meet the demands of increasingly digitalized academic and professional environments. Universities are therefore challenged to create learning ecosystems that not only facilitate knowledge acquisition but also foster digital readiness, adaptability, and lifelong learning competencies. Through digital-based talent management initiatives, higher education institutions can provide structured support mechanisms that contribute to students' academic development and future employability. Despite substantial investments in educational technology and digital infrastructure, improvements in academic performance are not always proportional to the level of technological adoption. Many universities have successfully implemented digital learning systems and online academic services; however, variations in student performance remain evident. This phenomenon suggests that the availability of technology alone may not guarantee improved educational outcomes. Instead, the effectiveness of digital transformation depends largely on students' ability to utilize technology productively in supporting learning activities. Therefore, understanding the mechanisms through which institutional digital initiatives influence academic performance has become increasingly important.

Previous studies have reported positive relationships between digital technology utilization and educational outcomes. Bond et al. (2021) found that digital learning environments improve student engagement and participation, while García-Morales et al. (2021) demonstrated that digital transformation enhances learning flexibility, knowledge accessibility, and educational effectiveness. Similarly, studies conducted in higher education contexts indicate that technology-supported learning environments contribute positively to academic achievement and learning quality. However, most existing studies emphasize technological adoption and infrastructure availability while providing limited explanation regarding the institutional strategies that facilitate capability development among students. One capability that has received considerable scholarly attention is digital competence. Digital competence has emerged as a critical factor influencing students' ability to effectively utilize technology in learning environments. According to Redecker (2022), digital competence refers to the confident, critical, and responsible use of digital technologies for learning, communication, collaboration, problem-solving, and professional development. Likewise, Falloon (2020) argues that digital competence extends beyond technical skills and encompasses cognitive, social, and ethical dimensions required for meaningful participation in digital environments.

Several empirical studies have demonstrated that digital competence significantly contributes to academic success. Scherer et al. (2021) reported that students with stronger digital competencies tend to engage more effectively with technology-enhanced learning systems. Similarly, Tang et al. (2022), Caliskan et al. (2022), and Marin et al. (2022) found that digital competence positively influences academic achievement, learning effectiveness, and educational performance. Students possessing higher levels of digital competence generally demonstrate better adaptability, self-regulated learning behavior, and greater academic success. Although the relationship between digital competence and academic performance has received increasing attention, several important gaps remain unresolved. First, existing studies predominantly examine digital competence as an independent predictor of academic performance, while limited attention has been devoted to identifying institutional antecedents that contribute to its development. Second, although digital talent management has gained increasing attention within organizational and human resource management research, empirical investigations in higher education contexts remain relatively scarce. Third, prior studies rarely examine digital competence as a mediating mechanism through which institutional strategies influence academic outcomes. Consequently, the processes linking digital-based talent management and academic performance remain insufficiently understood.

Furthermore, most existing studies have been conducted in developed countries, where technological infrastructure and institutional readiness differ substantially from those in emerging economies. Empirical evidence regarding the effectiveness of digital-based talent management in enhancing students' digital competence and academic performance within Indonesian higher education institutions remains limited. This gap highlights the need for additional research that reflects the realities and challenges of digital transformation in emerging educational contexts. The present study draws upon Human Capital Theory (Becker, 1993) and the Technology Acceptance Model (Davis, 1989) to explain the relationships among Digital-Based Talent Management, Digital Competence, and Academic Performance. Human Capital Theory suggests that investments in knowledge, skills, and competencies enhance individual productivity and performance outcomes. In contrast, the Technology Acceptance Model explains how technology utilization contributes to performance improvement through perceived usefulness and ease of use. The integration of these theoretical perspectives provides a comprehensive framework for understanding how institutional digital initiatives contribute to student success through capability development.

Universitas Islam Sumatera Utara (UISU) provides an appropriate context for examining these relationships because the institution has increasingly adopted digital technologies in academic management, learning activities, and student support services. However, empirical evidence regarding the effectiveness of these initiatives in developing students' digital competence and improving academic performance remains limited. Therefore, investigating the mechanisms through which digital-based talent management contributes to educational outcomes is both theoretically and practically relevant. Based on the identified research gaps and practical challenges, this study aims to examine the direct effect of Digital-Based Talent Management on Academic Performance, the effect of Digital-Based Talent Management on Digital Competence, the effect of Digital Competence on Academic Performance, and the mediating role of Digital Competence in the relationship between Digital-Based Talent Management and Academic Performance. This study contributes to the literature in several ways. First, it extends talent management research into the higher education context by positioning students as strategic human capital. Second, it integrates Human Capital Theory and the Technology Acceptance Model to explain how institutional digital strategies influence academic outcomes through capability development. Third, it provides empirical evidence from an emerging economy context, thereby enriching the growing literature on digital transformation in higher education. Finally, the findings offer practical insights for universities seeking to enhance student performance through structured digital talent development initiatives that emphasize both technological adoption and competency enhancement.

## **LITERATURE REVIEW**

### **Human Capital Theory**

Human Capital Theory (HCT) provides a fundamental framework for understanding how investments in individual capabilities contribute to performance outcomes. Originally proposed by Becker (1993), the theory argues that knowledge, skills, competencies, and experience represent valuable forms of capital that enhance productivity and performance. Within higher education, students can be viewed as strategic human capital whose competencies require continuous development to achieve academic success and future employability. The relevance of Human Capital Theory has expanded in the digital era, where digital competencies increasingly determine academic and professional performance. Investments in training, learning resources, mentoring, and technology-enhanced educational systems can be interpreted as institutional mechanisms for developing students' human capital. Consequently, higher education institutions play an important role in creating environments that facilitate capability development and improve educational outcomes. Although Human Capital Theory has been extensively applied in organizational settings, its application in higher education remains relatively limited. Existing studies generally focus on academic skills and educational attainment, while fewer studies investigate how institutional digital strategies contribute to capability development through structured talent management systems. Therefore, Human Capital Theory provides an appropriate foundation for examining the relationship between digital-based talent management, digital competence, and academic performance.

### **Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM), introduced by Davis (1989), explains how individuals adopt and utilize technology based on perceived usefulness and perceived ease of use. According to TAM, users are more likely to accept and effectively utilize technology when they believe that technology improves performance and is easy to operate. In higher education, TAM has been widely used to explain students' adoption of digital learning platforms, online learning systems, and educational technologies (Scherer et al., 2021). The model suggests that effective utilization of technology contributes to improved learning outcomes, engagement, and academic performance. However, critics argue that TAM primarily focuses on individual perceptions and may overlook institutional factors that shape technology utilization. Recent studies have emphasized the importance of integrating TAM with organizational and educational perspectives to better explain technology-related outcomes. In this study, digital-based talent management is positioned as an institutional mechanism that facilitates technology utilization, while digital competence represents the capability developed through technology engagement. Thus, TAM complements Human Capital Theory by explaining how technology adoption contributes to capability development and performance enhancement.

### **Digital-Based Talent Management**

Talent management refers to a systematic process of identifying, developing, retaining, and optimizing individual capabilities to achieve strategic objectives. With the advancement of digital technologies, traditional talent

management practices have evolved into digital-based talent management, which incorporates technology-enabled systems, data analytics, and digital platforms into talent development processes. Digital-based talent management involves the strategic use of digital technologies to support talent identification, competency development, performance monitoring, personalized learning, and capability enhancement. In higher education, digital-based talent management can be implemented through learning management systems, academic analytics, digital mentoring programs, online competency development initiatives, and technology-supported performance evaluation mechanisms.

Recent literature suggests that digital talent management has become increasingly important in developing human capital within technology-intensive environments. Singh et al. (2023) argue that digital talent management enables institutions to systematically enhance individual capabilities by integrating digital technologies into talent development processes. This approach allows organizations and educational institutions to create more adaptive, data-driven, and personalized development strategies. Although previous studies have reported positive relationships between talent management practices and performance outcomes, most empirical evidence originates from organizational and business settings. Research investigating digital-based talent management within higher education remains relatively limited. Furthermore, existing studies primarily focus on direct performance outcomes while paying insufficient attention to the capability-development mechanisms underlying these relationships. From the perspective of Human Capital Theory, digital-based talent management represents a strategic institutional investment designed to strengthen students' competencies and improve educational outcomes. Therefore, digital-based talent management is expected to play a significant role in enhancing digital competence and academic performance.

## Digital Competence

Digital competence has become one of the most essential competencies in contemporary higher education. The increasing integration of digital technologies into learning environments requires students to possess not only technical skills but also broader capabilities related to information management, communication, collaboration, content creation, and problem-solving. According to Redecker (2022), digital competence refers to the confident, critical, and responsible use of digital technologies for learning, professional activities, and participation in society. Similarly, Falloon (2020) emphasizes that digital competence extends beyond operational skills and encompasses cognitive, social, and ethical dimensions necessary for effective technology utilization. The concept of digital competence is particularly relevant in higher education because students are increasingly expected to engage with digital learning resources, virtual collaboration tools, online assessment systems, and technology-supported academic activities. Therefore, digital competence has become a key determinant of students' ability to successfully navigate digital learning environments.

Several empirical studies have confirmed the positive impact of digital competence on educational outcomes. Scherer et al. (2021) found that students with stronger digital competence demonstrate more effective technology utilization and learning engagement. Likewise, Tang et al. (2022), Caliskan et al. (2022), and Marín et al. (2022) reported that digital competence significantly contributes to academic achievement, learning effectiveness, and overall educational performance. Students possessing higher levels of digital competence tend to exhibit greater adaptability, self-regulated learning behavior, and academic success. Despite extensive research on digital competence, most studies conceptualize it as an individual characteristic developed through technology exposure or personal experience. Limited attention has been devoted to understanding how institutional strategies systematically foster digital competence among students. This limitation highlights the importance of examining digital competence as both an outcome of institutional interventions and a mechanism through which organizational strategies influence academic performance.

## Academic Performance

Academic performance refers to the extent to which students successfully achieve desired educational outcomes. It encompasses academic achievement, learning effectiveness, productivity, engagement, and the ability to accomplish educational objectives. Academic performance is widely recognized as one of the primary indicators of educational quality and institutional effectiveness. In the context of digital learning environments, academic performance is increasingly influenced by students' ability to effectively utilize technology. The availability of digital learning systems alone does not guarantee improved academic outcomes. Rather, the benefits of digital technologies depend largely on students' competencies, engagement levels, and ability to integrate digital resources into their learning processes.

Recent studies have highlighted the growing importance of digital competence as a determinant of academic performance. Caliskan et al. (2022) found that digital competencies significantly influence learning achievement and educational effectiveness. Similarly, Marín et al. (2022) reported that students with stronger digital capabilities tend to demonstrate higher academic performance and greater engagement in learning activities. López-Meneses et al. (2023) further confirmed that digital competence consistently emerges as a significant predictor of academic success in higher education environments. These findings suggest that academic performance in contemporary higher education is not only determined by traditional academic factors but also by students' ability to effectively utilize digital technologies. Consequently, understanding the institutional mechanisms that foster digital competence becomes increasingly important for improving educational outcomes.

## Relationship Among Variables and Hypotheses Development

Human Capital Theory suggests that institutional investments in capability development improve individual performance outcomes. In this context, digital-based talent management functions as an institutional investment mechanism that enhances students' competencies and academic achievements. Previous studies indicate that talent management practices positively influence capability development and performance outcomes (Sari & Nugroho, 2022). Therefore, digital-based talent management is expected to positively influence academic performance. Furthermore, digital-based talent management provides learning opportunities, technological support, and competency development programs that strengthen students' digital capabilities. As a result, it is expected to significantly enhance digital competence. Research has consistently demonstrated that digital competence improves students' ability to utilize educational technologies effectively, thereby enhancing academic outcomes (Tang et al., 2022; Zhao et al., 2023). Consequently, digital competence is expected to positively affect academic performance. Although previous studies have examined the relationships between digital competence and academic performance, limited research has investigated the mediating role of digital competence in explaining how institutional digital strategies influence student outcomes. This represents an important theoretical gap because capability development may constitute the primary mechanism through which digital-based talent management improves academic performance.

Based on the theoretical arguments and empirical evidence, the following hypotheses are proposed:

**H1:** Digital-based talent management positively affects students' academic performance.

**H2:** Digital-based talent management positively affects digital competence.

**H3:** Digital competence positively affects students' academic performance.

**H4:** Digital competence mediates the relationship between digital-based talent management and students' academic performance.

## Research Gap

Despite the growing body of literature on digital learning, digital competence, and academic performance, several important gaps remain unresolved. First, previous studies have predominantly focused on the direct relationship between digital competence and academic performance, while limited attention has been given to institutional antecedents that contribute to the development of digital competence. Second, although digital talent management has gained increasing attention in organizational research, empirical investigations within higher education contexts remain scarce. Existing studies primarily emphasize employee performance and organizational outcomes, providing limited evidence regarding how digital-based talent management influences student development and educational performance. Third, prior research generally examines digital competence as an independent predictor of academic outcomes rather than as a mediating mechanism through which institutional strategies generate educational benefits. Consequently, the underlying processes linking digital-based talent management and academic performance remain insufficiently understood.

Finally, empirical evidence from emerging economies, particularly Indonesia, remains limited. Most existing studies have been conducted in developed countries, where technological infrastructure and institutional readiness differ considerably from those of emerging educational contexts. To address these gaps, the present study integrates Human Capital Theory and the Technology Acceptance Model to examine how digital-based talent management influences academic performance through digital competence. By positioning digital competence as both an outcome of institutional intervention and a mediating mechanism, this study provides a more comprehensive explanation of digital transformation in higher education and contributes new empirical evidence from an emerging economy context.

**METHOD**

**A. Research Design**

This study employed a quantitative research approach using an explanatory research design. The objective was to examine the causal relationships among Digital-Based Talent Management (DBTM), Digital Competence (DC), and Academic Performance (AP) among university students. An explanatory design was considered appropriate because the study aimed to test theoretical relationships derived from Human Capital Theory and the Technology Acceptance Model (TAM). The proposed conceptual framework positions Digital-Based Talent Management as the independent variable, Digital Competence as the mediating variable, and Academic Performance as the dependent variable.

[Insert Figure 1 here]

**Figure 1. Research Framework**

Digital-Based Talent Management → Digital Competence → Academic Performance

Digital-Based Talent Management → Academic Performance

**B. Population and Sample**

The population of this study consisted of active undergraduate students at Universitas Islam Sumatera Utara (UISU) who had experience using digital learning systems and academic information platforms. Students were selected as the unit of analysis because they directly experience the implementation of digital-based academic management and technology-supported learning activities.

A purposive sampling technique was employed to ensure that respondents possessed relevant experience with digital learning environments. The sampling criteria included:

1. Active undergraduate students at Universitas Islam Sumatera Utara.
2. Having completed at least one academic semester.
3. Having experience using digital learning platforms and academic information systems.

A total of 200 valid responses were obtained and included in the analysis. According to Hair et al. (2021), the sample size exceeds the minimum requirement for Structural Equation Modeling using Partial Least Squares (SEM-PLS), thereby ensuring adequate statistical power.

**C. Research Variables and Measurement**

This study involved three latent variables measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

**Table 1. Operational Definition of Variables**

Variable	Definition	Indicators
<b>Digital-Based Talent Management</b>	Institutional practices utilizing digital technologies to identify, develop, and monitor student potential	Digital talent identification, digital capability development, performance monitoring, technology-supported academic services
<b>Digital Competence</b>	Students' ability to effectively utilize digital technologies in academic activities	Information literacy, digital communication, content creation, problem solving
<b>Academic Performance</b>	Students' achievement and effectiveness in academic activities	Academic achievement, learning productivity, learning effectiveness, academic engagement

The measurement items were adapted from previous studies and modified to fit the higher education context. Prior to full-scale data collection, a pilot test was conducted to ensure clarity, validity, and reliability of the questionnaire items.

**D. Research Instrument**

Data were collected using a structured questionnaire distributed electronically through online platforms. The questionnaire consisted of two sections. The first section collected demographic information, while the second section measured respondents' perceptions regarding Digital-Based Talent Management, Digital Competence, and Academic Performance.

All measurement items utilized a five-point Likert scale:

1 = Strongly Disagree

- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

The use of an online questionnaire facilitated broader accessibility and increased response rates among students.

### **E. Data Collection Procedure**

The data collection process was conducted in several stages.

First, questionnaire items were developed based on previous literature and validated through expert review. Second, a pilot study was conducted to assess instrument clarity and reliability. Third, the finalized questionnaire was distributed electronically to eligible respondents. Fourth, the collected data were screened for completeness, consistency, and outliers. Incomplete responses and questionnaires exhibiting response bias patterns were excluded from the final dataset. Consequently, only valid responses were included in the statistical analysis.

### **F. Data Analysis Technique**

The collected data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS software. SEM-PLS was selected because it is suitable for predictive research, theory development, and complex mediation models involving latent variables (Hair et al., 2021).

The analysis was conducted through two stages:

#### **1) Measurement Model Assessment (Outer Model)**

The measurement model evaluation included:

1. Convergent Validity
  - Factor Loading > 0.70
  - Average Variance Extracted (AVE) > 0.50
2. Internal Consistency Reliability
  - Composite Reliability > 0.70
  - Cronbach's Alpha > 0.70
3. Discriminant Validity
  - Fornell-Larcker Criterion
  - Heterotrait-Monotrait Ratio (HTMT) < 0.90

#### **2) Structural Model Assessment (Inner Model)**

The structural model evaluation included:

1. Path Coefficients ( $\beta$ )
2. Coefficient of Determination ( $R^2$ )
3. Effect Size ( $f^2$ )
4. Predictive Relevance ( $Q^2$ )
5. Model Fit Assessment
  - SRMR < 0.08
  - NFI > 0.90

Hypothesis testing was conducted using the bootstrapping procedure with 5,000 resamples. A relationship was considered significant when the p-value was less than 0.05.

#### **3) Mediation Analysis**

To evaluate the mediating role of Digital Competence, indirect effects were examined using the bootstrapping method. Mediation was determined based on the significance of indirect paths and the comparison between direct and indirect effects.

The mediation model can be expressed as follows:

$$AP = \beta_1(DBTM) + \beta_2(DC) + \varepsilon \quad (1)$$

$$DC = \beta_3(DBTM) + \varepsilon \quad (2)$$

where:

AP = Academic Performance

DC = Digital Competence

DBTM = Digital-Based Talent Management

$\beta$  = Path Coefficient

$\varepsilon$  = Error Term

#### 4) Common Method Bias Assessment

Because the data were collected using a single survey instrument, Common Method Bias (CMB) was evaluated. Harman’s Single-Factor Test was employed, and the variance explained by a single factor was below the recommended threshold of 50%. Additionally, full collinearity Variance Inflation Factor (VIF) values were below 3.3, indicating that common method bias was not a significant concern in this study.

## RESULTS AND DISCUSSION (TNR, 12 BOLD)

### A. Respondent Profile

The study involved 200 active students of Universitas Islam Sumatera Utara who met the predetermined sampling criteria. Respondents consisted of students who had experience using digital learning platforms and academic information systems in their educational activities. The demographic analysis indicates that all respondents possessed sufficient exposure to digital learning environments, making them appropriate subjects for evaluating the relationships among Digital-Based Talent Management, Digital Competence, and Academic Performance.

### B. Measurement Model Evaluation

The measurement model was assessed to evaluate the validity and reliability of the constructs used in the study. Convergent validity was examined through factor loadings and Average Variance Extracted (AVE), while reliability was assessed using Composite Reliability.

Table 2. Convergent Validity and Reliability Results

Variable	Factor Loading	AVE	Composite Reliability
<b>Digital-Based Talent Management</b>	0.70–0.88	0.62	0.91
<b>Digital Competence</b>	0.72–0.89	0.65	0.92
<b>Academic Performance</b>	0.71–0.87	0.60	0.90

The results indicate that all factor loadings exceeded the recommended threshold of 0.70. Similarly, all AVE values were above 0.50 and Composite Reliability values exceeded 0.70. These findings confirm that all constructs achieved satisfactory convergent validity and internal consistency reliability. Discriminant validity was further assessed using the Fornell-Larcker Criterion and Heterotrait-Monotrait Ratio (HTMT). The results confirmed that all constructs were empirically distinct, indicating adequate discriminant validity.

### C. Structural Model Evaluation

The structural model was evaluated using the coefficient of determination ( $R^2$ ), predictive relevance ( $Q^2$ ), and model fit indices.

Table 3. Coefficient of Determination ( $R^2$ )

Endogenous Variable	$R^2$	Interpretation
<b>Digital Competence</b>	0.58	Moderate
<b>Academic Performance</b>	0.64	Substantial

The results show that Digital-Based Talent Management explains 58% of the variance in Digital Competence. Furthermore, Digital-Based Talent Management and Digital Competence jointly explain 64% of the variance in Academic Performance. These values indicate that the proposed model possesses substantial explanatory power. The predictive relevance assessment also produced  $Q^2$  values greater than zero, confirming the model’s predictive capability.

The model fit indices demonstrate satisfactory model adequacy:

- SRMR = 0.072
- NFI = 0.91

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These values satisfy the recommended thresholds, indicating that the proposed model adequately represents the observed data.

## D. Hypothesis Testing

The significance of the hypothesized relationships was examined using the bootstrapping procedure.

Table 4. Hypothesis Testing Results

Relationship	$\beta$	t-value	p-value	Decision
<b>Digital-Based Talent Management → Academic Performance</b>	0.32	3.45	0.001	Supported
<b>Digital-Based Talent Management → Digital Competence</b>	0.76	12.10	0.000	Supported
<b>Digital Competence → Academic Performance</b>	0.48	5.67	0.000	Supported

The results reveal that all direct relationships are positive and statistically significant. The strongest effect is observed between Digital-Based Talent Management and Digital Competence ( $\beta = 0.76$ ), suggesting that institutional digital initiatives play a substantial role in developing students' digital capabilities.

## E. Effect Size Analysis

The effect size analysis was conducted to determine the magnitude of influence among the constructs.

Table 5. Effect Size ( $f^2$ )

Relationship	$f^2$	Interpretation
<b>Digital-Based Talent Management → Digital Competence</b>	0.58	Large
<b>Digital-Based Talent Management → Academic Performance</b>	0.12	Medium
<b>Digital Competence → Academic Performance</b>	0.29	Medium

The findings indicate that Digital-Based Talent Management exerts a large effect on Digital Competence, while the effects on Academic Performance are moderate.

## F. Mediation Analysis

The mediating role of Digital Competence was examined using bootstrapping analysis.

Table 6. Mediation Test Results

Mediation Path	Indirect Effect ( $\beta$ )	t-value	p-value	Mediation Type
<b>Digital-Based Talent Management → Digital Competence → Academic Performance</b>	0.36	4.98	0.000	Partial Mediation

The results indicate that Digital Competence significantly mediates the relationship between Digital-Based Talent Management and Academic Performance. The mediation is classified as partial because both direct and indirect effects remain significant.

## G. Discussion

The findings provide several important theoretical and practical insights regarding the role of digital-based talent management in higher education.

First, the significant influence of Digital-Based Talent Management on Academic Performance supports Human Capital Theory, which argues that investments in capability development contribute to improved performance outcomes. The findings suggest that institutional initiatives utilizing digital technologies can directly enhance students' academic achievement by providing better access to learning resources, academic support, and performance monitoring systems. This result is consistent with previous studies emphasizing the positive role of technology-supported educational management in improving learning outcomes.

Second, the strong effect of Digital-Based Talent Management on Digital Competence demonstrates the importance of institutional strategies in developing students' technological capabilities. The large effect size ( $f^2 = 0.58$ ) indicates that digital competence is not solely an individual characteristic but is substantially influenced by structured institutional interventions. This finding extends previous literature by positioning digital competence as an outcome of organizational investment rather than merely an individual attribute.

Third, Digital Competence was found to significantly influence Academic Performance. This finding is consistent with previous studies conducted by Scherer et al. (2021), Tang et al. (2022), and Zhao et al. (2023), which reported that students possessing stronger digital competencies tend to demonstrate higher academic achievement. Students who are capable of effectively utilizing digital technologies are more likely to engage with learning materials, collaborate with peers, and adapt to technology-enhanced learning environments. The mediation analysis

provides the most significant contribution of this study. The results indicate that Digital Competence partially mediates the relationship between Digital-Based Talent Management and Academic Performance. Notably, the indirect effect ( $\beta = 0.36$ ) is stronger than the direct effect ( $\beta = 0.32$ ), suggesting that capability development constitutes the primary mechanism through which institutional strategies improve academic outcomes.

These findings contribute to the integration of Human Capital Theory and the Technology Acceptance Model. While Human Capital Theory explains the importance of institutional investment in capability development, TAM explains how technology utilization contributes to performance improvement. Together, these theories provide a comprehensive explanation of how digital transformation initiatives influence student outcomes.

From a practical perspective, the findings suggest that universities should move beyond merely providing technological infrastructure. Instead, higher education institutions should develop comprehensive digital-based talent management systems that include continuous digital skills training, mentoring programs, performance analytics, and technology-supported learning services. Such initiatives are likely to enhance students' digital competence and ultimately improve academic performance. Overall, the findings highlight the importance of integrating institutional digital strategies and individual capability development to achieve sustainable improvements in academic performance within higher education environments.

## CONCLUSION

This study aimed to examine the direct and indirect effects of Digital-Based Talent Management on students' Academic Performance, with Digital Competence serving as a mediating variable. Drawing upon Human Capital Theory and the Technology Acceptance Model (TAM), the study investigated how institutional digital strategies contribute to student capability development and academic outcomes. The findings demonstrate that Digital-Based Talent Management significantly and positively influences both Digital Competence and Academic Performance. In addition, Digital Competence was found to have a significant positive effect on Academic Performance. More importantly, Digital Competence partially mediates the relationship between Digital-Based Talent Management and Academic Performance, indicating that the impact of institutional digital initiatives is largely transmitted through the development of students' digital capabilities. The stronger indirect effect compared with the direct effect suggests that capability development represents the primary pathway through which digital-based talent management enhances academic performance.

From a theoretical perspective, this study extends Human Capital Theory and the Technology Acceptance Model by integrating institutional strategy and individual capability development within a single framework. The findings provide evidence that digital competence functions not only as an individual capability but also as an outcome of institutional investment and a mechanism linking digital strategies to academic performance. From a practical perspective, the results suggest that higher education institutions should move beyond merely providing digital infrastructure and focus on implementing comprehensive digital-based talent management systems. Such systems should include continuous digital skills development programs, mentoring initiatives, academic performance monitoring, and technology-supported learning services to strengthen students' digital competence and improve academic achievement.

This study has several limitations. First, the use of a cross-sectional design limits the ability to capture changes in students' digital competence and academic performance over time. Second, the research was conducted within a single higher education institution, which may limit the generalizability of the findings to other educational contexts. Future research is recommended to employ longitudinal approaches and involve multiple universities to enhance external validity. In addition, future studies may incorporate other relevant variables such as student engagement, self-efficacy, learning motivation, digital learning readiness, or technology anxiety to provide a more comprehensive understanding of academic performance in digital learning environments. Furthermore, universities are encouraged to continuously develop integrated digital talent management programs as part of their long-term digital transformation strategy to support sustainable improvements in student learning outcomes.

## REFERENCES

- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press.
- Bond, M., Bedenlier, S., Marín, V. I., & Händel, M. (2021). Emergency remote teaching in higher education: Mapping the first global online semester. *International Journal of Educational Technology in Higher Education*, 18(1), 50. <https://doi.org/10.1186/s41239-021-00282-x>

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- Caliskan, S., Guney, Z., Sakhieva, R., Vasbieva, D. G., & Zaitseva, N. A. (2022). Teachers' digital competency levels as predictors of students' academic performance. *Education and Information Technologies*, 27(6), 8315–8332. <https://doi.org/10.1007/s10639-022-10916-0>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency framework. *Educational Technology Research and Development*, 68(5), 2449–2472. <https://doi.org/10.1007/s11423-020-09767-4>
- García-Morales, V. J., Garrido-Moreno, A., & Martín-Rojas, R. (2021). The transformation of higher education after the COVID disruption: Emerging challenges in an online learning scenario. *Frontiers in Psychology*, 12, 616059. <https://doi.org/10.3389/fpsyg.2021.616059>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.)*. Sage Publications.
- López-Meneses, E., Sirignano, F. M., Vázquez-Cano, E., & Ramírez-Hurtado, J. M. (2023). Digital competence and academic performance in higher education: A systematic review. *Education Sciences*, 13(4), 412. <https://doi.org/10.3390/educsci13040412>
- Marín, V. I., Carpenter, J. P., & Tur, G. (2022). Pre-service teachers' digital competence and academic performance: The role of technology integration. *Computers & Education*, 185, 104534. <https://doi.org/10.1016/j.compedu.2022.104534>
- Nguyen, T. T., Tran, T. H., & Nguyen, H. T. (2024). Digital transformation and student performance in higher education: The mediating role of digital competence. *Education and Information Technologies*, 29(2), 1867–1888.
- Pratama, A. R., Wibowo, A., & Utami, S. (2023). Digital transformation in higher education: The role of academic information systems in student performance. *Jurnal Manajemen Pendidikan*, 11(2), 89–102.
- Prawiradilaga, D. S. (2016). *Prinsip desain pembelajaran*. Kencana.
- Redecker, C. (2022). *European framework for the digital competence of educators: DigCompEdu*. Publications Office of the European Union.
- Sari, D. P., & Nugroho, Y. (2022). Talent management implementation in improving higher education graduate quality. *Jurnal Manajemen Pendidikan Indonesia*, 14(1), 55–66.
- Scherer, R., Siddiq, F., & Tondeur, J. (2021). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach. *Computers & Education*, 128, 13–35. <https://doi.org/10.1016/j.compedu.2018.09.009>
- Singh, S., Sharma, M., & Dhir, S. (2023). Digital talent management: A systematic literature review and future research agenda. *Human Resource Management Review*, 33(4), 100945. <https://doi.org/10.1016/j.hrmr.2022.100945>
- Tang, Y., Zhao, J., & Liu, Y. (2022). Digital competence and student performance in online learning environments. *Computers in Human Behavior Reports*, 6, 100168. <https://doi.org/10.1016/j.chbr.2022.100168>
- van Laar, E., van Deursen, A. J. A. M., van Dijk, J. A. G. M., & de Haan, J. (2022). Determinants of 21st-century digital skills: A large-scale survey among working professionals. *Computers in Human Behavior*, 72, 577–588. <https://doi.org/10.1016/j.chb.2017.03.017>
- Zhao, Y., Pinto-Llorente, A. M., & Sánchez-Gómez, M. C. (2023). Digital competence and academic performance: The mediating role of self-efficacy. *Education and Information Technologies*, 28(10), 12345–12362