

## PERSONALIZING THE LEARNING EXPERIENCE: HOW GENDER AND PROFESSION SHAPE TECHNOLOGY PREFERENCES

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**Abstract**— *This study investigates the preferences and perceptions of digital learning tools across various professional fields and genders. While field-specific differences in preferences are minimal, except for design tools, gender emerges as a potential factor influencing learning technology perceptions. Females generally report higher value for aspects like social connection, reflection, and goal setting, suggesting tailored educational approaches that incorporate collaborative activities, reflection opportunities, and goal-oriented instruction. Additionally, the study highlights a preference for self-paced learning among females, prompting the development of adaptable learning pathways and asynchronous options. Notably, gender disparities in EdTech adoption are observed, emphasizing the need for initiatives to bridge the digital divide and ensure equitable access for all learners. The findings underscore the multifaceted role of technology in enhancing learning through social connection, collaboration, practical skill development, personalized learning, and overcoming traditional learning constraints. This research offers valuable insights for educators, institutions, and technology developers to create inclusive and engaging learning environments that cater to diverse needs and preferences, empowering learners to thrive in a technology-driven educational landscape..*

**Index Terms**—*Edtech, Gender, digital tools, empowerment, age, support, learning .*

### INTRODUCTION

In an era that is characterized by technological advancement, the landscape of education is undergoing an unprecedented and transformative shift. In this context, Educational Technology (EdTech) has risen as a pivotal driving force, reshaping traditional teaching and learning paradigms [1]. As institutions of higher learning endeavor to equip students with the skills demanded by an ever-evolving digital milieu, the assimilation of EdTech tools and platforms within the conventional educational frameworks has evolved into both a compelling necessity and a realm rife with prospects [2].

This research delves into the complex perceptions that university students and graduates have regarding EdTech. It explores the challenges and opportunities that EdTech presents for the future of education [3].

As we explore the complex and ever-changing perceptions of EdTech in higher education, we aim to shed light on the interplay between learners, technology, and pedagogy [1]. This paper

seeks to uncover the deep-seated concerns and high hopes that surround the adoption of EdTech in higher education [2]. By giving the students and graduates who are at the heart of the educational experience a voice, we hope to contribute valuable insights into this important topic [3]. We also aim to map out the complex dynamics that govern the integration of EdTech in higher education, taking into account both the positive and negative aspects. Ultimately, we hope to illuminate the intersection of innovation and tradition, where the promise of technological advancement meets the established foundations of academia [2].

### . RESEARCH PROBLEM

While educational technology (EdTech) integration is steadily increasing in higher education globally, its nuanced acceptance and perception by university students and graduates in developing contexts, like Lebanon, remains poorly understood. This lack of comprehension is particularly relevant in light of the recent, often unplanned and chaotic, surge in EdTech adoption due to unforeseen circumstances like the global pandemic. Existing research exploring student and graduate perceptions of EdTech tends to focus on developed nations, overlooking the unique socio-economic and cultural landscapes of developing countries. Furthermore, the recent, rapid, and often uncontrolled implementation of EdTech in many developing contexts adds a new layer of complexity to the landscape, demanding further investigation. While research acknowledges the potential benefits of EdTech, such as skill development and engaging learning experiences [1], concerns still linger regarding its impact on pedagogy, equity, and the overall educational experience [3].

This research proposes to address this gap by investigating the **complex interplay between student perceptions, EdTech integration, and pedagogical approaches in higher education**. Specifically, it will:

- **Uncover the factors influencing student perceptions of EdTech**, including concerns about effectiveness, accessibility, and impact on learning experiences.
- **Identify the challenges and opportunities that arise from the integration of EdTech**, drawing on the perspectives of students.
- **Develop recommendations for effective and equitable EdTech integration in higher education**, based on the gathered insights and a critical analysis of current practices.

### RESEARCH QUESTIONS

1. What are the perceptions of current university students and graduates about the potential of EdTech to support learning?
2. Is there a significant correlation between the perceptions of the potential of Educational Technology (EdTech) in empowering persons at the personal level, and the age and gender of the participants in higher education?
3. Why are university students and graduates excited about using learning technology in the future?

## Literature Review

The pervasive influence of technology on modern society has catalyzed a profound transformation across various sectors, and the realm of education is no exception to that. Over the past decades, the integration of Educational Technology (EdTech) into teaching and learning practices has surged, promising to reshape traditional educational paradigms and to enhance learning outcomes.

EdTech faces both challenges and opportunities in the realm of perceptions surrounding it.

### *1. Challenges*

#### **The Existing Gap in Technological Proficiency among Students**

Various studies have highlighted the presence of a digital divide, wherein students' varying levels of comfort and skill with technology lead to discrepancies in their ability to access and effectively utilize EdTech tools [4]. While some students are adept at navigating technology due to growing up in an era immersed in digital advancements, others might have limited exposure due to socioeconomic constraints or differing educational backgrounds [4]. This divide is further influenced by factors like age, gender, socioeconomic status, and prior educational experiences, which only contribute to a diversity of technological proficiency levels.

The repercussions of this technological proficiency gap are multifaceted. Firstly, it exacerbates existing inequalities in student participation, favoring those with higher digital skills [5]. These students tend to engage more actively in online discussions, collaborative projects, and virtual learning environments [6]. Conversely, students with limited proficiency feel marginalized and struggle to navigate digital interfaces, hindering their participation and impacting their learning outcomes [7].

Secondly, the gap directly impacts the efficacy of online learning experiences. Proficient students can leverage a variety of digital resources to enhance their understanding and learning, while those who are less tech-savvy might struggle to grasp complex concepts that are presented through unfamiliar digital mediums.

Moreover, the technological proficiency gap exacerbates the digital divide, perpetuating inequalities in education. Students who lack access to technology or possess limited digital literacy are at risk of further marginalization in today's rapidly evolving digital landscape [7]. This divide can extend beyond academia, influencing future employment opportunities and levels of civic engagement.

#### **Pedagogical Shifts and Resistance**

Amid the transition towards blended or fully online learning environments, concerns have arisen regarding potential shifts in pedagogical approaches and traditional classroom dynamics [8]. The incorporation of EdTech often encounters resistance from both educators and students. This resistance stems from the fact that the integration of technology necessitates the adoption of new teaching methods and the flexibility to adapt to novel learning modalities. The infusion of Educational Technology (EdTech) into higher education has instigated a paradigm shift in A

resistance to the integration of Educational Technology (EdTech) in educational settings has emerged from various sources, each shedding light on the complexities of this transition.

pedagogical strategies, bringing with it promises of innovation along with pockets of resistance. First, the disruption of comfort zones poses a significant challenge. Traditional teaching methods have become deeply ingrained and familiar to both educators, and students. The introduction of EdTech requires a departure from these established norms, unsettling the comfort zones that have been cultivated over time, and potentially triggering resistance [9]. . Educators may experience anxiety about the effectiveness of new methods, and their own proficiency in navigating digital tools.

Second, the constraints of time and training play a pivotal role in resistance. Effectively incorporating EdTech tools into teaching and redesigning courses to accommodate them demands a substantial investment of time and effort. Faculty members, often contending with busy schedules and limited technological backgrounds, might perceive this undertaking as burdensome and may resist change due to these challenges [10].

Third, concerns surrounding the integrity of pedagogy contribute to resistance. Educators might apprehend that technology-driven approaches could compromise the authenticity of pedagogical practices. The fear of trading off deep engagement, critical thinking, and meaningful interaction for the allure of technological novelty can trigger skepticism and resistance among educators [4]. These sources of resistance highlight the multifaceted nature of challenges that must be addressed to facilitate the successful integration of EdTech in education.

### **Accessibility**

The integration of EdTech in higher education offers not only innovative learning opportunities but also enhances accessibility and inclusivity for diverse learners, including those with physical disabilities or geographical constraints [11] . By bridging geographical distances and physical limitations, EdTech enables students from various backgrounds and locations to access educational resources and courses [11]. Additionally, EdTech can be customized to accommodate diverse learning styles and needs [12]. However, challenges remain. Students with limited access to devices, internet connectivity, or digital literacy skills can be left behind, exacerbating existing inequalities [7]. To achieve inclusive education, bridging the digital divide is paramount [13]. Ensuring EdTech platforms are designed with accessibility in mind is equally crucial [14]. Adapting teaching methods to embrace diverse learning needs can also be challenging [15]. As institutions and educators embrace these challenges, they have the opportunity to reshape education into a more inclusive, equitable, and empowering endeavor, enabling all learners to thrive in the digital age [16] .

## **2. Opportunities**

### **A. Personalized Learning Pathways: Nurturing Individual Growth**

This is a paradigm that tailors educational experiences to the unique needs, preferences, and progress of each learner so that institutions can employ them to harness its transformative power.

Personalized learning allows students to advance at their own pace, ensuring that learners who grasp concepts quickly are not held back, while those who need more time receive the necessary support [17]. This flexibility fosters a more comfortable and effective learning environment. EdTech enables the delivery of customized content that aligns with students' learning styles, prior knowledge, and interests. Adaptive learning systems can dynamically adjust the complexity and type of content, optimizing engagement and understanding [18]. When students have agency in their learning journeys, they are more likely to be engaged and motivated. Personalized learning encourages ownership of the learning process, fostering a sense of empowerment and self-directed exploration.

On the other hand, Personalized learning relies on the collection and analysis of student data, which broaches the concerns regarding privacy and data security. Striking a balance between data utilization for educational enhancement, and safeguarding individual privacy is crucial [19]. While personalized learning holds promise, disparities in access to technology and reliable internet can exacerbate educational inequalities [20]. Ensuring that all students, regardless of their socioeconomic background, can benefit from personalized approaches is paramount. A plethora of digital resources and learning pathways can overwhelm students, making it challenging to discern the most effective options. Providing guidance and curating resources that align with learning objectives can mitigate this challenge.

When it comes to the Implementation Strategies, Institutions can utilize learning analytics to gather insights into students' performance, engagement, and learning preferences. This data forms the foundation for tailoring learning experiences to individual needs. Adaptive learning technologies use algorithms to adjust content and assessments based on students' responses and progress. Implementing such platforms can provide real-time feedback and adaptivity, which enhances comprehension (Vanderbilt University, n.d.). Designing clear learning pathways with customizable options empowers students to make informed decisions about their educational journey; just as offering a variety of paths and resources allows learners to align their education with their aspirations. Moreover, fostering a collaborative environment where educators and students co-create learning plans enhances the effectiveness of personalized learning; whereas regular communication ensures that learning objectives are met, while addressing any challenges that arise [21].

Personalized learning pathways, powered by EdTech, have the potential to revolutionize education by placing students at the heart of their learning journeys [11]. By leveraging technology to tailor content, pace, and engagement strategies to individual needs and preferences, institutions can foster a more engaging, effective, and inclusive educational experience [22]. Challenges remain, however, as concerns about data privacy, equitable access, and student choice must be carefully addressed [23]. Nevertheless, a well-structured and thoughtfully implemented personalized learning approach has the power to empower students to achieve their full potential, equipping them with the skills and knowledge needed to thrive in the dynamic landscape of twenty-first century education [16].

## **B. Skill Development for the Digital Age: Equipping Learners for Tomorrow**

In an era characterized by rapid technological evolution (World Economic Forum, 2023), Educational Technology (EdTech) serves as a catalyst for fostering a new set of skills indispensable for success in the digital age. This section delves into the critical role of EdTech in cultivating skills that prepare learners for the dynamic demands of the modern world, the challenges that come with this transformation, and the strategies that ensure comprehensive skill development.

Digital literacy, a cornerstone of this skillset, goes beyond basic computer skills, encompassing information evaluation, online communication, and ethical online behavior [11]. EdTech platforms can be designed to encourage analytical thinking and problem-solving [22]. By offering interactive simulations, data analysis tools, and collaborative projects, EdTech prompts learners to think critically, assess information, and devise creative solutions [23]. Online collaboration tools, virtual group projects, and discussion forums foster the development of teamwork, communication, and interpersonal skills in a digital context.

Challenges arise in identifying precise skills needed for the digital age, in managing the influx of EdTech tools without losing focus on skill acquisition, and in ensuring the transferability of digital skills to real-world contexts. Strategies for skill development include integrating digital skills across disciplines, engaging in project-based learning, and instilling a lifelong learning mindset [12].

In conclusion, the integration of EdTech into education transcends technological implementation; it is a conduit for nurturing the skills that learners require to thrive in an increasingly digitized world. By strategically developing digital literacy, critical thinking, collaboration, and adaptability, institutions empower learners to navigate the complexities of the digital age. As educators leverage EdTech to cultivate these skills, they contribute to a generation of learners poised to not only embrace technological change, but also harness its transformative potential for personal and societal growth.

### **Research Methodology**

This study employs a survey design in conjunction with a correlational research approach to explore university students' and graduates' perceptions of the challenges and prospects brought about by Educational Technology (EdTech). By combining these methodologies, quantitative data is gathered through surveys, enabling the examination of relationships between variables to identify potential correlations. A convenience sample of 486 participants from various academic backgrounds voluntarily participated in the survey, which was conducted anonymously. The survey instrument, comprising multiple-choice questions and Likert-scale items, was tailored to elicit information on participants' academic backgrounds, familiarity with EdTech tools, perceived challenges, and opportunities. Data collection occurred online via a secure survey platform, with distribution facilitated through university email lists, social media groups, and relevant online forums. Descriptive statistics, including frequencies, means, and standard deviations, were computed to summarize demographic information and assess familiarity with

EdTech tools. Correlation coefficients were calculated to investigate relationships between exposure to EdTech tools and perceived challenges and opportunities, with a positive correlation suggesting higher exposure correlates with more perceived opportunities and challenges. Ethical considerations were paramount, with participants assured of anonymity, confidentiality, and the voluntary nature of their involvement, and informed consent was obtained from each participant before survey commencement.

**Table 1. Table Showing the Reliability Statistics**

Cronbach's Alpha	N of Items
.854	60

## RESULTS

### Demographics of the Sample:

The sample is comprised of participants with diverse demographic characteristics. Among them, 29% fell within the age range of 31-40, while 27% were aged between 22-30. A significant portion, 18.4%, belonged to the age range of 18-21.

Although the majority of the respondents were in the age range of 22-40, 28.6% of the participants were not engaged in any work activities.

For those who are working, 42% of them have 10+ years of experience, whereas 34% have less than 5 years of experience.

Gender distribution within the sample indicated that 84.2% were females, therefore highlighting predominantly female participation.

Regarding educational qualifications, 43.3% of the participants held a Bachelor's degree, while 33% had pursued a Master's degree. Notably, 5.3% of the participants possessed a doctorate level of education.

The participants' fields of study or majors varied, with the highest representation in the field of education and training at 28.5%. Agriculture constituted 11.4% of the sample, followed by 9.4% in computer and information sciences. These diverse backgrounds enriched the sample's composition and perspectives.

### How did EdTech help at the personal level?

The analysis of the responses concerning how technology has assisted at the personal level reveals a notable trend towards agreement, particularly in the *Agree* and *Strongly Agree* categories. The data reflects the following numerical breakdown:

- **Feeling Connected:** A substantial percentage, totaling 61.5% agreed that technology helps them feel connected to other learners, which highlights the role of technology in fostering a sense of community among peers.
- **Connection to Experts:** Similarly, 64.7% acknowledge that technology facilitates connections with experts, indicating its value in bridging the gap between learners and subject-matter authorities.
- **Seeking Learning Support:** For the aspect of seeking learning support, 57.6% express their agreement in utilizing technology to ask questions related to their learning, showcasing its role in facilitating collaborative and interactive learning experiences.
- **Building Relationships:** About 54.5% (186+96) indicate that technology aids in developing relationships beyond their immediate community, illustrating its capacity to broaden horizons and facilitate networking.
- **Project Completion:** A substantial 54.5% find that technology enables them to complete tangible projects, suitable for highlighting in portfolios or resumes, emphasizing its role in practical skill development.
- **Reflective Practice:** The concept of reflective practice also resonates, with 54.8% acknowledging technology's role in enabling them to reflect on how to improve projects in the future, showcasing its impact on iterative learning processes.
- **Personalized Learning:** The notion of personalized learning is well-received, as 53.6% indicate that technology allows them to learn at their own pace, underlining its adaptability to individual learning preferences.
- **Access to Learning Materials:** About 58.1% find technology instrumental in accessing learning materials that align with their personal interests, highlighting its role in catering to diverse preferences.
- **Obstacles Reduction:** The role of technology in reducing obstacles to learning compared to formal settings is affirmed by 55.7%, indicating its potential for minimizing traditional learning constraints.
- **Goal Setting and Strategy Development:** A considerable 59.7% (202+80) agree that technology supports setting learning goals for themselves, while 59.3% find it helpful in determining strategies to complete learning tasks, indicating its value in fostering self-directed learning approaches.

**Is there a significant correlation between the perceptions of the potential of Educational Technology (EdTech) at the personal level, and the age and gender of the participants in higher education?**



**For gender**

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
How technology helped you at the personal level?	Male	55	5.0364	1.24668	.16810
	Female	317	5.0820	1.11926	.06286
sum_q10	Male	55	53.0182	12.01926	1.62068
	Female	317	53.2461	11.20985	.62961

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper	
How technology helped you at the personal level?	Equal variances assumed	.021	.885	-.274	370	.784	-.04566	.16634	-.37274	.28143
	Equal variances not assumed			-.254	69.926	.800	-.04566	.17947	-.40361	.31230
sum_q10	Equal variances assumed	.027	.870	.138	370	.891	-.22787	1.65520	-3.48266	3.02691
	Equal variances not assumed			.131	71.252	.896	-.22787	1.73868	-3.69449	3.23874

Upon conducting t-test analysis, it was found that there were no statistically significant differences observed between genders in all analyzed questions, with all significance values being greater than 0.05. While females generally reported slightly higher mean scores compared to males across most items measuring the personal benefits of Educational Technology (EdTech), including feeling connected to other learners, experts, seeking learning support,

developing relationships outside immediate communities, completing projects for portfolios or resumes, reflective practice, personalized learning, accessing learning materials of interest, reducing obstacles to learning, setting learning goals, and determining strategies to complete tasks, the only statistically significant difference ( $p < 0.05$ ) was identified for "learning at my own pace," where females scored an average of 0.19 points higher. This suggests that females may prioritize flexible and self-paced learning environments more than males, possibly influenced by various factors such as individual learning styles, societal expectations, or educational experiences. Further analysis through a series of chi-square tests across various dimensions also revealed no significant relationship between gender and the perceived personal benefits of technology use for learning, including feeling connected to other learners, experts, seeking learning support, developing relationships outside immediate communities, completing projects for portfolios or resumes, reflective practice, personalized learning, accessing learning materials of interest, reducing obstacles to learning, setting learning goals, and determining strategies to complete tasks. These findings collectively suggest that gender does not significantly shape individuals' perceptions of how technology aids them at the personal level across various dimensions of learning and professional development.

**For age**

Descriptives									
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
sum_q10	18 - 21	68	51.2059	10.53574	1.27765	48.6557	53.7561	23.00	66.00
	22 - 30	107	54.0374	9.67971	.93577	52.1821	55.8926	16.00	66.00
	31 - 40	105	54.8476	11.47806	1.12014	52.6263	57.0689	11.00	66.00
	41 - 50	76	53.1711	12.52026	1.43617	50.3100	56.0321	11.00	66.00
	above 50	19	47.9474	14.33904	3.28960	41.0362	54.8586	20.00	64.00
	Total	375	53.2667	11.29116	.58307	52.1202	54.4132	11.00	66.00
How technology helped you at the personal level?	18 - 21	68	4.9118	1.07530	.13040	4.6515	5.1720	2.00	6.00
	22 - 30	107	5.1589	1.00141	.09681	4.9669	5.3508	1.00	6.00
	31 - 40	105	5.2190	1.14338	.11158	4.9978	5.4403	1.00	6.00

	41 - 50	76	5.0921	1.21301	.13914	4.8149	5.3693	1.00	6.00
	above 50	19	4.4737	1.50438	.34513	3.7486	5.1988	2.00	6.00
	Total	375	5.0827	1.13575	.05865	4.9673	5.1980	1.00	6.00

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
sum_q10	Between Groups	1153.080	4	288.270	2.292	.059
	Within Groups	46528.254	370	125.752		
	Total	47681.333	374			
How technology helped you at the personal level?	Between Groups	11.614	4	2.903	2.282	.060
	Within Groups	470.824	370	1.272		
	Total	482.437	374			

This study explored how individuals from different age groups perceive Educational Technology's (EdTech) personal-level benefits. While common ground emerged in appreciating EdTech's potential for connection, collaboration, and self-directed learning, interesting age-related differences were also observed.

**Universal Value:**

**Social Connectivity and Expert Knowledge:** Regardless of age, individuals valued EdTech's ability to foster connections with peers and access expert knowledge, highlighting its potential to support collaborative learning and break down educational barriers.

**Personalization and Autonomy:** Setting learning goals and asking questions freely held equal value across age groups, demonstrating EdTech's potential to promote learner autonomy and self-directed learning.

**Generation Gaps:**

- **Social Connections and Career Development:** Younger individuals (18-30) found increased value in building connections beyond their immediate circles and showcasing work in portfolios, reflecting their unique social media usage and career development stage.
- **Metacognition and Learning Pace:** While not statistically significant, a trend suggests younger individuals perceive EdTech's value for reflection more strongly, aligning with research on their openness to metacognitive strategies. They also prioritized personalized learning and finding engaging materials compared to older groups.
- **Overcoming Barriers and Learning Strategies:** Younger individuals perceived EdTech as more effective in overcoming learning barriers and identifying learning strategies, possibly due to their experiences with traditional education or familiarity with technology-based solutions.

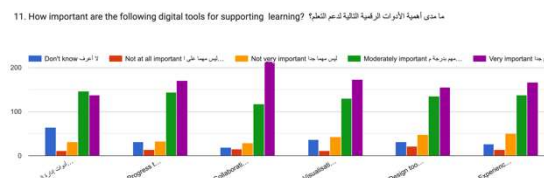
Statistical Findings:

The study used chi-square tests and crosstabulations to confirm statistically significant age-related differences in perceived benefits for:

- Feeling connected to experts
- Completing projects for portfolios or resumes
- Reflecting on project improvement
- Accessing engaging learning materials
- Reducing learning barriers
- Setting learning goals
- Determining learning strategies

Overall, while some core EdTech benefits transcended age differences, younger individuals showed stronger preferences for specific areas like social connections, career development, reflection, personalized learning, and overcoming barriers. These findings suggest tailoring EdTech offerings and educational approaches to cater to distinct generational preferences and enhance learning experiences for all.

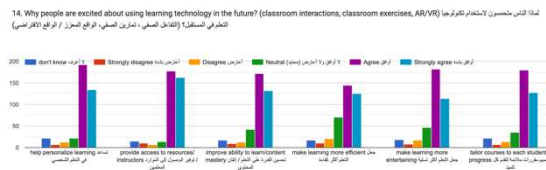
**D. What is the Importance of Digital Tools to Support Learning?**



The study delves into the significance of various digital learning tools across different fields of work, revealing nuanced preferences and their implications. Resource management and organizational tools, such as Evernote and Microsoft OneNote, were deemed moderately to very important by 51.6% of participants, highlighting their utility in structuring learning materials and enhancing organization. However, the analysis found no statistically significant correlation between field of work and the importance attributed to these tools ( $p = 0.476 > 0.05$ ), suggesting potential trends warranting further investigation with larger samples. Similarly, progress tracking

tools and reminder apps, including Toggl and Google Calendar, garnered moderate to high importance from 58.5% of respondents, reflecting their value in monitoring learning progress and time management. Yet, like resource management tools, no significant relationship was found between field of work and the importance of these tools ( $p = 0.492 > 0.05$ ). Collaboration tools like Google Drive and Microsoft SharePoint were considered particularly crucial by 66.5% of participants for group projects and knowledge sharing, yet no statistical significance was observed between field of work and their importance ( $p = 0.640 > 0.05$ ). Visualization tools, such as MindMeister and Lucidchart, were valued by 65.5% of participants for aiding comprehension, yet the chi-square test did not find a significant relationship with field of work ( $p = 0.118 > 0.05$ ), though a moderate positive association was noted. In contrast, design tools like Adobe Photoshop and Sketch were acknowledged by 56.4% of participants for enabling creative expression, with a statistically significant relationship ( $p = 0.017 < 0.05$ ) indicating varied importance across work fields. Lastly, experience and resource-sharing tools like Twitter were recognized by 54.9% of respondents for facilitating knowledge dissemination, yet no significant association was found with the field of work ( $p = 0.336 > 0.05$ ). Notably, respondents' unfamiliarity with certain tools underscores the need for greater awareness. Overall, while limited statistically significant variations were observed in tool preferences across work fields, design tools stood out as having a significant difference in perceived importance, suggesting varying valuations among professions.

### E. Why are people excited about using learning technology in the future (classroom interactions, classroom exercises, AR/VR)?



The analysis unveils a prevalent positive sentiment towards learning technology among participants, with a substantial majority expressing agreement or strong agreement regarding its benefits, indicating a readiness to adopt technology to enhance learning experiences. Notably, personalized learning garnered agreement from 77% of participants, signifying a belief in technology's capacity to tailor learning experiences to individual preferences, potentially enhancing engagement and outcomes. Additionally, 82% of participants highlighted the importance of technology in overcoming geographical barriers, providing access to diverse learning resources and expert instructors. Moreover, 73% acknowledged technology's role in facilitating deeper understanding and knowledge retention through interactive methods and assessments, while 71% recognized its potential to streamline learning processes, improving efficiency and engagement. Furthermore, 74% of participants emphasized technology's capability in progress tracking and adaptability, enabling personalized learning paths and fostering self-directed learning strategies. These findings underscore a widespread recognition of

technology's transformative potential in education, reflecting a shift towards embracing technology as a fundamental tool for enriching learning experiences.

### Implications

The implications for educators and institutions are manifold. Firstly, educators can leverage technology to develop personalized learning pathways that cater to individual needs and learning styles, thereby enhancing engagement and outcomes. Secondly, by utilizing online platforms and collaborative tools, institutions can expand resource access, connecting learners with diverse resources and expert instructors beyond geographical limitations. Thirdly, adopting interactive learning strategies through technology-based activities and assessments can foster deeper engagement and improve knowledge retention. Moreover, integrating technology into learning processes can streamline workflows, optimize efficiency, and enable better time management and increased productivity. Additionally, technologies that track progress and adapt instruction can provide personalized feedback and support, promoting self-directed learning and growth. The study's findings also suggest that preferences for digital learning tools generally do not significantly vary across different fields of work, except for design tools, indicating the importance of considering a diverse range of digital tools in educational settings. The prominence of design tools in certain professions underscores the significance of integrating design thinking principles into educational practices. Furthermore, the study underscores the importance of tailored educational approaches that recognize and cater to the preferences and needs of both male and female learners. The higher mean scores reported by females across various items suggest that they may particularly value aspects such as feeling connected to peers and experts, reflecting on project improvement, and setting learning goals. Therefore, educators can incorporate collaborative learning activities, opportunities for reflection, and goal-setting exercises into their instructional designs to better engage female learners. Additionally, addressing gender disparities in EdTech adoption is crucial, as observed gender differences in the perception of personal benefits highlight the need for equitable access to EdTech resources and opportunities for all learners. Policymakers, educators, and technology developers should work collaboratively to bridge the digital divide and empower learners to fully leverage the benefits of educational technology. Finally, the findings underscore the multifaceted role of technology in enhancing various aspects of the learning experience, from fostering social connectivity and collaborative learning experiences to supporting personalized learning approaches and overcoming traditional learning constraints.

### Conclusion

This research underscores the transformative power of Educational Technology (EdTech) in reshaping the learning experience for university students and graduates across diverse demographics. EdTech transcends physical and temporal limitations, fostering **active engagement and community building** through interactive platforms and collaborative tools. Our findings reveal a **growing sense of connection and support** among students towards these

advancements, coupled with **increased comfort and confidence** in utilizing them for effective learning. This highlights the **empowering role** of EdTech, enabling students to **take ownership** of their learning journeys and navigate the dynamic landscape of modern education.

Furthermore, EdTech's contributions to **engagement, access, and personalized learning** pave the way for **greater academic progress and success**, solidifying its position as a **crucial step** towards a future-proof educational landscape. This analysis importantly reveals that **gender is not a statistically significant factor** influencing overall perceptions of EdTech's potential. This suggests that individuals across diverse fields and backgrounds generally share similar views on its value and capabilities in supporting learning.

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