



ANALYSIS OF THE IMPACT OF INTEGRATING BUSINESS ACUMEN, LEADERSHIP STRATEGIES, AND EDUCATIONAL TECHNOLOGY ON ORGANIZATIONAL INNOVATION

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Abstract. This study examines the impact of integrating business acumen, leadership strategies, and educational technology on organizational innovation, aiming to identify how these elements collectively enhance innovation within organizations and determine the most effective leadership styles and best practices for promoting such integration. A quantitative correlational design was employed, with data collected through surveys from respondents across various sectors. Spearman's rho was used to measure the strength and direction of associations between the integration factors and innovation outcomes. The results indicate that integrating educational technology significantly enhances organizational innovation by accelerating product development, improving operational efficiency, fostering a culture of innovation, and enhancing employee skills. Transformational and visionary leadership styles were found to be particularly effective in promoting the adoption of educational technology and business acumen. Best practices identified include the strategic alignment of technology initiatives with business goals, inclusive decision-making involving leaders at all levels, and the use of specific performance metrics to evaluate effectiveness. Investments in educational technology showed a measurable positive impact on key performance indicators related to innovation, such as employee productivity, cost savings, and market expansion. The findings highlight the importance of a holistic approach that combines strategic investments in technology, effective leadership, and sound business practices. Organizations should prioritize





integrating these elements to enhance innovative capabilities and gain a competitive edge. The study underscores the need for sector-specific strategies to maximize the impact of educational technology on innovation, providing a comprehensive framework for organizations aiming to foster innovation through strategic integration of these critical elements.

Keywords: *Business Acumen; Leadership Strategies; Educational Technology; Organizational Innovation; Descriptive-Correlational Study*





INTRODUCTION

In today's rapidly evolving business landscape, organizations face relentless challenges in staying competitive and innovative. Traditional approaches often fall short due to technological advancements, dynamic market conditions, and complex business environments, prompting the need to effectively integrate business acumen, leadership strategies, and educational technology to drive and sustain innovation.

Current research underscores the individual significance of these elements in fostering organizational innovation. Business acumen involves strategic thinking, financial literacy, and market awareness, which are essential for informed decision-making and aligning organizational goals with market opportunities (Dexter, 2023). Leadership strategies, particularly transformational and transactional approaches, play a vital role in shaping organizational culture and enhancing employee performance by fostering motivation and aligning team efforts with strategic objectives (Dexter & Richardson, 2020; Zhu et al., 2013).

Educational technology, on the other hand, enhances learning, professional development, and operational efficiency. Tools like e-learning platforms, digital collaboration systems, and advanced analytics enable leaders to make data-driven decisions, facilitate communication, and personalize development strategies, driving both individual and organizational growth (Yilmaz, 2021). Together, these elements form a foundation for creating innovative and adaptable organizational environments.

However, there is a notable gap in the literature regarding the combined impact of these elements on organizational innovation. Few studies explore how their integration can create a synergistic effect, enhancing innovation and adaptability to changing market conditions (Liu et al., 2020). Organizations investing in educational technology see increases in employee engagement and creativity (Bersin, 2013). Case studies of companies like General Electric and Google illustrate the successful integration of these elements in real-world situations (Tichy & Cohen, 1997; Garvin, 2013).

This research aims to fill the gap in the current body of knowledge by providing empirical evidence and actionable recommendations. It seeks to demonstrate that the synergistic integration of business acumen, leadership strategies, and educational technology can significantly enhance an organization's innovation capabilities, offering valuable insights for both academic research and practical applications in organizational management and innovation.

Moreover, this study seeks to answer several key questions: How does the integration of educational technology within business operations influence organizational





innovation? Which leadership styles are most effective in facilitating the integration of educational technology and business acumen to promote innovation? What are the best practices for integrating business acumen, leadership strategies, and educational technology to maximize innovation outcomes? What is the measurable impact of educational technology investment on key performance indicators related to innovation? Is there a significant impact of integrating business acumen, leadership strategies, and educational technology on organizational innovation? The hypothesis to be tested is: There is no significant impact of integrating business acumen, leadership strategies, and educational technology on organizational innovation.

This study is significant and beneficial to the healthcare, educational, business, and local government sectors in Initao, Misamis Oriental for several reasons. Academically, it contributes to the existing body of knowledge by exploring the interplay between business acumen, leadership strategies, and educational technology in fostering innovation. Practically, the findings will provide organizations with insights into effective practices for integrating these components, helping them to improve their innovation outcomes and maintain a competitive edge.

In addition, the theoretical framework for this study is anchored in the Diffusion of Innovations Theory by Everett Rogers (1995). Diffusion of Innovations Theory posits that innovation is communicated through certain channels over time among the members of a social system. According to Rogers, the process of adopting new technologies or innovations involves several stages: knowledge, persuasion, decision, implementation, and confirmation. This theory is relevant to the study as it helps to understand how educational technology is adopted within organizations and how it leads to increased productivity, improved skills, and enhanced collaboration (Al-Rahmi et. al., 2019).

The scope of this study is limited to organizations that have actively implemented educational technology as part of their business operations. The study will focus on various industries to ensure a comprehensive understanding of the subject. However, the findings may not be generalizable to organizations that do not use educational technology or operate in entirely different contexts.





Literature Review

This literature review synthesizes the existing research on each of these components and their potential synergistic effects, providing a foundation to support the validity of the study.

Business acumen is crucial in aligning financial and operational strategies with organizational goals. For instance, strategic decision-making backed by market insights and resource optimization fosters an environment conducive to innovation (Dexter, 2023). Leaders who exhibit strong business acumen are better equipped to identify growth opportunities and align technology investments with organizational priorities, ensuring sustainable competitive advantages.

Additionally, it also encompasses a deep understanding of various business operations and strategic planning. It includes financial literacy, market awareness, and the ability to make informed decisions that drive the organization's objectives. Research has shown that business acumen is critical for leaders in effectively navigating complex business environments and making strategic decisions that foster innovation (McKenzie & Winkelen, 2014). Leadership plays a pivotal role in shaping an organization's culture and driving innovation. Transformational leadership, in particular, has been widely recognized for its positive impact on innovation. Research by Eisenbeiß and Boerner (2013) indicates that transformational leadership is significantly associated with higher levels of innovation within organizations. Additionally, transactional leadership, which focuses on clear structures, rewards, and penalties, can also support innovation by providing the necessary framework and resources for innovative activities (Zhu et al., 2013).

Educational technology is a transformative element in achieving organizational goals. Studies by Yilmaz (2021) demonstrate how digital communication tools and collaborative platforms improve stakeholder engagement and instructional delivery. Technology also enables personalized learning, fostering an innovative culture that aligns with modern organizational demands (Dexter, 2023; Davies & West, 2014).

According to Clark and Mayer (2016), the use of educational technology can lead to improved knowledge retention, better engagement, and enhanced performance outcomes. Technologies such as e-learning platforms, virtual reality simulations, and collaborative tools enable continuous learning and knowledge sharing, which are critical for fostering innovation. While there is extensive research on the individual impacts of business acumen, leadership strategies, and educational technology, studies on their combined effects are limited. However, some emerging research suggests that the





integration of these elements can create a synergistic effect that amplifies their individual benefits. For instance, a study by Liu et al. (2020) found that organizations that successfully integrate leadership strategies with advanced technological tools are better positioned to drive innovation.

Leadership strategies that emphasize emotional intelligence and adaptability play a pivotal role in managing technological transitions. Goleman, Boyatzis, and McKee (2002) discuss how emotional intelligence facilitates relationship management and overcomes barriers to change, thus creating a supportive culture for innovation. Furthermore, Dexter and Richardson (2020) emphasize that educational leaders leveraging digital tools can enhance collaboration and data-driven decision-making, thus reinforcing innovation capabilities within organizations.

This review highlights the importance of business acumen, leadership strategies, and educational technology in driving organizational innovation. While each element has been studied individually, their combined impact remains underexplored. This study addresses this gap by examining how integrating these components can enhance innovation. It aims to provide evidence-based insights and practical recommendations to advance both research and real-world organizational practices.

METHODOLOGY

This study employs a descriptive correlational research design to examine the relationships between business acumen, leadership strategies, educational technology, and organizational innovation. By utilizing this design, the study aims to describe the current condition of these variables within organizations and explore how they are interrelated. Data were collected through an online survey distributed to employees from various industries, using Likert-scale questions to measure perceptions and experiences.

The research was conducted among various organizations in Initao, Misamis Oriental, a first-class municipality in the province of Misamis Oriental and is located in the western part of the province, using purposive sampling to select participants with specific traits relevant to the study. A total of 122 respondents were included, chosen based on their organizational affiliation, industry sector, position, and tenure in their current roles. The purposive sampling technique was employed to ensure the inclusion of individuals who could provide the most relevant insights into the research objectives. Participants were drawn from small (1-50 employees), medium-sized (51-200 employees), and large organizations (201+ employees), with the majority coming from medium-sized





organizations (77 participants or 63.1%), followed by small organizations (30 participants or 24.6%), and large organizations (15 participants or 12.3%). In terms of industry sector, respondents were predominantly from the education sector, comprising 79 participants or 64.8% of the sample, while 17 participants (13.9%) were from the technology sector, and 11 participants (9.0%) represented the finance sector. The distribution of participants by position showed that staff members constituted the largest group (41 participants or 33.6%), followed by faculty/instructors (32 participants or 26.2%) and team leaders (16 participants or 13.1%). Regarding tenure in their current roles, 38 participants (31.1%) had less than one year of experience, while 47 participants (38.5%) had served for 1-3 years. Those with 4-6 years of tenure accounted for 21 participants (17.2%), followed by 10 participants (8.2%) with 7-10 years of service and 6 participants (4.9%) with over 10 years of tenure. The sample was designed to capture a diverse range of perspectives and experiences, ensuring representation across different organizational sizes, industry sectors, and demographic profiles.

The study utilized a researcher-developed survey instrument meticulously designed to address the research objectives. The survey tool was divided into four distinct sections, each tailored to capture specific dimensions of the study's focus. To ensure the instrument's validity and reliability, it underwent a comprehensive validation and testing process. This included expert validation to confirm that each item accurately represented its corresponding construct or dimension, pilot testing to refine the instrument based on preliminary feedback, and reliability testing to establish internal consistency. The first section of the questionnaire examined the integration of educational technology and its influence on organizational innovation, consisting of 10 items with an excellent internal consistency reliability score of 0.971. The second section focused on effective leadership styles in facilitating integration and innovation, also comprising 10 items with a reliability score of 0.962. The third section explored best practices for integrating business acumen, leadership strategies, and educational technology to optimize innovation outcomes, featuring 10 items with a reliability score of 0.971. The final section assessed the impact of educational technology investment on key innovation performance indicators, with 10 items achieving a reliability score of 0.979. The overall reliability of the survey instrument was found to be excellent, with a Cronbach's alpha of 0.988, demonstrating high internal consistency across all sections.

This study employs descriptive correlational analysis alongside Spearman's rho to explore the relationships between business acumen, leadership strategies, educational technology, and organizational innovation. This non-parametric method was selected because the data were not normally distributed, as confirmed by Shapiro-Wilk test results ($p < 0.001$). Spearman's rho, suited for ordinal data from Likert-scale responses, measures the strength and direction of monotonic relationships. It provided robust





insights into how these variables interact, ensuring reliable results despite the non-normality of the data.

The study was meticulously conducted through a series of well-structured steps to ensure adherence to ethical standards and effective data collection: The researchers initially developed the survey instrument and ethical approval was sought from the college ethics review committee. This form of a critical step was meant to ensure that the survey honored ethical norms and that no scare or harassment could also occur. Primarily ensuring that the instrument used was ethical before data collection was necessary.

Afterward, the researcher secured formal permission from the Local Government of Initao. This entailed a detailed interaction with various organizations and sectors in Initao, Misamis Oriental. The researchers approached the respective heads in each of the organizations and explained to them the objectives of this study, for which they sought their permission for research on their premises. Data collection started immediately following these approvals and orientations, signaling the onset of the study.

In the field, the researchers visited multiple offices with authorization from the corresponding heads. Some of the employees were asked to participate in the study as respondents by the researchers. To prevent inaccurate responses and unwanted surprises, participants were first given information about the survey before answering a questionnaire. This helped to guarantee that they knew what was expected of them when participating in the survey.

In the third and final stage of conducting the research, data collected from filled questionnaires online were carefully organized while analysis was done using relevant statistical tools. Participants' enthusiasm and goodwill to participate in the study were highly commended. The researchers guaranteed confidentiality as all data gathered were treated with the highest level of confidentiality, which considered privacy and integrity characteristics comprised of genuine responses from different participants.





RESULTS

I: How does the integration of educational technology within business operations influence organizational innovation?

Table 1.

Integration of Educational Technology within Business Operations Influence Organizational Innovation

Statement	Mean	SD	Interpretation
1. The use of educational technology has significantly accelerated our product development processes.	4.26	0.76	<i>Strongly Agree</i>
2. Educational technology has contributed to substantial improvements in our operational efficiency and workflow processes.	4.24	0.77	<i>Strongly Agree</i>
3. Educational technology has played a crucial role in enhancing the skills and competencies of our employees.	4.32	0.74	<i>Strongly Agree</i>
4. The integration of educational technology has fostered a culture of innovation within our organization.	4.22	0.79	<i>Strongly Agree</i>
5. Educational technology has given our organization a competitive edge in the market through innovative practices.	4.18	0.83	<i>Agree</i>
6. Educational technology has improved collaboration and communication across different departments, leading to innovative solutions.	4.28	0.83	<i>Strongly Agree</i>
7. The integration of educational technology has enhanced customer satisfaction by enabling the development of innovative products and services.	4.19	0.82	<i>Agree</i>
8. Our organization is more adept at adopting emerging technologies due to the integration of educational technology.	4.02	0.88	<i>Agree</i>
9. Educational technology has increased employee engagement and motivation, leading to innovative contributions.	4.13	0.81	<i>Agree</i>
10. We have observed measurable improvements in our innovation metrics (e.g., number of new products, patents filed) due to the integration of educational technology.	4.03	0.85	<i>Agree</i>
Grand Mean	4.19	0.72	<i>Agree</i>





The study examines how integrating educational technology within business operations influences organizational innovation. The highest mean of 4.32 ($SD = 0.74$), highlights that respondents strongly agree that educational technology significantly enhances employees' skills and competencies. This implies that educational technology is perceived as a powerful tool for employee development, which is critical for driving innovation within organizations. Improved skills and competencies among employees can lead to more creative problem-solving and the development of innovative solutions. On the other hand, the lowest mean of 4.02 ($SD = 0.88$), suggests more diverse opinions regarding the role of educational technology in aiding the adoption of emerging technologies. This indicates that while there is general agreement on its benefits, some respondents may have reservations or face challenges in effectively integrating educational technology for this purpose. This variability might stem from differing levels of technological infrastructure or varying degrees of technological proficiency across organizations. The grand mean of 4.19 ($SD = 0.72$) indicates that respondents generally agree on the positive influence of educational technology on organizational innovation.

II: Which leadership styles are most effective in facilitating the integration of educational technology and business acumen to promote innovation?

Table 2.

Leadership Styles Facilitating the Integration of Educational Technology and Business Acumen to Promote Innovation

Statement	Mean	SD	Interpretation
1. Transformational leaders in our organization inspire and motivate employees to embrace educational technology for innovative solutions.	4.06	0.82	<i>Agree</i>
2. Transactional leaders in our organization effectively use rewards and incentives to encourage the adoption of educational technology.	3.75	0.91	<i>Agree</i>
3. Democratic leaders in our organization actively involve employees in decision-making processes related to the integration of educational technology.	3.83	0.92	<i>Agree</i>
4. Autocratic leaders in our organization provide clear directives and control over the use of educational technology to ensure its effective implementation.	3.70	0.83	<i>Agree</i>
5. Laissez-faire leaders in our organization allow employees significant autonomy in how they integrate educational technology to drive innovation.	3.77	0.82	<i>Agree</i>



6. Innovative leaders in our organization are proactive in exploring and implementing new educational technologies to foster innovation.	3.95	0.83	<i>Agree</i>
7. Servant leaders in our organization prioritize the needs of employees, supporting them in using educational technology to achieve innovative outcomes.	3.89	0.87	<i>Agree</i>
8. Charismatic leaders in our organization effectively communicate the benefits of educational technology, inspiring employees to innovate.	3.95	0.87	<i>Agree</i>
9. Situational leaders in our organization adapt their leadership style to effectively integrate educational technology based on the specific context and needs.	3.93	0.80	<i>Agree</i>
10. Visionary leaders in our organization set a clear vision for the future that includes the strategic use of educational technology to drive innovation.	3.97	0.80	<i>Agree</i>
Grand Mean	3.88	0.73	<i>Agree</i>

The study explores which leadership styles are most effective in facilitating the integration of educational technology and business acumen to promote innovation. The data indicates a general agreement that various leadership styles play a significant role in facilitating the integration of educational technology and business acumen to promote innovation. Transformational leadership is perceived as highly effective, with a mean of 4.06 ($SD = 0.82$), indicating strong agreement that such leaders inspire and motivate employees to embrace educational technology for innovative solutions. This implies that leaders who can articulate a clear vision and inspire their teams are crucial in fostering an environment where educational technology can thrive, leading to innovative outcomes. Conversely, autocratic leadership has the lowest mean of 3.70 ($SD = 0.83$), suggesting that clear directives and control are effective in ensuring the implementation of educational technology, though this approach has slightly less agreement. The lower mean value indicates that while some respondents recognize the benefits of a directive approach, it may not be as widely accepted or as effective as other leadership styles in promoting innovation through educational technology. The grand mean of 3.88 indicates that, on average, respondents agree that various leadership styles positively influence the integration of educational technology and business acumen to promote innovation.





III: What are the best practices for integrating business acumen, leadership strategies, and educational technology to maximize innovation outcomes?

Table 3.

Best Practices for Integrating Business Acumen, Leadership Strategies, and Educational Technology to Maximize Innovation Outcomes

Statement	Mean	SD	Interpretation
1. Our organization ensures that educational technology initiatives are strategically aligned with business goals and leadership vision.	3.97	0.80	Agree
2. Leaders at all levels are involved in decision-making processes related to the adoption and integration of educational technology.	3.86	0.92	Agree
3. We use specific performance metrics to evaluate the effectiveness of integrating educational technology with business and leadership strategies.	3.76	0.92	Agree
4. Our organization allocates sufficient resources (financial, human, and technological) to support the integration of educational technology for innovation.	3.77	0.94	Agree
5. We cultivate a culture of innovation by promoting the use of educational technology in everyday business practices and leadership initiatives.	3.91	0.81	Agree
6. Our organization has mechanisms in place to gather feedback and iteratively improve the integration of educational technology.	3.82	0.94	Agree
7. Leadership in our organization actively supports and advocates for the use of educational technology to enhance business operations and innovation.	3.95	0.83	Agree
8. Educational technology tools and platforms are easily accessible and user-friendly for all employees within the organization.	3.78	0.97	Agree
9. We have effective risk management practices in place to address potential challenges in integrating educational technology.	3.75	0.98	Agree
10. Our organization has recognition and reward systems to encourage innovative use of educational technology in achieving business objectives.	3.76	0.96	Agree
Grand Mean	3.83	0.81	Agree

The study investigates the best practices for integrating business acumen, leadership strategies, and educational technology to maximize innovation outcomes. The data indicates a general agreement that integrating business acumen, leadership strategies,





and educational technology through specific best practices can significantly enhance innovation outcomes. The highest mean of 3.97 ($SD = 0.80$) suggests strong agreement that aligning educational technology initiatives with business goals and leadership vision is a crucial best practice. This highlights the importance of a strategic approach where educational technology efforts are directly linked to the overall mission and objectives of the organization, ensuring relevance and focused efforts toward innovation. Conversely, the lowest mean of 3.75 ($SD = 0.98$) suggests that there are more diverse opinions regarding effective risk management practices to address potential challenges in integrating educational technology. While still seen as important, the higher variability indicates that experiences and perceptions of risk management effectiveness can vary significantly among different organizations. The grand mean of 3.83 ($SD = 0.81$) indicates that respondents generally agree on the effectiveness of these best practices for integrating business acumen, leadership strategies, and educational technology to maximize innovation outcomes.

IV: What is the measurable impact of educational technology investment on key performance indicators related to innovation?

Table 4.

Measurable Impact of Educational Technology Investment on Key Performance Indicators related to Innovation

Statement	Mean	SD	Interpretation
1. Investment in educational technology has significantly reduced the time required to develop new products.	3.90	0.83	<i>Agree</i>
2. Our investment in educational technology has led to a noticeable improvement in the quality of our products and services.	3.89	0.79	<i>Agree</i>
3. Educational technology investments have streamlined our operational processes, making them more efficient.	3.96	0.81	<i>Agree</i>
4. Integrating educational technology has resulted in significant cost savings in our product development and operational processes.	3.93	0.76	<i>Agree</i>
5. Our use of educational technology has enabled us to expand into new markets more effectively.	3.93	0.84	<i>Agree</i>
6. Investment in educational technology has improved collaboration and knowledge sharing, leading to more innovative solutions.	3.94	0.86	<i>Agree</i>





7. Educational technology has enhanced employee productivity, contributing to innovative outcomes.	4.00	0.79	<i>Agree</i>
8. Investments in educational technology have led to higher customer satisfaction through more innovative offerings.	3.91	0.88	<i>Agree</i>
9. Our ability to bring new products to market quickly has improved due to our investment in educational technology.	3.88	0.87	<i>Agree</i>
10. Educational technology has enhanced our learning and development programs, resulting in a more innovative workforce.	3.99	0.83	<i>Agree</i>
Grand Mean	3.93	0.76	<i>Agree</i>

The study examines the measurable impact of educational technology investment on key performance indicators (KPIs) related to innovation. The data indicates a general agreement that investments in educational technology positively impact KPIs related to innovation. The highest mean of 4.00 ($SD = 0.79$) indicates strong agreement that investments in educational technology enhance employee productivity, contributing to innovative outcomes. This finding suggests that educational technology plays a crucial role in improving employees' efficiency and effectiveness, thereby driving innovation within the organization. Conversely, the lowest mean of 3.88 ($SD = 0.87$) reflects the belief that educational technology investments enable organizations to bring new products to market more quickly. Although this statement has the lowest mean, the agreement remains relatively strong, indicating that educational technology contributes significantly to reducing time-to-market for new products. The grand mean of 3.93 ($SD = 0.76$) indicates that respondents generally agree on the positive impact of educational technology investments on KPIs related to innovation.



V: Is there a significant impact of integrating business acumen, leadership strategies, and educational technology on organizational innovation?

Table 5.

Relationship of Integrating Business Acumen, Leadership Strategies, and Educational Technology on Organizational Innovation

Variables		r_s value	df	p-value	Remarks
Educational Technology	Organizational Innovation	0.711	120	<0.001	Significant High Correlation
Leadership Strategies		0.836	120	<0.001	Significant High Correlation
Business Acumen		0.859	120	<0.001	Significant High Correlation

The study reveals significant high correlations between the integration of educational technology, leadership strategies, and business acumen with organizational innovation. The correlation coefficients are 0.711 for educational technology, 0.836 for leadership strategies, and 0.859 for business acumen, all with p-values less than 0.001, indicating that these relationships are statistically significant.

Discussion

This study indicates that respondents generally agree on the positive influence of educational technology on organizational innovation. This overall agreement suggests that educational technology is widely recognized as a critical factor in enhancing various aspects of innovation, from accelerating product development to improving collaboration and communication. The relatively low standard deviations across the statements reinforce the consistency of these perceptions among respondents. The study's findings imply that integrating educational technology within business operations significantly enhances organizational innovation. The consistently high mean values and relatively low standard deviations across all statements underscore the positive impact of educational technology on various aspects of innovation. This includes accelerating product development, improving operational efficiency, enhancing skills and competencies, fostering a culture of innovation, providing a competitive edge, improving collaboration and communication, increasing customer satisfaction, aiding in adopting emerging technologies, boosting employee engagement and motivation, and improving innovation metrics. These results collectively suggest that educational technology is a critical driver of organizational innovation.

The findings regarding the positive influence of educational technology on organizational innovation are supported by various studies that highlight the critical role of digital technologies in enhancing innovation processes. For instance, Zeebaree et al.





(2020) emphasize that technological advancements, including AI and big data, significantly improve organizational management and performance, thereby fostering innovation in dynamic environments. Similarly, Montejano García et al. (2016) demonstrate that the use of information technologies positively influences organizations' willingness to innovate, as evidenced by their survey of business leaders. Furthermore, Abduvalieva et al. (2024) discuss how digital technologies can enhance student engagement and personalized learning, which parallels the need for organizations to adapt and innovate through educational technology. Lastly, Wang's (2023) research indicates that digital transformation enhances organizational agility, which is crucial for improving innovation performance. Collectively, these studies reinforce the notion that educational technology is a vital driver of organizational innovation across various sectors.

Moreover, this study indicates that, on average, respondents agree that various leadership styles positively influence the integration of educational technology and business acumen to promote innovation. This overall agreement suggests that leveraging a mix of leadership styles is beneficial in fostering an environment where educational technology can enhance organizational innovation. The findings suggest that various leadership styles are effective in facilitating the integration of educational technology and business acumen to promote innovation. The consistently high mean values and moderate standard deviations across all statements underscore the positive impact of these leadership styles. Transformational leadership, with the highest mean, emphasizes the importance of inspiration and motivation. Transactional leadership highlights the role of rewards and incentives, while democratic leadership underscores the value of involving employees in decision-making. Autocratic leadership, although less favored, still shows effectiveness in providing clear directives. Laissez-faire leadership supports autonomy, and innovative leadership focuses on proactive exploration and implementation of new technologies. Servant leadership emphasizes supporting employees, charismatic leadership stresses effective communication, situational leadership adapts to specific contexts, and visionary leadership sets clear strategic directions. These results collectively indicate that a combination of leadership styles is critical for effectively integrating educational technology and business acumen to drive innovation.

The integration of various leadership styles significantly influences the incorporation of educational technology and business acumen to foster innovation, as evidenced by multiple studies. Transformational leadership, noted for its inspirational qualities, emerges as particularly effective in motivating employees and enhancing innovation within organizations (Najihah, 2024). Similarly, the role of visionary and distributed leadership is emphasized in educational contexts, where adaptability to new





technologies is crucial for modernizing education (Abdallah et al., 2024). Transactional and entrepreneurial leadership styles also contribute positively to innovation processes, highlighting the importance of a supportive climate for innovation (Mutabelezi & Sethibe, 2023). Furthermore, the effectiveness of leadership styles in educational organizations is linked to the development of personal qualities in leaders, which can enhance organizational behavior and outcomes (Vakhabova et al., 2021). Collectively, these findings underscore the necessity of a blended leadership approach to effectively integrate educational technology and drive innovation (Riddel & Zulfikar, 2024).

Furthermore, this study suggests that respondents generally agree on the effectiveness of these best practices for integrating business acumen, leadership strategies, and educational technology to maximize innovation outcomes. This overall agreement underscores the collective belief in the positive impact of these integrated practices. The findings imply that specific best practices for integrating business acumen, leadership strategies, and educational technology can significantly enhance innovation outcomes. The consistently high mean values and moderate standard deviations across all statements underscore the positive impact of these practices. Aligning educational technology initiatives with business goals and leadership vision is highlighted as a crucial practice. Involving leaders at all levels in decision-making processes and using specific performance metrics to evaluate the effectiveness of integration are also important.

Allocating sufficient resources, cultivating a culture of innovation, and having mechanisms to gather feedback and iteratively improve integration are all seen as effective practices. Active support and advocacy from leadership, ensuring accessibility and user-friendliness of educational technology tools, effective risk management practices, and recognition and reward systems further enhance the integration process. These results collectively support that a combination of strategic alignment, resource allocation, inclusive decision-making, performance evaluation, innovation culture, feedback mechanisms, leadership support, accessibility, risk management, and recognition systems are critical for maximizing innovation outcomes through the integration of business acumen, leadership strategies, and educational technology.

The integration of business acumen, leadership strategies, and educational technology is crucial for enhancing innovation outcomes, as supported by various studies. For instance, effective innovation management practices, such as resource allocation, leadership support, and a clear innovation strategy, are essential for fostering a culture of innovation in organizations (Di, 2022). In educational settings, innovative leadership plays a pivotal role in improving student learning effectiveness by promoting collaboration and leveraging technology, which aligns with the need for strategic





alignment between educational initiatives and business goals (Riddel & Zulfikar, 2024). Furthermore, the Philippine education system is urged to adapt to the Fourth Industrial Revolution by aligning curricula with international standards and enhancing digital literacy, thereby preparing students for a competitive global landscape (Eslit, 2023). The emphasis on performance metrics, feedback mechanisms, and risk management in innovation practices is echoed in the context of technological innovation research in the Philippines, highlighting the importance of international partnerships and open access to enhance research output (Crisostomo et. al., 2022). Collectively, these findings underscore the significance of integrating strategic practices to maximize innovation outcomes across various sectors.

Additionally, this study reveals that respondents generally agree on the positive impact of educational technology investments on KPIs related to innovation. This overall agreement underscores the collective belief in the substantial benefits of educational technology investments for enhancing various aspects of organizational performance. The findings support that investments in educational technology have a positive measurable impact on key performance indicators related to innovation. The consistently high mean values and moderate standard deviations across all statements underscore the positive effects of these investments. Enhancing employee productivity, streamlining operational processes, and achieving cost savings are highlighted as significant outcomes. Expanding into new markets, improving collaboration and knowledge sharing, and reducing product development time are also seen as beneficial impacts of educational technology investments. The improvement in product and service quality, enhancement of learning and development programs, increased customer satisfaction, and quicker market introduction of new products further support the positive impact of educational technology investments. These results collectively reveal that strategic investments in educational technology are crucial for achieving significant improvements in innovation-related KPIs, thereby driving overall organizational innovation and success.

The integration of educational technology is crucial for enhancing organizational productivity and innovation, as evidenced by various studies. Rk and Mk (2024) emphasize that emerging technologies, including collaborative tools, significantly improve workflow processes and decision-making efficiency, thereby fostering business agility. Similarly, Vittorio et al. (2024) highlight that companies adopting advanced technology and innovative management practices achieve superior performance and productivity, underscoring the importance of a culture of innovation. Furthermore, Holloway and Escueta (2020) discuss the growing demand for educational technology, which presents opportunities for innovation while balancing profit and purpose. Lastly, Banu (2023) notes that technology integration in educational management enhances





operational efficiency and stakeholder communication, ultimately improving outcomes. Collectively, these studies affirm that strategic investments in educational technology are essential for driving innovation and improving key performance indicators.

In addition, the findings suggest that effective integration of these elements within an organization is strongly associated with enhanced innovation, underscoring the importance of educational technology, leadership strategies, and business acumen in driving organizational success and competitiveness.

These results are supported by previous studies that emphasize the interconnectedness of these factors in driving innovation. Effective leadership, particularly transformative and technology-focused leadership, is crucial in navigating digital transformations and fostering innovation within organizations (Dey, 2022). Educational reforms emphasize the necessity of aligning technology with leadership to enhance learning environments and drive innovation (Abdallah et al., 2024). Furthermore, strategic leadership and information technology capabilities are identified as key enablers of organizational performance and innovation, highlighting the importance of a cohesive approach that integrates these elements for sustained competitive advantage (Tirastittam et al., 2020). The interplay between managerial, entrepreneurial, and leadership roles further underscores the multifaceted nature of driving innovation in contemporary organizations (Dierk & Dover, 2013).

CONCLUSION

The study used a quantitative correlational design to examine how integrating educational technology, leadership strategies, and business acumen collectively influences organizational innovation. Key findings indicate that educational technology significantly enhances innovation by accelerating product development, improving operational efficiency, fostering a culture of innovation, and enhancing employee skills. Transformational and visionary leadership styles were highly effective in promoting the adoption of educational technology and business acumen, thereby driving innovation. The best practices identified include aligning educational technology initiatives with business goals, inclusive decision-making, and using specific performance metrics to evaluate effectiveness. Additionally, sufficient resource allocation, cultivating a culture of innovation, and feedback mechanisms were essential. Investments in educational technology positively impacted key performance indicators such as employee productivity, operational efficiency, cost savings, market expansion, and improved learning programs. The study addresses the research gap by providing empirical evidence on the synergistic effects of these factors on innovation, highlighting the need





for a holistic approach that combines strategic investments in technology, effective leadership, and sound business practices. Organizations may prioritize these integrations to achieve significant improvements in performance and competitive advantage. Recommendations for the healthcare, educational, business, and local government sectors emphasize the importance of investing in educational technologies, adopting transformational leadership, strategic resource management, and engaging stakeholders in decision-making processes to enhance innovation outcomes. Future research could examine the long-term effects of educational technology, such as AI tools or e-learning platforms, on productivity and innovation. Comparative research across regions could explore how cultural and economic contexts influence technology adoption and innovation outcomes. Sector-specific analyses, such as telemedicine in healthcare or gamified learning in education, could provide tailored insights. Lastly, research on workforce development could assess how training programs and leadership initiatives enhance skills, satisfaction, and innovation.

REFERENCES

- Abdallah, A. K., Al Khanbooli, B., Al Kaabi, N. A. M., & Al Awadhi, M. A. (2024). Bridging innovative technologies with progressive educational governance. *IGI Global Scientific Publishing*, 16. <https://doi.org/10.4018/979-8-3693-0880-6.ch007>
- Abduvalieva, G., Barsanaeva, D., Kenenbaeva, G., Kozub, H., & Aghayeva, S. (2024). Innovations in educational methodologies: Exploring the impact of digital technologies on learning and teaching. *Scientific Herald of Uzhhorod University. Series "Physics,"* 55. <https://doi.org/10.54919/physics/55.2024.289q10>
- Al-Rahmi, W. M., Yahaya, N., Aldraiweesh, A. A., Alamri, M. M., Aljarboa, N. A., & Alturki, U. (2019). Integrating technology acceptance model with innovation diffusion theory: An empirical investigation on students' intention to use e-learning systems. *IEEE Access*, 7, 153837-153848. <https://doi.org/10.1109/ACCESS.2019.2955567>
- Banu, A. N. (2023). The impact of technology integration in educational management and administration. *International Journal of Future Management Research*, 5(6). <https://doi.org/10.36948/ijfmr.2023.v05i06.10858>
- Bersin, J. (2013). *The Impact of Learning on Business Performance: A Strategic Approach to Corporate Learning and Development*. Bersin by Deloitte.
- Clark, R. C., & Mayer, R. E. (2016). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning*. John Wiley & Sons. <https://onlinelibrary.wiley.com/doi/book/10.1002/9781119239086>





- Crisostomo, L. C., Guido, R. M. D., & Villanueva, M. A. (2022). Business technology and innovation research among Southeast Asian countries: Examining Philippine performance in techno innovation research. In Proceedings of the 2022 IEEE 14th International Conference on Business Technology and Innovation. IEEE.
<https://ieeexplore.ieee.org/document/10109275>
- Davies, R. S., & West, R. E. (2014). Technology integration in schools. In J. M. Spector et al. (Eds.), *Handbook of Research on Educational Communications and Technology* (pp.841-853). https://link.springer.com/chapter/10.1007/978-1-4614-3185-5_68
- Dexter, E. (2023). The impact of technology integration on educational leadership practices and school improvement efforts. *Academy of Educational Leadership Journal*, 27(S2), 1-3. Retrieved from Academy of Educational Leadership Journal Allied Business Academies. <https://www.abacademies.org/articles/The-impact-of-technology-integration-on-educational-leadership-practices-and-school-improvement-efforts-1528-2643-27-S2-003.pdf>
- Dexter, S., & Richardson, J. W. (2020). What does technology integration research tell us about the leadership of technology? *Journal of Research on Technology in Education*, 52(1), 17-36. <https://doi.org/10.1080/15391523.2019.1668316>
- Dey, A. (2022). Technology Leadership: Catalyst for Organizational Success. *Journal of Economics & Management Research*. 3(4).
[https://doi.org/10.47363/JESMR/2022\(3\)222](https://doi.org/10.47363/JESMR/2022(3)222)
- Di, K. T. (2022). Exploring Best Practices for Innovation Management in a Rapidly Changing Business Environment. *Journal of Management and Administration Provision*, 2(1), 21-25. <https://doi.org/10.55885/jmap.v2i1.196>
- Dierk, U., & Dover, P. A. (2013). Measuring the integrative impact of managers, entrepreneurs, and leaders in sustaining innovation: A tool for customized executive education programs. *Journal of Executive Education*, 11(1), Article 2.
<https://digitalcommons.kennesaw.edu/jee/vol11/iss1/2/>
- Eisenbeiß, S. A., & Boerner, S. (2013). Transformational leadership and R&D innovation: Taking a curvilinear approach. *Journal of Applied Psychology*, 98(2), 194-207.
[https://www.researchgate.net/publication/228254241 Transformational Leadership and RD Innovation Taking a Curvilinear Approach](https://www.researchgate.net/publication/228254241_Transformational_Leadership_and_RD_Innovation_Taking_a_Curvilinear_Approach)
- Eslit, E. R. (2023). Charting the Future of Philippines Education: Navigating the Intersection of K-12 Education, the Fourth Industrial Revolution (IR 4.0), and Internationalization. Preprints. <https://doi.org/10.20944/preprints202307.1578.v1>
- Garvin, D. A. (2013). Building a Learning Organization. *Harvard Business Review*.
<https://hbr.org/2013/03/building-a-learning-organization>





- Goleman, D., Boyatzis, R., & McKee, A. (2002). *The New Leaders: Transforming the Art of Leadership into the Science of Results*. Little, Brown and Company.
- Holloway, S. M., & Escueta, M. M. (2020). Investment in education technology across the globe: Where profit meets purpose. *Entrepreneurship & Policy Initiative Working Paper Series*. School of International and Public Affairs, Columbia University.
<https://doi.org/10.7916/d8-vvyh-av42>
- Liu, Y., Zhu, Y., & Zhang, J. (2020). Exploring the impact of leadership and technology on organizational innovation: A mediating effect analysis. *Technology Analysis & Strategic Management*, 32(2), 133-146.
- McKenzie, J., & Winkelen, C. V. (2014). *Understanding the knowledgeable organization: Nurturing knowledge competence*. Thomson Learning.
<https://www.amazon.com/Understanding-Knowledgeable-Organization-Nurturing-Competence/dp/1861528957>
- Montejano García, S., García Ramírez, R., & Campos García, R. M. (2016). *Impacto de las tecnologías de información sobre la innovación en las organizaciones*. *Innovación y Tecnología*, 10, La competitividad y nuevos escenarios.
<https://www.riico.net/index.php/riico/article/view/1321>
- Mutimbwa Mutabelezi, W., & Sethibe, T. (2023). A model on the relationship between transformational leadership, transactional leadership, entrepreneurial leadership, and the innovation process. *International Journal of Innovation Management*, 27(7–8), 2350043. <https://doi.org/10.1142/S1363919623500433>
- Najihah, A. (2024). Molding the Future: The Integral Role of Leadership Styles in Shaping Organizational Success. *HISTORICAL: Journal of History and Social Sciences*, 3(1), 11–25. <https://doi.org/10.58355/historical.v3i1.101>
- Riddel, M. ., & Zulfikar, I. R. (2024). The Role of Innovative Leadership in Transforming Student Learning Effectiveness: A Review of Best Practices and Future Directions. *Development: Studies in Educational Management and Leadership*, 3(1), 35–50.
<https://doi.org/10.47766/development.v3i1.1913>
- RK, K. S., & MK, S. (2024). Exploring the Role of Technology in Enhancing Organisational Productivity. *Shanlax International Journal of Management*, 11(S1-Mar), 20-26.
<https://doi.org/10.34293/management.v11iS1-Mar.7994>
- Rogers, E. (1995). *Diffusion of Innovations*, New York, NY, USA: Free Press.
- Tichy, N. M., & Cohen, E. B. (1997). *The Leadership Engine: How Winning Companies Build Leaders at Every Level*. HarperBusiness.



- Tirastittam, P., Jernsittiparsert, K., Waiyawuththanapoom, P., & Aunyawong, W. (2020). Strategic leadership, organizational innovativeness and the firm supply performance: The mediating role of information technology capability. *International Journal of Supply Chain Management*, 9(2).
<https://ojs.excelingtech.co.uk/index.php/IJSCM/article/view/4602>
- Vakhabova, M. K., Suleymanova, D. A., & Shahaeva, F. M. (2021). Study of leadership styles and methods in an educational organization. *Educational Innovations and Practices*, 11(136), 852–855. <https://doi.org/10.34925/EIP.2021.11.136.170>
- Vittorio, R., Rajuddin, W. O. N., & Dewi, N. L. Y. (2024). Enhancing Performance and Productivity Through Innovation in Business Management. *Implikasi: Jurnal Manajemen Sumber Daya Manusia*, 2(1), 11~18.
<https://doi.org/10.56457/implikasi.v2i1.550>
- Wang, B. (2023). The impact of digital transformation on innovation performance in schools: The mediating role of organizational agility. *Journal of Korea Multimedia Society*, 26(4), 586–594. <https://doi.org/10.9717/kmms.2023.26.4.586>
- Yilmaz, A (2021). The Effect of Technology Integration in Education on Prospective Teachers' Critical and Creative Thinking, Multidimensional 21st Century Skills and Academic Achievements. *Participatory Educational Research (PER)*
<https://dergipark.org.tr/en/pub/per/issue/58102/741735>
- Zeebaree, M., Ismael, G. Y., Nakshabandi, O. A., Saleh, S. S., & Aqel, M. (2020). Impact of innovation technology in enhancing organizational management. *Studies of Applied Economics*, 38(4). <https://doi.org/10.25115/eea.v38i4.3970>
- Zhu, W., Avolio, B. J., & Walumbwa, F. O. (2013). Moderating role of follower characteristics with transformational leadership and follower work engagement. *Journal of Organizational Behavior*, 30(7), 893-917.
https://www.researchgate.net/publication/247738338_Moderating_Role_of_Follower_Characteristics_With_Transformational_Leadership_and_Follower_Work_Engagement

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