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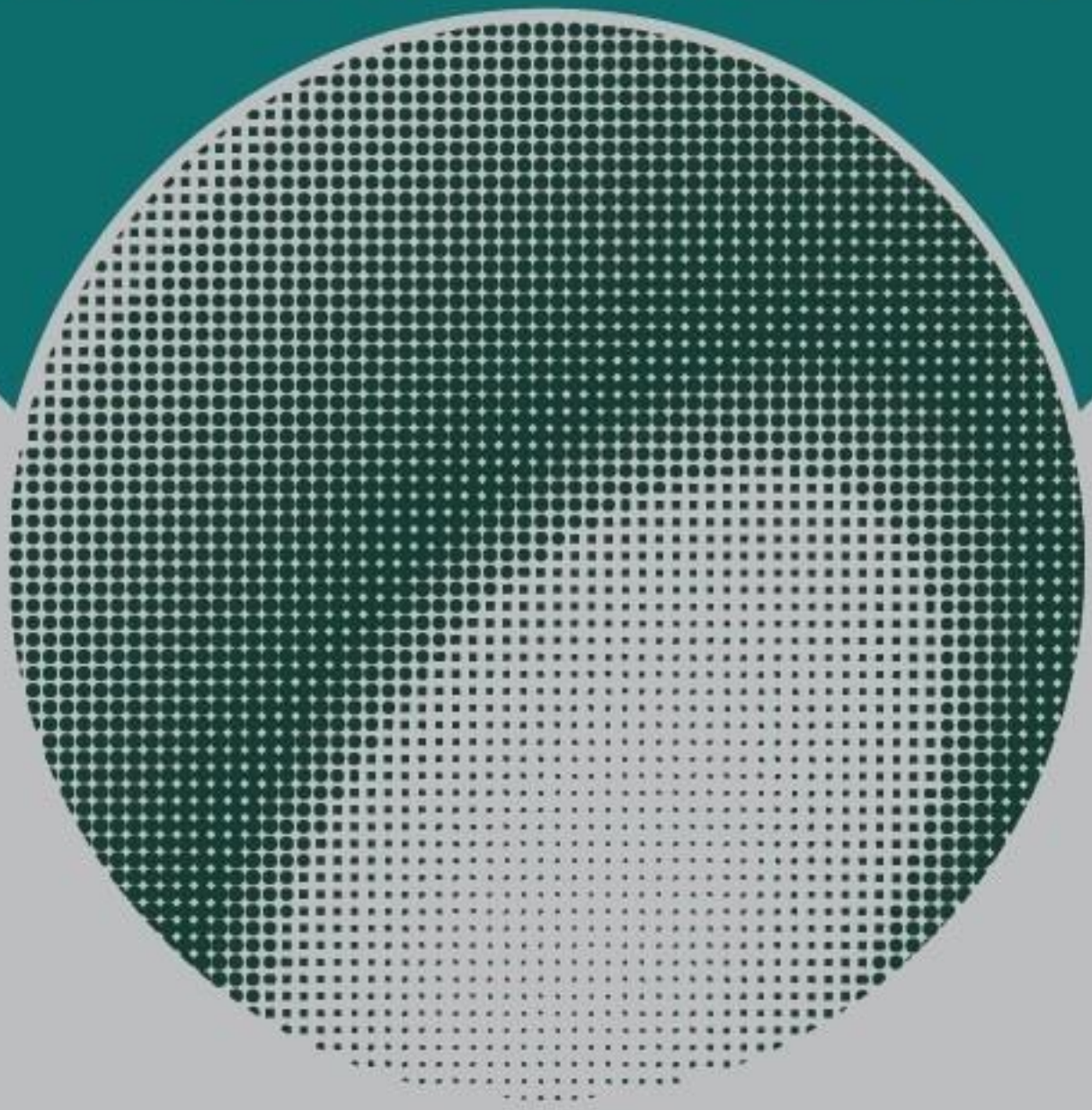

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Complaint
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International Journal of Contemporary Educational Research

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The Relationship Between Teachers' Intergenerational Knowledge Sharing and Schools' Learning Organization Profiles

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Abstract
The study aims to explore the relationship between teachers' perceptions of intergenerational knowledge sharing and the learning organization profile of schools. This study employed a correlational research design. The data were collected through "Intergenerational Knowledge Sharing Scale" and "Learning Organization Profile Scale". Data were collected using online survey. A total of 683 teachers participated in the survey and after removing outliers, 636 responses were analysed. The research findings indicate teachers' perception level of the intergenerational knowledge sharing and level of organizational profile of school's variables are above the moderate level. The results of correlation analysis showed a low but significant relationship between the levels of knowledge sharing across generations and the learning organization profile of schools.

Keywords: Intergenerational knowledge sharing, Learning organization, Learning, Teacher, Generation.

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Introduction

Recent developments have led many organizations to understand the needs of both older and younger employees. This understanding extends not only to knowledge needs, personal characteristics, and learning habits but also to various contingencies and situational issues. Consequently, we have begun developing various opportunities for intergenerational knowledge sharing. Organizations can choose options that combine both social and technical approaches to sharing knowledge, enable the exchange of both explicit and tacit knowledge. Technical approaches are often invaluable in conveying explicit knowledge that can be used as needed, whereas social approaches are better suited for conveying tacit knowledge (Rupčić, 2018).

Today's workplace comprises of different generations, including baby boomers generation and members of generation X, generation Y, and generation Z. These groups use their experiences and knowledge within the organization to shape their own career paths (Rupčić, 2018). The lack of willingness of employees of different ages to share knowledge is costly for companies (Fasbender, Gerpott & Unger, 2021).

The term “generation” was first mentioned as a concept by the German Sociologist Karl Mannheim in a book written in 1928 (Taylor, 2008). When the literature is examined, it is observed that scientists have not reached a clear consensus on the age ranges and names of generations. One of the most common classifications today is as follows: 1925-1945: The Silent (Traditional) Generation, 1946-1964 Baby Boomers Generation, 1965-1980 Generation X, 1981-2000 Generation Y, 2000 and beyond Generation Z. Each generation has different characteristics due to the period in which it was born and grew up and the environmental conditions. Having individuals with different values, beliefs and attitudes in the same organization not only creates opportunities for these organizations, but also presents risks. Transforming these risks into opportunities by analyzing them correctly and increasing knowledge sharing can be considered extremely important for organizations. One of the most important aspects of continuity that must be ensured by organizations is knowledge sharing between generations. In fact, since the 1990s, it has been predicted that the aging population will have an impact on organizations and management practices, and today these predictions have become a reality (Drucker, 1993).

Schools are among the few places where all generations come together. Therefore, the faculty composition in schools reflects intergenerational diversity. Generational diversity has many benefits for schools because it allows school members to exchange and discuss different perspectives. Intergenerational diversity can enhance the intergenerational learning ability of all school generations through intergenerational knowledge sharing. As intergenerational learning capacity increases, so does the level of learning organization in schools.

The improvement of schools relies upon on their cappotential to increase and make use of human resources, specifically and knowledge. School improvement relies upon at the cooperative and synergistic efforts of all school individuals. A school has no ability for improvement except its individuals increase powerful relationships to acquire, share, and make use of knowledge.

Every generation has unique contributions. While younger digital natives may have more knowledge about information and communication technologies, senior members of the organization may have gained deeper insight into the relationships and leverage points of business systems. Therefore, for organizations to continuously learn and survive, building cross-generational collaboration is paramount and depends on knowledge sharing. On the other hand, the value of intergenerational cooperation must be embedded withinside the organizational way of life to make certain that interactions are characterised through respect, dignity and mutual understanding (Rupčić, 2018).

Literature review

Intergenerational Knowledge Sharing

Knowledge transfer is a “dual exchange of organizational knowledge between a source and a receiving entity” that involves the provision of knowledge by a source and the acquisition, retention, and use of knowledge by a receiver (Szulanski, 1996). Intergenerational knowledge transfer is an active, reciprocal process where both tacit and explicit knowledge are shared among individuals from different age groups (Harvey, 2012). This type of knowledge transfer encompasses both the dissemination and assimilation of insights among younger and older employees within a workplace (Wang et al., 2017). The concept of knowledge transfer is categorized into two forms: the exchange of knowledge among peers and the transfer of knowledge across different generations (Kalkan, 2006).

In intergenerational knowledge transfer, the focus is on vertical knowledge transfer between generations of employees. This consists of his activities: know-how contribution and know-how acquisition (Kalkan, 2006; Wang et al., 2017; Burmeister et al., 2020). Intergenerational knowledge transfer can be identified by three axes sustainability of intergenerational relationships, responsibility for knowledge acquisition, and knowledge sharing (Kuyken et al., 2018).

Professional age may require younger employees to expand their knowledge, while older employees are typically experts in specific areas of the organization. Young professionals can actively ask questions of older professionals, receive feedback, and gain experience on the job. Through these intergenerational knowledge transfer activities, young workers can expand their existing knowledge (Mannucci and Yong, 2018). Elder employees can share their proficiency in organizational processes with younger colleagues (Fasbender and Gerpott, 2021). While younger employees impart technical knowledge, senior managers often play the role of teachers who challenge the mental models of their colleagues and engage in continuous learning (Senge, 1990). Therefore, intergenerational knowledge transfer is important for younger generations to enrich their knowledge base and innovate within organizations.

Knowledge sharing involves communicating information between people in order to use existing knowledge to improve the performance of the group. Davenport and al., (1997) defined knowledge sharing as a voluntary behavior by separating it from the act of reporting. While reporting is an information exchange that includes a set of structured formats and routines, sharing refers to a behavior in which individuals contribute willingly without any coercion to the parties (Davenport et al., 1997).

Learning Organization

The concept of "Learning Organization", which was first used by Peter Senge in his work "The Fifth Discipline" in 1990, is widely used today. Senge defined the learning organization as “a group of people who work together to develop their capacity and to create results that they truly care about” (Fulmer & Keys, 1998). Senge (1990) introduced the component technologies (disciplines) necessary for learning organizations in the Fifth Discipline. These components are systems thinking, individual mastery, shared vision and learning, mind models as a team (Senge, 1990). In the literature, there are various definitions of learning organisations. A learning organization can discover its power and has the capacity to use this power (Genc, 2004). The phenomenon of learning organization means that the organization works as a kind of collective intelligence. Although the organization is considered as a complex and living organism, it is noted that the personal learning of individuals evolves into organizational learning. Karash (2002) also defined the learning organization as continuous and capacity building activities to achieve desired results at any level individually and as a group. According to Mohanty and Kar (2012), a learning organization constantly expands its capacity to build its future. Learning organizations are organizations that always see learning as the most important element, aim for the continuous development of individuals in the organization, accept communication as a permanent prerequisite, and where the sharing of opinions and information for sustainable development is effective (Koçel, 2003). A learning organization is an organization that can bring into open, acquire and transfer knowledge and change its behavior to create new knowledge. Organizations that can be successful in the future are those that have the potential and desire for individual learning and organizational learning, as well as those that can produce valid and reliable information and apply it to new areas. It is not enough for organizations to learn only certain stereotypes. They need to be able to produce new knowledge, apply their existing knowledge and experience to new fields, and use their knowledge as a production item. Learning organizations are organizations that are seen as a natural process. There are various features that make learning organizations different from other organizations. In learning organizations, the act of learning is not an addition to the work, on the contrary, it is a normal part of the work. Collaboration is at the core of all relationships between individuals in learning organizations. All individuals involved in the organization, while improving the basic components that form the learning organization. According to Yeo and Marquardt (2010), it is fostering a collaborative learning environment, establishing formal and informal learning processes, and reinforcing learning through effective human resource management practices.

In order for a school to become a learning organisation, it’s essential that humans dare to innovate of their day by day practice. When a school becomes a learning organisation, it helps and protects folks who take risks, and rewards them for it. It additionally expects that humans will maintain an open thoughts approximately new methods of doing things. Teachers are consequently helped to triumph over the uncertainties and isolation of conventional coaching thru open and collegial dialogue, replacing thoughts and sharing experiences, struggling with troubles and techniques, and through experimenting. As learning organisations, schools have structures in location to make certain they are “information-rich” or, extra appropriately, “knowledgerich”. Information isn't always knowledge;

it takes social processing withinside the school context to carry information to life. So, for a learning tradition to emerge, schools as learning organisations want to create the systems for normal talk and knowledge sharing amongst staff (Kools & Stoll, 2016).

Schools as learning organizations ,the link between staff's personal and interpersonal learning and the way schools learn collectively is considered to be the key to success and change (Giles & Hargreaves, 2006). For schools to become learning organizations, it is important that people boldly innovate in their daily practices. As learning organizations, schools therefore support, protect and reward those who take risks. Schools as learning organizations expect people to be open to new approaches (Kools & Stoll, 2016).Teachers can therefore overcome the uncertainty and isolation of traditional education through open dialogue, the exchange of ideas and experiences, discussion of topics and techniques, and experimentation. Bringing information to life requires social processing within schools. Schools as learning organizations need to create structures for regular dialogue and knowledge exchange among employees for a learning culture to emerge (Kools & Stoll, 2016). For schools to foster and maintain effective teacher development, it's essential to cultivate practices and processes characteristic of a learning organization (Opfer & Pedder, 2011). The traits of a school functioning as a learning organization, as outlined by Kools & Stoll (2016), include:

- Cultivating and disseminating a student-centered learning vision
- Providing continuous learning opportunities for educators
- Encouraging collaborative learning and teamwork among faculty
- Promoting a culture of innovation and inquiry through research
- Enabling the collection and exchange of knowledge and educational insights within the system
- Engaging in learning activities that incorporate external environments and the broader educational framework
- Demonstrating and nurturing leadership in learning

When we look at these dimesions, we can see that there is a direct connections between sharing knowledge and learning organisations.

The relationship between intergenerational knowledge sharing and the learning organization

Knowledge sharing, which is be defined as the search for functional information or the transfer of ideas within organizations, requires communication and interaction among individuals within the same organization. According to Hendriks (1999), knowledge sharing requires a relationship between at least two parties, one who needs the information and the other who has the information. In organizations, individuals continually create and share knowledge, making knowledge sharing is considered a spontaneous activity (Hendriks, 1999).

Nonaka and Takeuchi (1995) argue that knowledge dissemination is essential to building a learning organization where knowledge becomes a strategic asset of the organization. In particular, Tempest (2003) emphasizes the intergenerational transfer of knowledge based on individual and organizational memory. We define knowledge transfer as the transfer of skills related to specific tasks and tacit knowledge, including appropriate organizational behavior and overall decision-making skills, which encompass culture, organizational politics, and acceptable leadership styles. Additionally, it involves the transfer of experiential knowledge. The transfer of tacit knowledge is critical to organizational survival as older generations step away from leadership positions and younger generations assume such roles (Sprinkle and Urick, 2018).

Knowledge transfer is a crucial component of an organization's learning mechanisms (Easterby-Smith and Lyles, 2011). Lately, there has been a growing recognition among organizations of the importance to pinpoint and foster additional avenues for building knowledge across generations (Gerpott et al., 2017).

Therefore, the exchange of knowledge between older and younger employees is highly relevant to the organization's collective memory and contributes to business success (Fasbender, Gerpott & Unger, 2021). Intergenerational knowledge transfer plays an important role in organizational learning. Numerous evolving learning organizations are concentrating on establishing what are known as learning and practice communities. These communities are pivotal in enriching the learning experience, boosting learning adaptability, and elevating organizational practices. The growth of effective practice and learning communities is contingent upon the fortification and enhancement of intergenerational bonds and reciprocal learning. Consequently, it is evident that the methodologies and strategies examined thus far are instrumental not only in bolstering intergenerational unity but also in fostering robust learning and practice communities (Rupčić, 2018).

Nonaka and Takeuchi (1995) stated that the best way to create organizational knowledge is to transfer and transform knowledge. In order to provide learning at the organizational level, it is necessary to create the capacity to store knowledge, support the creation process of knowledge, constantly transform and transfer knowledge (Watkins & Golembiewski, 1995). Knowledge sharing that occurs through the interaction of individuals with different demographic characteristics also includes the concept of intergenerational learning.

When employees retire, it is undesirable situation for organizations to lose their accumulated experiences and knowledge. This phenomenon can mean loss of information and transferring information is vital for the continuity of the organization. At this point, it can be said that it is highly important for organizational learning that previous generations share their knowledge with new employees or employees with less experience than themselves. In this way, members of the organization can learn from each other, make innovations, and as a result, they can combine their experiences and knowledge to increase organizational performance (Hambrick et al., 1996). Therefore, sharing the knowledge of individuals from different generations in the same organization can play an important role in increasing the level of organizational learning and in the formation of a learning organization philosophy.

When considering schools as the primary sites for the dissemination and production of knowledge, their capacity to function as successful learning organizations depends on their promotion of double-loop learning. This approach takes individual and organizational assumptions and goals into account, together with actions, behaviors, and outcomes, aiming to improve them (Töremen, 2011). This means that knowledge is shared in schools and gains value as knowledge is shared (Özen, Kutanis & Mesci, 2013). New developments and changes occur constantly in all areas, including technical, technological and social, and more importantly, a newer model of a product or a more comprehensive form of information emerges within very short periods of time, which can be expressed as days. Only teachers can create an organization that processes information and produces new knowledge. Teachers who stay away from the new developments and changes on the agenda for a while cannot renew themselves and cannot find the opportunity for personal/professional development. At this point, it is essential for teachers of the same branch to learn while producing knowledge together and to share the learned knowledge. Competition among teachers, whether in the same branch or not, should be about learning new knowledge, the knowledge should not remain hidden within the teacher itself, but should be shared in order to achieve the goals set by the school (Taşargöl, 2013).

Purpose of the Study

While numerous studies have delved into the concepts of intergenerational knowledge sharing and learning organizations, the nexus between these two phenomena, particularly in the context of schools, remains underexplored. This study aims to bridge this gap by examining the relationship between intergenerational knowledge sharing and the learning organization profile perceptions among teachers from different generations working in schools.

Research Question: Is there a significant relationship between the intergenerational knowledge sharing practices of teachers and the level of the learning organizational profile in schools?
This study seeks to provide valuable insights into this relationship, contributing to the broader discourse on educational development and organizational learning.

Method

Research Pattern

Correlational research design, one of the quantitative research designs, was preferred in the research. Correlation studies are studies in which the relationships that may exist between two variables or more variables are examined without any intervention to the existing variables (Büyüköztürk, et al., 2012). At this point, when intergenerational knowledge sharing among teachers and organizational learning levels of schools are considered as variables, a correlational research design deemed suitable for examining the relationship between these two variables.

Universe and Sample

The universe of the research includes the teachers working in the primary, secondary and high schools located in Gebze, Kocaeli during the 2020-2021 academic years. 3928 teachers are working in Gebze District of Kocaeli province in the 2020-2021 academic year. Sample of this paper consists of 683 teachers working in Gebze. For

sample selection, simple random sampling method was employed. This method involves selecting units by granting equal selection probability to each unit (Büyüköztürk et al., 2016).

Data Collecting Tools and Analysis

In this research, the "Learning Organization Profile Scale," developed by Bowen, Ware, Rose, and Powers (2006) and adapted to Turkish by Sahin, Cakır, and Oztürk (2014), was utilized. This scale includes 36 items with two components, the first being action and the second being sensitivity. The correlation value between the sub-dimensions of the scale was found to be 0.85. The Cronbach's alpha internal consistency coefficient for the scale was determined to be 0.96. The "Intergenerational Knowledge Sharing Scale," adapted from the “Information Sharing Behavior Scale: Scale Development and Validation” by Yi (2009), and consisting of 28 items and 4 factors in its original version, was adapted into Turkish by Çelik (2019). The Turkish version of the scale consists of 26 items and four sub-dimensions. Sub-dimensions; Written Contributions, Organizational communications, Personal interaction, Communities of practice. Scale reliability analysis test was performed and Cronbach's alpha (α) value was found to be 0.86. According to the results of the reliability analysis, the scale is described as reliable. In the data collection tool prepared in a five-point Likert type, optional items were graded in the categories of “(5) Strongly agree, (4) Agree, (3) Neither agree nor disagree, (2) Disagree, (1) Strongly disagree”.
To examine whether the data follow a normal distribution, skewness and kurtosis coefficients were analyzed. The calculations yielded the following results: for **Intergenerational Knowledge Sharing**, skewness = -0.45 and kurtosis = -0.23; for **Written Contributions**, skewness = -0.74 and kurtosis = 0.25; for **Organizational Communication**, skewness = -0.89 and kurtosis = 0.95; for **Personal Interaction**, skewness = -0.40 and kurtosis = -0.42; for **Application Communities**, skewness = -0.50 and kurtosis = 0.07; and for **Learning Organization Profile**, skewness = -0.95 and kurtosis = 0.71. According to Tabachnick and Fidell (2015), skewness and kurtosis values between -1.5 and +1.5 indicate that the data can be assumed to follow a normal distribution.
In the light of these findings, it can be statedthat the variables are normally distributed. The data obtained in the research are suitable for performing parametric tests. In addition, arithmetic mean, t-test and analysis of variance, correlation analysis and regression analysis were applied to the available data. When interpreting arithmetic means; the range of 1.00-1.80 was evaluated as “well below the average”, the range of 1.81-2.60 as “below the average”, the range of 2.61-3.40 as “average”, the range of 3.41-4.20 “above the average” and the range of 4.21-5.00 “well above the average” (Can, 2014). While interpreting the coefficients related to the correlation analysis of the research data; A value in the range of $.10 \leq r < .30$ for the correlation coefficient between the variables is “low level of relationship”, a value between $.30 \leq r < .50$ is “moderate relationship”, and a value of $r \geq .50$ is “high level” relationship” (Field, 2013).

Results and Discussion

Table 1 shows the arithmetic mean and standard deviation values of intergenerational knowledge sharing and its sub-dimensions -written contributions, organizational communication, personal interaction and practice communities. According to the statistical findings presented in Table 1, it is seen that the level of intergenerational knowledge sharing among teachers (M=4.15, Sd=0.56) is above the average. Written contributions among teachers (M=4.06, Sd =0.76) are above the average, organizational communication (M=4.10, Sd =0.72) is above the average, personal interactions (M=4.15, Sd =0.58) are above the average and the practice communities sub-dimension (M=4.25, Sd =0.57) is well above the average.

Table 1. Arithmetic mean and standard deviation values for intergenerational knowledge sharing and its sub-dimensions

Variables	M	Ss
Intergenerational Knowledge Sharing	4,15	0,56
Written Contributions	4,06	0,76
Organizational Communication	4,10	0,72
Personal Interaction	4,15	0,58
Application Communities	4,25	0,57

According to the data in Table 2, it is seen that the perception level of teachers regarding the level of learning organization profile (M=4.07, SD=0.59) is "above the average"

Table 2. Arithmetic mean and standard deviation values for the level of learning organization profile

Variable	M	Ss
Learning Organization Profile Level	4,07	0,51

When examining the correlational findings presented in Table 3, positive and very low-level significant relationship is observed between knowledge sharing between generations and the level of learning organization profile (r=.08, p<.05). No significant relationship was found between the learning organization profile and the sub-dimensions of intergenerational knowledge sharing, namely written contributions (r=.06, p>.05) and organizational communication (r=-.01, p>.05). There is a positive and very low-level significant relationship between the learning organization profile and the sub-dimensions of intergenerational knowledge sharing, namely personal interactions (r = .10, p > .05) and application communities (r = .14, p > .01).

Table 3. Pearson correlation analysis results

	1	2	3	4	5
1. Intergenerational Knwledge Sharing					
2. Written Contributions	,84**				
3. Organizational Communication	,87**	,84**			
4. Personal Interaction	,93**	,69**	,70**		
5. Application Communities	,75**	,39**	,39**	,77**	
6. Learning Organization Profile Level	,08*	,06	-,01	,10*	,14**

**p < ,01 *p < ,05

Upon analyzing the correlation coefficient between the predictor variable of intergenerational knowledge sharing and the predicted variable of the learning organization profile in Table 4, a low level of positive relationship is identified (R=0.079). The analysis findings suggest that knowledge sharing between generations significantly predicts the learning organization profile (R=0.079, R2=0.004, F(3.844)= 212,922, p<0.01). Intergenerational knowledge sharing explains 004% of the learning organization profile.

Table 4. Simple regression analysis findings on the prediction of learning organization profile between generations of knowledge sharing.

Predictor Variable	B	ShB	β	t	p
Constant	3,741	,17		22,04	,000
Intergenerational Knowledge Sharing	,080	,041	,078	1,961	,023*
R= 0,079 R2= 0,004					
F(3, 844)= 212,922 p= 0,000					

**p < ,01 *p < ,05

Statistical findings in Table 5 show the results of multiple linear regression analysis on whether the sub-dimensions of intergenerational knowledge sharing predict the profile of the learning organization. Written contributions, organizational communication, personal interaction, communities of practice sub-dimensions of the intergenerational knowledge sharing variable predict the profile of the learning organization at a low level positively (R= 0.187, R2= 0.035, p<0.01). The four sub-dimensions that belong to intergenerational knowledge sharing explain 035% of the learning organization profile.

According to the standardized regression coefficients, the order of importance of the predictive variables in terms of affecting the learning organization profile: organizational communication (β=-0.219), written contributions (β=0.169), communities of practice (β=0.137), and personal interaction (β=0.041).

Table 5. Multiple linear regression analysis findings on the prediction of the learning organization profile of intergenerational knowledge sharing sub-dimensions.

Predictor Variable	B	ShB	β	t	p

Constant	3,58	,162		22,098	,000
Writing Contribution	,113	,05	,169	2,269	,024*
Organizational Communication	-0,155	,055	-,219	-2,84	,005*
Personal Interaction	,036	,075	,041	0,477	,633
Application Communities	,122	,058	,137	2,125	,034*
R= 0,187 R2= 0,035					
F(5,701)= 168,308 p= 0,000					

**p < ,01 *p < ,05

Conclusion

When the results obtained from the findings are examined, it is observed that teachers' perception levels of intergenerational knowledge sharing are above the average. This outcome indicates that individuals do not put obstacles in front of theirselves in terms of intergenerational knowledge sharing in schools and knowledge sharing is realized in terms of intergenerationality. Teachers exchange knowledge with their colleagues from the lower or upper generations on the subjects that they think their knowledge is not sufficient. Although research studies on this subject are limited in the literature, Çelik (2019) presented in his study that knowledge can be exchanged between individuals from different generations in schools, and that teachers consult their colleagues from different generations on subjects they think they do not know.

Geeraerts, Vanhoof, and Van den Bossche (2018) identified in their study that knowledge sharing among the teachers of a school occurs on many subjects, and especially on which subjects teachers need knowledge that they think different age generations have (Geeraerts et al., 2018). According to the study conducted by Bidian and Evans (2018), information about the organization is continuously shared among individuals from different generations. Furthermore, there is no intergenerational difference in terms of the choice of knowledge sharing areas, whether in the workplace or outside it (Bidian & Evans, 2018). Individuals from each generation (Baby Boomers, Generation X, and Generation Y) mostly prefer to share knowledge face to face. Other communication tools, such as telephone, email, and messaging, are also utilized for knowledge sharing. Given that the teachers are together in the school environment during their working days, it can be stated that they are in an area where intergenerational knowledge sharing can occur. This space, offering opportunities for intergenerational knowledge sharing, can form spontaneously or with the contribution of school administrators. Individuals from different generations can gather in an area where they can interact and share knowledge. These areas can be social and cultural activities outside the school environment as well as meetings, seminars, study groups at school (Polat et al., 2019).

In the study conducted by Arslan and Yener (2016), it was posited that it is beneficial for schools when teachers share knowledge with individuals from different generations, regardless of whether they belong to different generations. They highlighted that open knowledge sharing within the school is facilitated through a set of instructions, instructions and informatics tools. (Arslan & Yener, 2016). However, more social contexts are needed 288os hare tacit knowledge. Sharing tacit knowledge is perceived as more challenging compared to sharing explicit knowledge. In this study, it is observed that the teachers' level of perception of intergenerational knowledge sharing is high, indicating that teachers actively share knowledge with their colleagues from different generations, demonstrating a willingness to share knowledge regardless of generational differences. Regarding the sub-dimensions of intergenerational knowledge sharing, the findings of this study present that teachers' written contributions dimension, organizational communication dimension and personal interaction dimension are above the average, but the communities of practice sub-dimension is well above the average. This suggests that intergenerational knowledge sharing is most effective when teachers engage in activities or collaborate as teams.

It has been noted that teachers' learning organization profile perception levels are above the average. Considering this result, it can be inferred said that teachers in schools have awareness of the learning organization and perceive their schools as learning organizations, contributing to the sustainability of the schools. The results are realized in an atmosphere where the methods and techniques to be used in the solution process of the problems are developed. In these organizations, learning is the lifestyle of the members of the organization (Koçel, 1993). A learning organization is likely to emerge, driven by procedural education curricula that promote individual learning and making learning activity a lifestyle (Atak & Atik, 2007). In a related study, it was concluded that teachers are not only informative but also participatory and learners when necessary. It was also observed that teachers were willing and willing 288os hare their knowledge and learn as a team (Toremen, 1999). However, when comparing the

findings of this research with those from a study by Polat and Kazak (2015), differences are observed. In a study on the views of primary school teachers on learning from individuals belonging to different generations, primary school teachers were found to be less willing and voluntary in this regard. This finding contrasts with the findings obtained in this study. It can be said that the primary condition of being a learning organization is the desire to learn individually and 289os hare what has been learned. From this perspective, the willingness of individuals to learn from teachers and other learning resources, whether from the same or different generations, is deemed extremely important.

It can be stated that there is a low and significant relationship between the knowledge sharing of teachers between generations and the perception levels of the learning organization profile of the schools. Additionally, there is not a very low and positive significant relationship between the profile of the learning organization and written contributions, which is one of the sub-dimensions of intergenerational knowledge sharing. The relationship between the learning organization profile and the organizational communication, which is one of the sub-dimensions of intergenerational knowledge sharing, is positive and at a very low level. There is a low level of significance between the personal interactions sub-dimension and the learning organization profile, and a higher level among the practice communities than the other sub-dimensions, but at a low level and there appears to be a significant relationship. Learning organizations are characterized with the ability to shape the behavior of the organization in the light of this newly created knowledge, by creating, obtaining and transferring the necessary information within the organization itself (Garvin, 1994). To facilitate the emergence of new knowledge, share this knowledge with organization members, and utilize it for generating new ideas and systems, it is essential to view all skills acquired through this process as opportunities for new learning and knowledge creation. This process encourages the organization to embrace ongoing learning and knowledge generation (Kocel, 1993). From this perspective, there is a positive correlation between the knowledge sharing between generations and the level of the learning organization profile and they can act together. One of the prerequisites of being a learning organization is individual learning and team learning, which requires sharing these learnings within the organization. When the results of the research are evaluated, it is seen that the level of knowledge sharing between generations and the perception of the learning organization of the teachers are above the average. Therefore, for schools to evolve into more functional learning organizations, factors that increase the knowledge sharing between generations are crucial for the practitioners. Suitable spaces and environments can be created for intergenerational knowledge sharing between administrators and teachers. Social and cultural activities such as projects, workshops and demonstrations, where knowledge sharing between generations can be realized more proactively, can be given more space in schools. Additionally, social activities and teamwork involving teachers from both lower and upper generations can be organized to dispel prejudices and stereotypes that may hinder knowledge sharing between generations.

Implications and Recommendations

It is observed in this study that teachers' perception levels of intergenerational knowledge sharing are above the average. Teachers exchange knowledge with their colleagues from both lower and upper generations in areas where they feel their knowledge is not sufficient. It can be noted that this exchange occurs in both directions: older generations consulting younger ones and vice versa, facilitating knowledge sharing. It is evident that teachers learn to learn as individuals who have learned to teach, they are open to learning at the group level. They are willing to create and share new knowledge, and at this point, schools become learning organizations. Considering research findings, it is apparent that teachers in schools are aware of the learning organization and that they have a perception of a learning organization in order to develop and ensure the sustainability of schools and that they see their schools as learning organizations. Learning organizations are described as entities that prioritize learning as the most crucial element, focus on the continuous development of individuals within the organization, uphold communication as a fundamental prerequisite, and effectively share opinions and information for sustainable development (Kocel, 2003).

As a result of this research, it can be suggested that various factors influence the emergence of a low level relationship between intergenerational knowledge sharing and learning organization. These factors include the individuals participating in the research, the fact that the research was carried out during the pandemic process, and the current knowledge sharing was not reflected in the perception of the learning organization. As Senge (1990) describes, members of a learning organization work together with mutual trust and support to achieve common goals and attain exceptional success in teams. Watkins and Marsick (1996) stated the dimensions of the learning organization as continuous learning, questioning and dialogue, team learning, empowerment, embedded system, system connection and strategic leadership. For this purpose, a learning organization tries to facilitate the learning of all its members and constantly transforms itself (Pedler, Burgoyne & Boydell, 1991). Considering the conceptual connection between these two concepts, the low prediction rate in this study can be attributed to

external factors such as the pandemic conditions experienced during the period when the research was conducted, and the fact that the existing intergenerational knowledge sharing in the schools where the research was conducted may not have been reflected in the learning organization. Schools can be considered natural learning organizations as teachers engage in a continuous process of learning and sharing knowledge while teaching.

In light of the findings and data analysis from this research, the following are recommended for practitioners:

- Suitable spaces and environments can be established for intergenerational knowledge sharing between administrators and teachers.
- Social and cultural activities such as projects, workshops and demonstrations, that facilitate proactive intergenerational knowledge sharing, should be more integrated into schools.
- To increase intergenerational knowledge sharing among teachers, interdisciplinary projects and studies that require team learning can be implemented.
- Social events and teamwork involving teachers from both lower and upper generations can be organized to dismantle prejudices and stereotypes that hinder intergenerational knowledge sharing.
- Administrators can promote knowledge sharing among their teachers through mentoring and reverse mentoring practices by getting to know their teachers comprehensively.

For further research, different and intriguing results can be obtained by exploring the relationships between two variables using different measurement tools. The research can be applied in various countries and the results can be compared with those of this study. Additionally, research focusing on more homogeneous groups, such as exclusively primary or high school teachers, can be conducted.

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The first author contributed 60%, the second author 40%.

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For this study, approval was received from the Kocaeli University Social Sciences Ethics Committee with the decision numbered 2021/9 and dated 17/06/2021

References

Admiraal, W., Schenke, W., De Jong, L., Emmelot, Y., & Sligte, H. (2021). Schools as professional learning communities: what can schools do to support professional development of their teachers?. *Professional development in education*, *47*(4), 684-698. DOI: 10.1080/19415257.2019.1665573

Argyris, C., & Schon, D. A. (1996). *Organizational learning II: Theory, Method and Practice*. MA: Addison-Wesley

Arslan, A. & Yener, S. (2016). The mediating role of employee voice and the moderator role of psychological comfort perception in the relationship between school administrators' motivational language and teacher tacit knowledge sharing. *16th Istanbul University Business Congress*, 288-300.

Atak, M., & Atik, İ. (2007). Örgütlerde sürekli eğitimin önemi ve öğrenen örgüt oluşturma sürecine etkisi: hava kuvvetleri komutanlığı sürekli eğitim modeli örneği. *Journal of Aeronautics & Space Technologies/Havacilik ve Uzay Teknolojileri Dergisi*, *3*(1), 63-70.

Aybar, S. (2011). *Analysis of the relationship between learning organizations and business productivity in businesses: an application in hotel businesses*. (Master's thesis, Istanbul Commerce University Social Sciences Institute, Istanbul).

Bidian, C. & Evans, M. M. (2018). Examining inter-generational knowledge sharing and technological preferences. *19th European Conference on Knowledge Management*. 95-103.

Bowen, G. L., Rose, R. A., & Ware, W. B. (2006). The reliability and validity of the school success profile learning organization measure. *Evaluation and program planning*, *29*(1), 97-104.

Braham, B. J. (1998) *Creating a Learning Organization*, İstanbul: Rota Publishing.

Burmeister, A., Wang, M., & Hirschi, A. (2020). Understanding the motivational benefits of knowledge transfer for older and younger workers in age-diverse coworker dyads: An actor–partner interdependence model. *Journal of Applied Psychology*, *105*(7), 748. Doi: https://doi.org/10.1037/apl0000466

Buyukozturk, S., Kilic Cakmak, E., Akgun, O.E., Karadeniz, S. & Demirel, F. (2008). *Scientific Research Methods*, Ankara: Pegem Publishing.

Cohen, L., & Manion, L. (1997). *Research methods in education*, London: Routledge.

Cyert, R. M., & March, J. G. (1963). *A Behavioral theory of the firm*, N.J: Prentice-Hall: Englewood Cliffs.

Çelik, Ç. (2019). *The Relationship between levels of ıntergenerational knowledge sharing and ıntergenerational learning levels among teachers*. (Unpublished master's thesis). Kocaeli University, Kocaeli.

Davenport, T. & Prusak, L. (2001). *Knowledge management in business*. İstanbul: Rota Publishing.

Davenport, T. H., De Long, D. W., & Beers, M. C. (1997). Building successful knowledge management projects. *Center for business innovation working paper*, *4*.

DiBella, A. J., Nevis, E. C., & Gould, J. M. (1996). Understanding organizational learning capability. *Journal of management studies*, *33*(3), 361-379.

Dodgson, M. (1993). Organizational learning: a review of some literatures. *Organization studies*, *14*(3), 375-394.

Drucker, P. F. (1993). The rise of the knowledge society. *The Wilson Quarterly*. *17*(2), 52-72.

Easterby-Smith, M. and Lyles, M.A. (Eds) (2011), *Handbook of organizational learning and knowledge management*, John Wiley&Sons, New York, NY.

Eren, E. (2001), *Yönetim ve organizasyon* (Çağdaş ve Küresel Yaklaşımlar). İstanbul: Beta Publication.

Fasbender, U., & Gerpott, F. H. (2021). To share or not to share: A social-cognitive internalization model to explain how age discrimination impairs older employees' knowledge sharing with younger colleagues. *European Journal of Work and Organizational Psychology*, *30*(1), 125-142.

Fasbender, U., Gerpott, F. H., & Unger, D. (2021). Give and take? Knowledge exchange between older and younger employees as a function of generativity and development striving. *Journal of Knowledge Management*, *25*(10), 2420-2443.

Fiol, C., M. & Lyles, M., A. (1985). Organizational learning. *Academy of Management Review*, *10*(4), 803-813.

Fulmer, R. M., & Keys, J. B. (1998). A conversation with Peter Senge: New developments in organizational learning. *Organizational Dynamics*. 27,2.

Garvin, D. (1993). Building a learning organization. *Harvard Business Review*. 7,4.

Geeraerts, K., Vanhoof, J., &Van den Bossche, P. (2018). Teachers' intergenerational advice and information seeking: content matters!. *Journal of Professional Capital and Community*, 3(4), 256–271.

Genc, N. (2004). *Management and organization: contemporary systems and approaches.* Ankara: Seckin Publishing.

Gerpott, F. H., Lehmann-Willenbrock, N., & Voelpel, S. C. (2017). A phase model of intergenerational learning in organizations. *Academy of Management Learning & Education*, *16*(2), 193-216.

Graf, N., Brown, A., & Patten, E. (2018). The Narrowing, but Persistent, Gender Gap in Pay. *Pew Research Center*. *9*.

Hambrick, D. C., Cho, T. S., & Chen, M. J. (1996). The influence of top management team heterogeneity on firms' competitive moves. *Administrative science quarterly*, 659-684.

Harvey, J. F. (2012). Managing organizational memory with intergenerational knowledge transfer. *Journal of Knowledge Management*, *16*(3), 400-417.

Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and process management*, *6*(2), 91-100.

Howe, N., & Nadler, R. (2012). Why generations matter: Ten findings from lifecourse research on the workforce. *Online). Tersedia di https://www. lifecourse. com/assets/files/Why% 20Generations% 20Matter% 20LifeCourse% 20Associates% 20Feb, 202012*.

Kalkan, V. D. (2006). Knowledge continuity management process in organizations. *Journal of Business & Economics Research (JBER)*, *4*(3), 41-46.

Karash, R. (2002). Learning-org dialog on learning organization. http//www.learning.org.com/html. (Accessed 23.03.2021)

Kocel, T. (1993). *Bussiness management*. İstanbul: Beta Publishing.

Kools, M., & Stoll, L. (2016). *What makes a school a learning organisation?* Paris, France: OECD Publishing.

Kuyken, K., Ebrahimi, M., & Saives, A. L. (2018). Towards a taxonomy of intergenerational knowledge transfer practices: Insights from an international comparison (Germany–Quebec). *The Learning Organization*, *25*(2), 81-91.

Kyles, D. (2005). Managing your multigenerational workforce. *Strategic Finance*, *87*(6), 52.

Lant, T. K., & Mezias, S. J. (1992). An organizational learning model of convergence and reorientation. *Organization science*, *3*(1), 47-71.

Mannucci, P. V., & Yong, K. (2018). The differential impact of knowledge depth and knowledge breadth on creativity over individual careers. *Academy of Management Journal*, *61*(5), 1741-1763.

Mohanty, K., & Kar, S. (2012). Achieving Innovation and Success: Organizational Learning. *SCMS Journal of Indian Management*, *9*(1).

Morgan, G. (1994). *Images of organzation*. England: Sage Publications Ltd.

Ng, P. T. (2004). The learning organisation and the innovative organisation. *Human Systems Management*, *23*(2), 93-100.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization science*, *5*(1), 14-37.

Nonaka, I. A. & Takeuchi, H. (1995). *The knowledge creating company: how japanese companies create the dynamics of ınnovation*. New York, NY: Oxford University Press,

Polat, S., & Kazak, E. (2015). Primary school teachers' views on intergenerational learning. *Educational Sciences: Theory & Practice*, 15(5), 1189-1203. https://doi. org/10.12738/estp.2015.5.2523..

Polat, S., Okcu, Y., & Çelik, Ç. (2019). Creating and utilizing spaces to enhance intergenerational learning at schools and results. *International Journal of Evaluation and Research in Education*. *8*(1), 1–8.

Rupčić, N. (2018). Intergenerational learning and knowledge transfer – challenges and opportunities, *The Learning Organization*, *25*(2). 135-142. https://doi.org/10.1108/TLO-11-2017-0117

Schuman, H., & Scott, J. (1989). Generations and collective memories. *American sociological review*, 359-381.

Senge, P. M. (1990). *The fifth discipline: The arts & practice of the learning organization*. New York: Currency and Doubleday.

Senge, P.M., Kleiner, A., Roberts, C., Ross, R.B. & Smith, B.J., (1994). *The fifth discipline fieldbook.* New York: Doubleday.

Smith, J. W. & Clurman, A. (1997). *Rocking the Ages: The Yankelovich Report on Generational Marketing.* New York: Harper Collins.

Sprinkle, T. A., & Urick, M. J. (2018). Three generational issues in organizational learning: Knowledge management, perspectives on training and "low-stakes" development. *The Learning Organization*, *25*(2), 102-112.

Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic management journal*, *17*(2), 27-43.

Şahin, S., Cakır, C., & Ozturk, N. (2014). Adaptation of the learning organization profile scale into Turkish: validity and reliability study. *Gaziantep University Journal of Social Sciences.* 13(1),153-168.

Tabachnick, B. G., & Fidell, L. S. (2015). *Using multivariate statistics*. (sixthed). Allyn & Bacon/Pearson Education. 6. Basımdan Çeviri: Mustafa Baloğlu, Nobel Akademik Yayıncılık, Ankara.

Taylor, J. C. (2008). Whither march the cohorts: The validity of generation theory as a determinant of the sociocultural values of Canadian Forces personnel. *Toronto: Canadian Forces College National Security Studies Program*, *10*.

Tempest, S. (2003). Intergenerational learning: A reciprocal knowledge development process that challenges the language of learning. *Management learning*, *34*(2), 181-200.

Tepeci, Y. M. & Kocak, A. G. N. (2005). Learning in teams: The key to being learning organizations. *Cukurova University Journal of Social Sciences Institute*, *14* (1), 379-394.

Toremen, F. (1999). *Organizational learning and barriers in public and private high schools*. Fırat University Social Sciences Institute PhD Thesis. (Unpublished master's thesis). Elazig.

Toremen, F. (2011). *Learning school*. Ankara: Nobel Publishing.

Ucak, N. O., (2010). Knowledge: A multifaceted concept. *Turkish Librarianship*, *24*(4), 705-722.

Wang, C., Zuo, M., & An, X. (2017). Differential influences of perceived organizational factors on younger employees' participation in offline and online intergenerational knowledge transfer. *International Journal of Information Management*, *37*(6), 650-663.

Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human resource management review*, *20*(2), 115-131.

Watkins, K. E., & Golembiewski, R. T. (1995). Rethinking organization development for the learning organization. *The International Journal of Organizational Analysis*, *3*(1), 86-101.

Yi, J. (2009). A measure of knowledge sharing behavior: Scale development and validation. *Knowledge Management Research and Practice*. *7*(1),65–81.https://doi.org/10.1057/kmrp. 2008.36

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Scaffolding Preservice Teachers' Professional use of Social Media Spaces: A Scholarship of Teaching and Learning (SoTL) Project

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Abstract
A growing number of Higher Education Faculty (HEF) are reimagining how they create learning spaces that prepare learners for rapid, complex, and uncertain societal transitions. Some have begun to embrace online, blended, and hybrid delivery models. Others are extending the metaphorical walls of their classrooms to include social media for formal and informal experiential learning. This paper is part of a more extensive Scholarship of Teaching and Learning (SoTL) mixed-method study, a proven and practical approach, conducted at a university in rural Pennsylvania, US. We briefly describe survey data that yielded Contextual Knowledge (XK) related to 215 PSTs' use of instructional technology and SM, personally or academically, in high school and college. Next, we describe how Author 1 used preliminary findings to redesign the digital instructional technology course taken by 17 education majors during their freshman or sophomore year. She revised the course to provide PSTs with a (Socio)Material space mutually shaped by social media (SM), teaching methods, and contexts. We describe how PSTs used three Performance-based Playlists to guide transition and professional engagement with teachers, principals, and professional organizations on Facebook, X (formerly Twitter), and Instagram. Qualitative data collected after each situated learning experience highlight how this (Socio)Material space increased PSTs' access to diverse voices and concerns, nurtured relationships, and enhanced their social awareness, responsibility, and accountability. This paper illustrates how educators can use the SoTL approach to better understand students' XK before making curricular changes. It also illustrates how educators can use discipline-specific Performance-based Playlists to scaffold transitions, including, but not limited to, SM.

Keywords: Social Media, Contextual Knowledge (XK), Social Networking, Societal Transitions, Teacher Educators

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Introduction

Our understanding of what constitutes a learning space has expanded over the last few decades. Learning spaces, which previously included brick-and-mortar schools, now include asynchronous online instruction, a wide range of blended and hybrid delivery models, exchange programs that may be traditional or virtual, and learning that takes place via SM. A (Socio)Material space is shaped not just by technology, teaching methods, and contexts but also by the educators who guide and facilitate learning within it. Within these spaces, educators play a crucial role in modeling attitudes, dispositions, and skills that can be used to access knowledge, build adaptive capacities, invite diverse voices and concerns, and nurture relationships. They can prepare students for uncertain times by providing curricular and pedagogy that equips them with the skills to collaborate across disciplines, grapple with interconnected challenges, and contribute meaningfully to the community. With the exponential growth of instructional technology and the increasing popularity of SM use across different age groups, HEF can use SM to create a (socio)Material space for formal and informal learning.

A growing body of literature describes how people use SM for informal and formal learning. Vogels (2019) reports that around three-fourths or more of Millennials and GenXers report using Facebook (84% vs. 74%, respectively). Others report that X (Carpenter et al., 2019; Greenhalgh & Koehler, 2019) and Instagram (Carpenter et al., 2019) are also rising. However, fewer studies describe how educators in general (Kahveci, 2015) and teacher educators (TEs) in particular, use SM as a learning space for professionals (Bruns & Burgess, 2015; Carpenter & Harvey, 2019; Shirky, 2011) and pedagogical purposes (Kelly & Antonio, 2016). Studies that describe how TEs modify college courses based on their evaluation of PSTs' technology use would enhance the approach to ongoing curriculum redesign. With this end in mind, Author 1 used the Scholarship of Teaching and Learning (SoTL) approach to evaluate 215 PSTs' access to digital devices and use of technology and SM in high school and college. We begin this article by synthesizing scholarly literature that informed the project's design. Next, we describe the background and context of the study, its purpose, method, and critical findings. We then describe how Author 1 used the preliminary findings of survey data related to PSTs' Contextual Knowledge (XK), collected during the first week of a digital instructional technology course, to redesign the course to include situated learning experiences inclusive of three Performance-based Playlists. We use qualitative data, collected after each experience, to describe the learning outcomes that ensued while PSTs interacted with other educators on Facebook, Twitter, and Instagram.

Theoretical Foundation

The scholarly literature in this section informed the design of the SoTL study, the survey, and the three Performance-based Playlists Author 1 designed to facilitate PSTs' professional use of social media.

K-16 Students' Use of SM as a Space for Learning

Over the last couple of decades, SM has become ubiquitous. Globally, more than 5 billion people were using SM in 2024, projected to increase to over 6 billion in 2028 (Jo Dixon, 2024). Some K-12 students, college students, PSTs, and in-service teachers (ISTs) use SM more than ever. K-12 students increased SM use, revolutionizing how they communicate, learn, and interact with the world (Vogels et al., 2022). Even though there are restrictions in many schools, scholarly literature documents children's use of popular platforms like Facebook, Twitter, Instagram, and Snapchat to connect with their peers, share information, and communicate with others. For example, Chapman and Marich (2021) describe how students in two elementary grades used Twitter to connect with people beyond their small-town community; they tweeted the information they were learning. They also describe how 9th-grade students used Twitter to connect with people living through significant global events. Similarly, Koutsakas et al. (2019) described Greek vocational high school students using Facebook for collaborative learning while enrolled in a massive open online course (MOOC) hosted on the Udemy platform. We cannot ignore the amount of time teens are spending online. Many of Anderson's (2023) survey respondents, who were teens in the US, reported that they are online almost constantly (46%) or several times a day (47%).

Many scholars have described the dramatic increase in SM use for learning at the postsecondary level. Vizcaya-Moreno and Pérez-Cañaveras (2020) describe how GenZ's distinctive combination of beliefs, attitudes, and social norms demand innovative ways of learning and have changed the education paradigm. They reported that GenZ prefers SM over face-to-face communication. Additionally, they expect technology over books and select storytelling over reading a book (Shatto & Erwin, 2016; Williams, 2019). Ansari and Khan's (2020) empirical study of 360 students at a university in Eastern India revealed that using SM for collaboration between teachers and students remarkably improved students' academic performance. Several scholars reported that Facebook was more beneficial than other types of SM. For example, Shahzad and Bilal's (2019) quantitative study showed that

Twitter's contribution to the academic motivation of 130 mass communication students in Pakistan was relatively small compared to Facebook, which positively impacted their academic motivation. Similarly, Giannikas (2020), who used a survey approach with Cyprus University of Technology students, reported that Facebook groups were a handy addition to the Learning Management Systems (LMS). Similarly, Comen et al. (2021) online survey of 872 Romanian students revealed that students were more inclined to use Facebook for teaching, global collaboration, and learning than Instagram. McGarr and McDonagh's (2020) survey data, collected from PSTs upon entry to an initial teacher education program in Ireland, showed frequent SM users but reported lower use of other digital technologies. This unusual finding merits further investigation.

Educators Use of SM for Teaching and Learning

Some tech-savvy ISTs and PSTs have begun to use Facebook, X, and Instagram in their personal lives. They also use SM professionally to connect with peers, share resources, and engage with students and their families. The scholarly literature highlights similarities and variability in PSTs' and ISTs' preferences and the use of different types of SM. For example, Schroeder et al.'s (2019) exploratory qualitative approach with 112 teachers revealed that teachers of all levels used Pinterest to find and adapt instructional resources to their classroom needs. Schroeder et al. noted that PSTs made more complex connections when evaluating excellent materials on Pinterest than ISTs. Eubanks et al. (2021) reported that the 125 PSTs enrolled in a teacher education program on the Gulf Coast indicated that SM tools such as Facebook, Pinterest, and YouTube are excellent for future classroom preparation. Kearney et al. (2020) report that PSTs, in their last year, used professional learning networks (PLN) to transition into teaching. Calderón-Garrido and Gil-Fernández's (2022) survey, administered to 812 PSTs at six Spanish universities, revealed their preference for YouTube, WhatsApp, and Instagram. They noted that undergraduate usage was more intense than postgraduate usage. They also reported that PSTs consumed more content on SM than they created, failing to fully capitalize on social capital and possible employment or academic prospects provided by their efforts. Even though the literature confirms that HEF has begun integrating SM tools, there continues to be a need for additional research that explores educators' pedagogical use of these tools (Watson, 2020).

Are Teacher Educators (TEs) using SM to create (Socio)Material spaces mutually shaped by technology, teaching methods, and contexts, and mediated by educators and learners? While some TEs have begun integrating SM intentionally into the explicit curriculum, these educators are the exception rather than the norm (Machado et al., 2024a; Machado & Seifert, 2024b). Boholano (2017) notes that, "smart social networking requires critical-thinking skills and the ability to integrate and evaluate real-world scenarios and authentic learning skills for validation" (2016, p. 21). TEs must remember this and continuously update and revise the curriculum (Warr et al., 2023). They must build teachers' competence and confidence in integrating technology into teaching and learning (Williams et al., 2023). To accomplish this, they should build e-professionalism training early in the teacher preparation program (Crompton et al., 2016) and model the use of technology in various contexts (Jin et al., 2023). Zinskie and Griffin (2020) recommend incorporating SM policies and topics into the curriculum and modeling the appropriate use of SM. TEs must also build partnerships with PK-12 leaders and teachers for teacher mentorship and induction (Sprague et al., 2023).

Using the ISTE Standards to Support Integration of SM into the Curriculum

TEs, in-service teachers (ISTs), and PSTs need to keep abreast with the field of instructional technology, which is growing exponentially. Educators must also prepare students for future uncertainties by integrating technology and social media into the curriculum to enhance teachers' ability to learn, lead, and engage in digital citizenship. This can be accomplished using SM as a (Socio)Material Space. They can create this space using The International Society for Technology in Education (ISTE) Standards as a guide. The ISTE Standards for Educators empowers educators to grow as Learners (ISTE Standard 2.1), Leaders (ISTE Standard 2.2), Citizens (ISTE Standard 2.3), Collaborators (ISTE Standard 2.4), Designers (ISTE Standard 2.5), Facilitators (ISTE Standard 2.6), and Analysts (ISTE Standard 2.7). Over the last five years, scholars have used the ISTE Standards to evaluate teachers (Aslam et al., 2020) and school leaders (Raman et al., 2019; Miller, 2021). Aligning course objectives to these standards could potentially enhance how TEs design coursework that targets developing digital skills deemed essential in the Sustainable Development Goals Report (UN, 2023).

Context of the Study

Scholarly literature emphasizes the importance of educators critically evaluating the design characteristics and functionalities of digital learning spaces to optimize learning outcomes and social interactions for students (Bruner & Hutchison, 2023). This study was conducted at a mid-sized, rural, four-year university in the US, spanning three 15-week semesters. At this university, the PSTs of 17 education majors take only one stand-alone technology course, ACE103 Digital Instructional Technology, while they are freshmen or sophomores. At the time of this study, the faculty had not revised this course for over a decade. Having worked at the university for 12 years, Author 1 knew that PSTs' use of technology for teaching and learning was limited. Recognizing that technology competence may vary significantly based on their location, access to digital devices, and the types of schools they attended, Author 1 decided to employ the SoTL approach to gain a deeper understanding of PSTs' context for curriculum redesign. Instead of focusing on the three interlocking circles of Mishra and Koehler's (2006) TPACK framework – Technology Knowledge (TK), Pedagogy Knowledge (PK), and Content Knowledge (CK)- she decided to focus on the dotted circle that surrounds them. Mishra (2019) proposed that this dotted circle, context, should be renamed "Contextual Knowledge (XK)." He described XK as "everything from a teacher's awareness of available technologies to the teacher's knowledge of the school, district, state, or national policies they operate within" (p. 76). We describe the purpose of this study and the methodology we employed to evaluate PSTs' XK in the following section.

Methodology

This study was part of a more extensive QUAN-QUAL SoTL study on enhancing PSTs' digital literacy. This section outlines the rationale for employing the SoTL approach to address three research questions. It also includes a description of the data sources, our positionality as authors, the steps taken to enhance data quality, and the participants' enrollment status across the various course delivery models.

Research Questions and Rationale for Using the SoTL Approach

We used the SoTL approach to engage in systematic research-based inquiry, reflective thought, and action. The SoTL approach gained popularity with teacher-scholars after former Carnegie Foundation President Ernest Boyer published *Scholarship Reconsidered* in 1990. Glassick et al. 's follow-up publication *Scholarship Assessed* (1997) further enhanced scholars' familiarity with this approach. Since then, there has been a growing awareness that "engaged SoTL research output at the institutional level can send a powerful signal to prospective students and other stakeholders that the university takes teaching and learning seriously" (Asarta et al., 2018, p.737). The following questions guided the study:

(1) Which technologies did PSTs use personally and academically in high school/college?
(2) How often do PSTs post content online in public forums like Facebook, Twitter, Instagram, Snapchat, and websites? Was there an association between gender and student status with the frequency of posts?
(3) How did PSTs describe their technology use in terms of each of the ISTE Standards for Educators before completing ACE103 coursework?

The SoTL approach served two purposes. Firstly, the survey data Author 1 collected over three consecutive semesters enhanced Author 1's understanding of PSTs' XK. Secondly, Author 1 used the XK data collected in the fall of 2019 to inform the design of several learning experiences grounded in Situated Learning Theory, including three Performance-based Playlists, which is the focus of this paper. She embedded these into the courses she taught in the spring and fall of 2020; in this paper, we describe the influence of the first data collection phase on the learning outcomes that resulted, as reflected in PSTs' written reflections in the spring and fall of 2020. The SoTL approach proved ideal because it promoted individual and collective learning (Dyck, 2017; Hanc, 2016). It also allowed us to bridge the divide between the scholarship of discovery and teaching (Hutchings et al., 2011).

Data Sources

We analyzed data from three primary sources: PSTs' pre-session survey responses, discussion board posts submitted to the learning management system, and ePortfolio artifacts. A total of 215 PSTs completed the validated 14-item pre-session survey within the first 10 days of three 15-week semesters. Items 1–6, 8, and 10–14 generated quantitative data related to PSTs' Context Knowledge (XK); Items 7 and 9 yielded 352 open-ended responses. Additional qualitative data included 465 discussion board posts and 10 randomly selected ePortfolios from the 155 that PSTs submitted at the conclusion of the spring and fall 2020 semesters.

Positionality and Data Quality

Both authors are females with K-12 teaching and administrative experience in the Global South. Author 1, a full professor at a research university in the US, played dual roles as course instructor and researcher. Author 2 is a teaching associate at the same university; she assisted with analysis and manuscript preparation when she was Author 1's graduate assistant. We view our positionality as an asset for the study and strive for transparency throughout the review process to enhance the trustworthiness of our research. We employed several steps to enhance the validity and reliability of the survey data, and the trustworthiness of qualitative data. Author 1, who has taught traditional, synchronous, and asynchronous college courses for eighteen years, designed the pre- session survey. Two postgraduate students with experience in digital instructional technology established face validity of the survey (Marshall & Rossman, 2014). The validated survey included three demographic items, nine scaled items, and two open-ended items. We collected additional qualitative data sequentially over the 15 weeks. We asked participants for permission to analyze survey data, discussion posts, and eportfolios after the course ended to avoid the Hawthorne effect and minimize the feeling of coercion. First Author 2 used SPSS, a quantitative research software, to run descriptive statistics. Next, she used the codebook that we both collaboratively developed to manually code the qualitative data generated through open-ended survey questions 7 and 9. We increased the trustworthiness of the qualitative data by using a structured approach to team coding, as recommended by Saldana (2021). We also used NVivo, a qualitative research software, for typological and interpretive coding (Hatch, 2002). We frequently employed memoing and peer debriefing during the data analysis and manuscript preparation phases to minimize misinterpretation and author bias, and to eliminate over- or under-emphasis of ideas (Edmonson & Irby, 2008).

Participants

A total of 215 PSTs, enrolled in ACE103 Digital Instructional Technology for three consecutive semesters at a research university in the US. With these PSTs consent Author 1 analyzed their survey responses and written artifacts, including responses to discussion prompts and ePortfolio submissions. Of these participants, 144 identified as female (67%), 70 as male (32.6%), and one PST identified as "other." These participants represented a range of academic classifications, with the majority being sophomores (n = 111, 51.6%). Freshmen comprised 21.9% of the sample (n = 47), followed by juniors (n = 42, 19.9%) and seniors (n = 15, 7.0%). Participants also varied in their intended teaching disciplines. The largest proportion planned to teach in the humanities (art, theatre, English, and history; n = 63, 29.9%), followed by social studies (n = 39, 18.5%) and early childhood education (n = 37, 17.5%). Approximately one-fifth of participants intended to teach health and physical education (n = 20, 9.5%), science and mathematics (n = 26, 12.3%), or vocational education and family and consumer sciences (n = 26, 12.3%).

Table 1 shows PSTs' enrollment by course delivery format. Prior to the pandemic, it was offered in person and asynchronously online. While the course continued to be offered asynchronously online during the pandemic in spring 2020 and fall 2020, the face-to-face class for spring 2020 was converted to an online class in March. In the fall of 2020, the instructor taught both classes online. One of the two sections met synchronously on Tuesday and asynchronously the rest of the time.

Table 1. Different course delivery models employed to teach ACE103 Digital Instructional Technology

Year	In-person	In-person (Synchronous from March 2020 onward)	Asynchronous	Hybrid (Synchronous /Asynchronous)
	n (%)	n (%)	n (%)	n (%)
Fall 2019	25 (41.7)		35 (58.3)	
Spring 2020		26 (47.3)	29 (52.7)	
Fall 2020			58 (58)	42 (42)
Total	25 (11.6)	26 (12.1)	122 (56.8)	42 (19.5)

Proportionally, more PSTs had enrolled in the online asynchronous format (n = 122; 56.8%) compared to the hybrid option (n = 42; 19.6%) or the in-person option (n = 25; 11.6%).

Analysis and Findings

We used SPSS and NVivo to analyze numeric and qualitative data from the 14-item pre-session survey in the fall of 2019. Based on these findings, Author 1 modified the course to include three Performance-based Playlists in

the spring of 2020. She taught the modified course in the fall of 2020, as well. We continued to collect additional XK data with the survey in the spring and fall of 2020 for comparison purposes. Additionally, we used PSTs' written responses submitted to the Learning Management System (n = 155). We randomly selected written reflections from their eportfolios (n = 10) to evaluate the effectiveness of the three performance-based playlists.

PSTs' Description of Technology Use Before the Course

Research question one identified the technologies PSTs used personally and academically in high school and college. We used a codebook in NVivo and typological analysis (Hatch, 2002) to code the 352 open-ended responses related to items 7 and 9; the data broadly fell into 22 categories. PSTs referenced Microsoft products many more times than (n = 454) than Google products (n = 250); they did not reference Apple products as much (n = 18). This is unsurprising; many of the students at this university cannot afford Apple products, which are more expensive. Very few PSTs reported using Entertainment Technologies (n = 22) and Instructional Technology (n = 24) in high school and college. Conversely, many reported using Instagram, Snapchat, and Facebook, followed by YouTube and TikTok in their personal life (n = 415). However, fewer PSTs reported using SM for academic purposes (n = 48). Next, we used interpretive analysis (Hatch, 2002) to code the technologies PSTs listed for open-ended items 7 and 9. Based on the number and nature of technologies listed, we placed each PST into one of the following four categories: *very few*, *average*, *above average*, *or well above average.* Most PSTs reported using *very few* technologies in high school and college (n = 98; 55.37%). We categorized a third as *average* (n = 59; 33.33 %), a fifth as *above average* (n = 19; 10.73 %), and only one PST in the *above-average* category.

PSTs' SM Use Before the Course

Research question two investigated how frequently PSTs posted content online in public forums, including Facebook, Twitter, Instagram, Snapchat, and websites, in both high school and college settings. We used survey items 7, 8, and 9 to answer these questions. Figures 1 and 2 show that PSTs, on average, posted content 1-3 times a month. We ran Chi-square tests to determine if there was an association between the number of times they posted and two independent variables: gender (Figure 1) and student status. (Figure 2). In both cases, the results were not statistically significant.

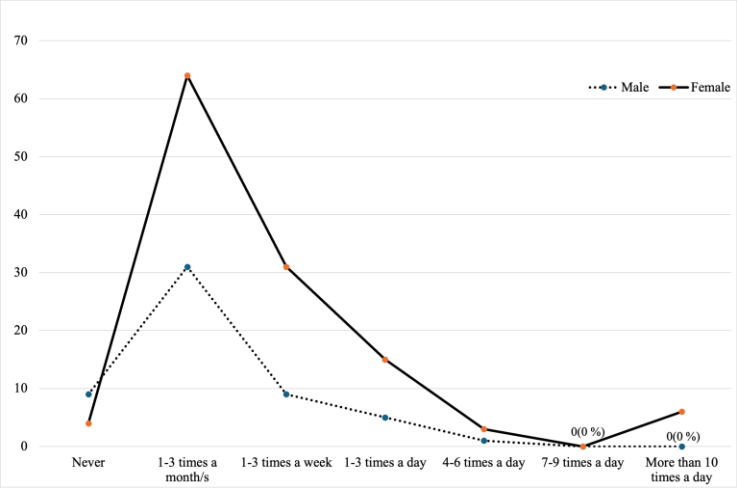

Figure 1. PSTs' online posting frequency by gender

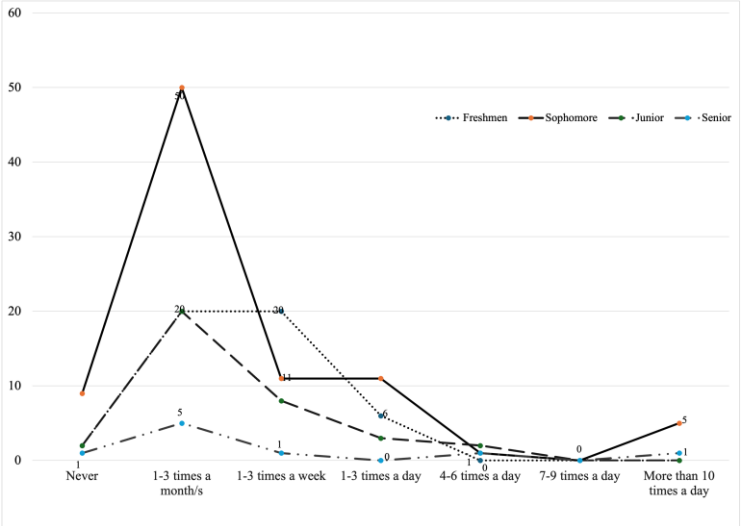

Figure 2. PSTs' online posting frequency by enrollment status

Research question three explored PSTs' technology use before taking ACE103. We used survey item 11, based on the ISTE Standards for Educators, to answer this question. Figure 3 shows that proportionately, more PSTs reported using technology to Learn (ISTE Standard 2.1, n = 157, 78.1%) and Collaborate (ISTE Standard 2.4, n = 132, 65.7%). Interestingly, the technologies they listed for open-ended items 7 and 9 did not support their claim about collaborative use. The only collaborative tools they mentioned were Google products. Descriptive data on their use of Google products shows that less than half of the PSTs reported personal use of Google Docs (n = 71, 43%); fewer PSTs used Google Docs in high school/college (n = 31, 37%). Only a fourth reported using Google Slides personally (n = 42, 25.8%) and in high school/college (n = 22, 26.2%). A limited number of PSTs reported personal and academic use of Google Classroom (12.9% and 4.8%, respectively), Drive (8% and 6%, respectively), Sheets (5.5% and 7.14%), and Gmail. (4.3% and 19.1%). In terms of the ISTE Standards for Educators (see Figure 3), fewer PSTs reported using technology to develop their skills as Leaders, Digital Citizens, Designers, Facilitators, and Analysts (ISTE Standards for Educators 2.2, 2.3, 2.5, 2.6, and 2.7, respectively).

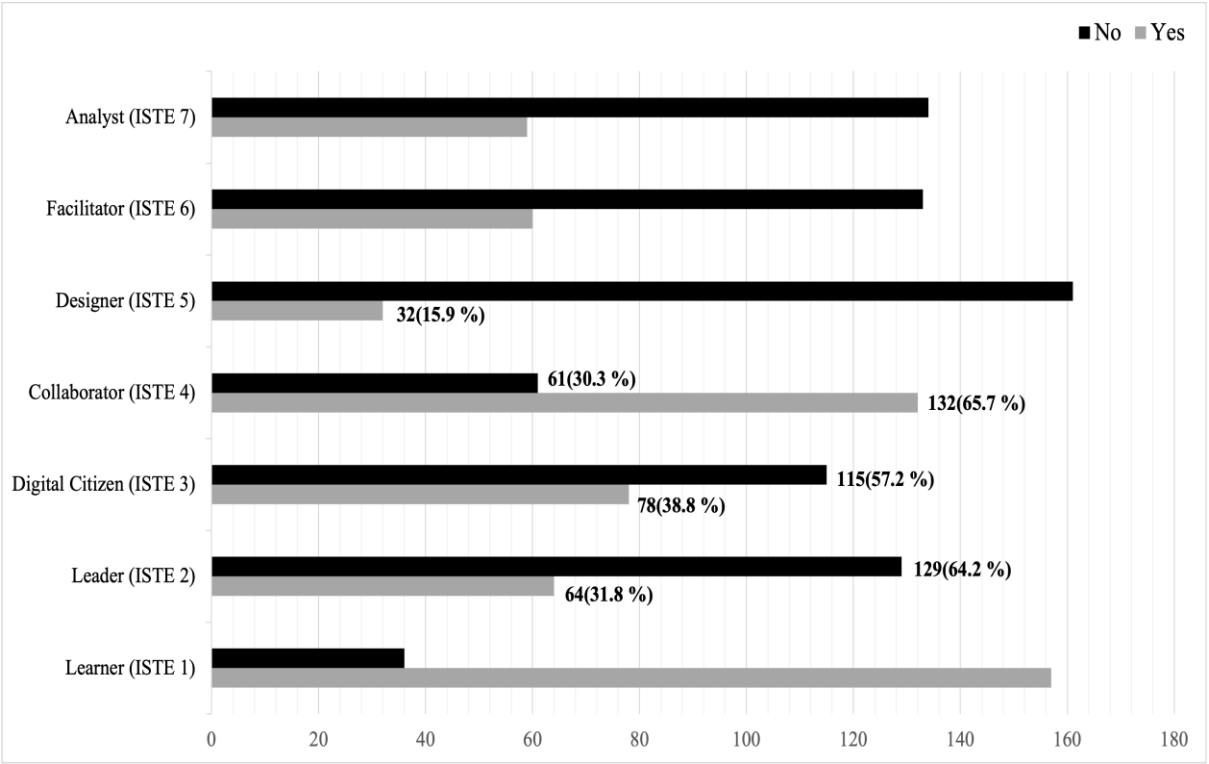

Figure 3. PST self-assessment using ISTE standards

Course Redesign Based on Pre-Session Survey Data

Consistent with the findings of other scholars (Guntara & Utami, 2021; Smith et al., 2020; McGarr & McDonagh, 2020), the PSTs' XK data, collected between fall 2019 and 2020 and described in the previous section, showed that PSTs' use of digital instructional technology was limited. It also corroborated anecdotal evidence observed by Author 1 that spanned several years. Guided by the SoTL approach, which fosters individual and collective learning, Author 1 used the XK data to recommend the adoption of the ISTE Standards for Educators (2017) at the college level. Once the Teacher Education Constituent Council approved of this change at the college level, Author 1 initiated a revision of the course. A subcommittee, which included Author 1 and three other faculty, revised the course objectives and rubrics for data collection and accreditation purposes.

PSTs' Professional Use of SM Spaces - Learning Outcomes

Using backward design (Wiggins & McTighe, 2005), Author 1 designed "situated learning experiences with technology" (Calderon, 2021). These learning experiences and performance-based activities were grounded in Lave and Wenger's (1991) Situated Learning Theory (SLT). They included modeling, practice, feedback, and reflection (Calderon, 2021; Jin et al., 2023; Lave & Wenger, 1991). Instead of reading and discussing emerging technologies, as had been the case, the learning experiences were more hands-on, with PSTs exploring, designing, and creating technology-rich instruction. These experiences fostered higher-level thinking and real- time problem-solving. The department, the University-wide Undergraduate Curriculum Committee, and the University Senate formally approved the course revision by the end of the fall 2019 semester. Author 1 taught the revised course in the spring and fall of 2020, as described below.

Knowledge in Action (Weeks 1 – 2)

During the first two weeks Author 1 introduced PSTs to theories and frameworks, such as Rogers' Diffusion of Innovation Theory (DIT) and the Partnership for 21st Century Skills' rainbow diagram, emphasizing the importance of the 4Cs: Communication, Collaboration, Critical Thinking, and Creativity. PSTs identified technologies that helped and hindered their 4C skill development and identified areas for improvement. In addition to exploring and discussing their digital footprints online, PSTs discussed statistics and news about how teachers misuse SM. They also discussed ways to manage their online reputation proactively. Author 1 provided PSTs with direct instruction on the implications of inappropriate SM use, including future hiring decisions and possible sanctions for violating P12 school/ district SM policies. PSTs also discuss the importance of balancing personal and professional use of SM and provide PSTs with access to role models who successfully do this on various platforms. PSTs also learned to find and follow influential teachers and school leaders on Facebook, Instagram, and Twitter. They paid close attention to the nature of the content that influential teachers posted and shared the illustrative examples they curated with the class.

Design, Creation, and Testing (Weeks 3 – 11)

During weeks three to eleven PSTs learned how to identify, explore, evaluate, curate, and adopt new digital resources and tools for learning (ISTE Standard 2.2). They learned to utilize technologies such as Nearpod, Google Docs, and Google Sheets to create innovative digital learning environments that recognize, support, and accommodate learner variability (ISTE Standard 2.4). They used infographics, Sways, and Screencasts to create, adapt, and personalize learning experiences that foster independent learning and accommodate learner differences and needs (ISTE Standard 2.5). They also utilized technologies like Kahoot and Quizizz to design and implement a variety of assessments that cater to learner needs, provide timely feedback to students, and inform instruction (ISTE Standard 2.7). They practiced creating and facilitating student learning on digital platforms and in virtual environments, such as Zoom, Flip, and VoiceThread (ISTE Standard 2.6). PSTs also used digital tools to promote safe, legal, and ethical practices when posting content online. They made positive, socially responsible contributions and showed empathetic behavior that helped build relationships and foster a sense of community (ISTE Standard 2.3).

SM Engagement (Weeks 12 – 14)

Given the variability in PSTs' social media use prior to taking this course (see Figure 3) and the different forms of each social media interface, Author 1 designed Performance-based Playlists to scaffold PSTs' professional use of Facebook (see Appendix A), Twitter, and Instagram. PSTs familiar with the features of a particular social media type could use the Playlist at an accelerated pace; others who were less familiar with that social media could use

the Playlist to engage in the experience at a slower pace. Figure 4 presents a brief overview of the expected learning outcomes of the three situated learning experiences.

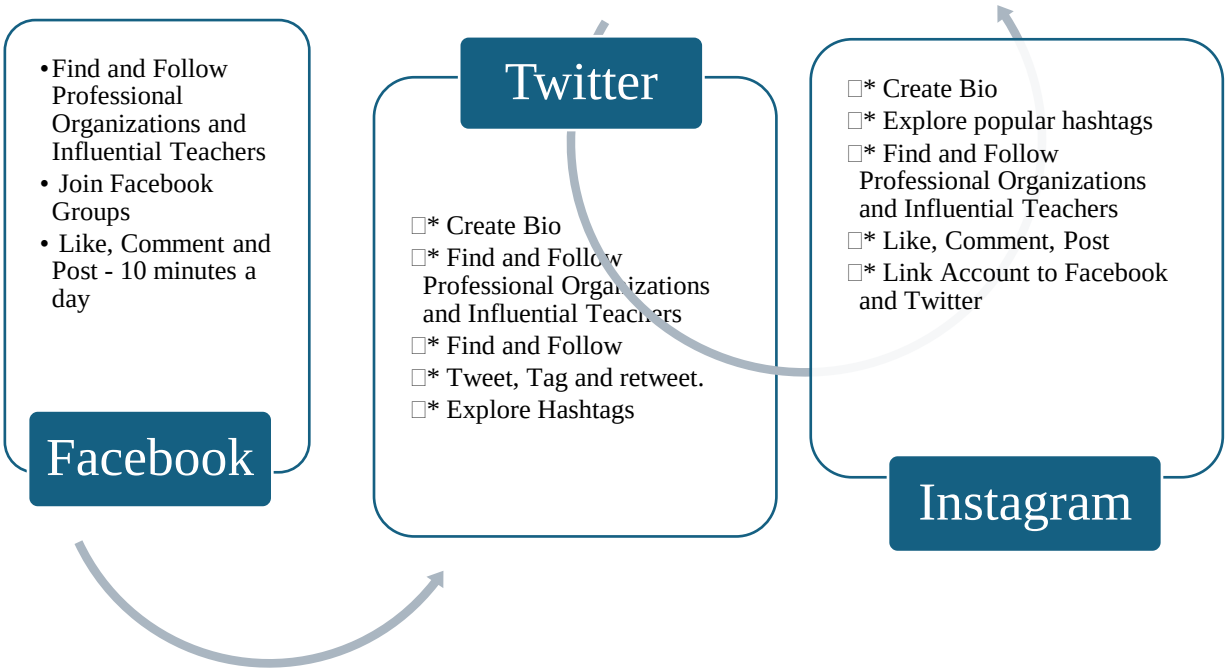

Figure 4. Expected learning outcomes in SM spaces

Author 1 embedded the Playlists into spring and fall 2020 courses. Initially, many PSTs were apprehensive about participating in local and global learning networks and leveraging technology to improve student learning (ISTE Standard 2.1). The "Learn and Do" design of each Playlist (see Appendix A) helped PSTs familiarize themselves with the conventions of the three SM types and use them for learning, leading, and digital citizenship.

PSTs' Professional Use of Facebook

Author 1 built structured discovery in the Facebook Playlist (see Appendix 1), primarily because the survey revealed that very few PSTs had used it (n = 6). Many PSTs were initially reluctant to use Facebook because they thought it was designed for older adults. They expressed surprise when they read the statistics in the Facebook Playlist. In their discussion board posts, PSTs reported that they overcame their hesitance to utilize this platform and began to enjoy it after using the Facebook Playlist (see Appendix A). PSTs who had a working knowledge of Facebook before this course and those experiencing it for the first-time reported benefits.

> I use Facebook daily, so when I saw this assignment, I thought it would be fun. I enjoyed listening to what teachers had to say about using technology in the classroom. After doing this assignment, I learned much more about using technology in school. (JL, D2l Discussion, October 19, 2020)

> I don't enjoy interacting like this online and do not do it often. I would rather interact in person, but I found a little enjoyment once I was on and doing it. I understand that interaction like this is an integral part of teaching, and I will do it in the future. I don't enjoy it as much as others. (HH, D2l Discussion, October 19, 2020)

Many PSTs showed agency by joining Facebook Groups other than the ones listed in the Playlist. Their comments highlight a willingness to communicate with people they did not know, pose questions, and interact meaningfully with teachers worldwide.

> This activity helped me understand the importance of communication and being active with other teachers. I got to speak to people I did not know and see what technology was all about. (AP, D2l Discussion, October 19, 2020)

> This activity turned out to be very enjoyable for me! It was nice to receive encouragement and learn from other teachers. I also liked seeing that many other teachers have a good sense of humor and seem to love what they do. The whole experience made me excited to start my career. (SMW, D2l Discussion, October 19, 2020)

Others acknowledged that the platform, which they once considered inappropriate, was valuable. A nontraditional PST who teaches at a vocational school described how he began using Facebook to interact with his students.

> One of my biggest hurdles with the online learning being conducted right now was assembling all my students. We were taught to avoid Facebook, but now it is a tool. When all this started, I received permission to start a Facebook page and group to communicate with my students quickly and herd them into Schoology. Facebook Messenger is one way my students can ask me questions about how we post for Zoom conferences. I can also use the group and messenger on Facebook to remind my students to continue getting work done or to log on because of a new post. One positive thing about this is that I only let my students into the group so that it is class-specific and will not have others joining for no reason. (PC, D2l Discussion, October 16, 2020)

The Playlist helped PSTs become more conscious about privacy literacy. They used the blurring option, where appropriate, to conceal the identity of the teachers they followed.

PSTs' Professional Use of Twitter (now X)

We were surprised to note that PSTs did not list Twitter as a technology they used in high school and college. Once PSTs became familiar with Facebook, Author 1 introduced them to the professional use of Twitter. Twitter can be very overwhelming initially. To scaffold PSTs learning, Author 1 embedded links to short videos in the Twitter Playlist to introduce PSTs to the norms, followed by performance-based prompts that allowed them to make their learning public on Twitter. Per the guidelines, PSTs included Author 1's handle when they Tweeted. This enabled Author 1 to interact with PSTs on Twitter. PSTs' reflective posts showed the realization that SM can be used for learning, professional growth, and networking with other teachers. Many were surprised they could gain pedagogical knowledge on Twitter from teachers in different parts of the world.

> Twitter exposed me to millions of tweets made by teachers from all over. One teacher shared how crucial it is to say hello and goodbye to your students. She realized her engagement, even if it was small, had an impact on her students when she received a note from a girl in her class that said: You tried to connect with all of your students and say hello and goodbye to them, and I appreciated that because sometimes in my classes, my teacher's kind of forget I'm even there. (MA, December 2021)

MB's comments reflected the new insights she gained in terms of the roles she could play as a digital citizen and leader:

> I tweeted about different technologies and resources that support student empowerment and success and can improve teaching and learning. (MB, portfolio, December 2021)

> I acted as a leader by advocating for equitable access to educational technology, digital content, and learning opportunities to meet the diverse needs of all students. I modeled the identification and exploration of new digital resources for learning. (MB, portfolio, December 2021)

> I made tweets that create experiences for learners to make positive and socially responsible contributions to build relationships in the educational community. I tweeted about different technological resources that can be used to help teachers and students. I modeled and promoted safe and ethical digital tools and established a learning culture fostering curiosity and critical online resource examination. I created positive content to try to build relationships in the education community. (MB, portfolio, December 2021)

PSTs' Professional Use of Instagram

While most PSTs had used Instagram personally (n = 136), prior to this course, some had been using it for the first time. PSTs, accustomed to using Instagram, were challenged to view it differently. One student said, "Doing the same action with a new account felt strange, but helped remind me of what I should be looking for in SM interaction" (AR, D2l Discussion, November 2, 2020). PSTs described various new ideas they gained from the

videos and assigned readings. They discovered that Instagram is an excellent platform for connecting with students and teachers worldwide. One PST said, “Instagram made me realize this is an excellent way to connect with the younger generation” (QS, D2l Discussion, November 2, 2020). Another said, “I learned that there is an overwhelmingly large community of teachers on Instagram, also known as Teachergram. This allows teachers worldwide to connect, use, and share ideas” (ZM, D2l Discussion, October 29, 2020).

PSTs learned how to set up and manage a professional profile and discovered additional features to enhance the professional networking experience.

> I also learned that Instagram has an "explore" tab where you can go on and look at other accounts similar to those you already follow and explore new people you may want to connect with on Instagram. (ZM, D2l Discussion, October 29, 2020)

> I learned that it is essential to make yourself marketable in the biography part of Instagram and state your services or area of expertise. (HW, D2l Discussion, October 28, 2020)

> I also learned that you should put your career title in the name section of the bio so that when people look up the career, they can find you in case they don't know you. Lastly, I also learned that using keywords in your bio and name section is vital...I also learned to keep my page organized and look good to others. I also learned the steps to create my page for professional use. This way, I can separate my personal life from my career. (LB, D2l Discussion, November 2, 2020)

> I was also introduced to some interesting creative ways to establish a page… I learned various things, such as color-coding your page and deciding on a theme, like keeping it organized and aesthetically pleasing. (JC, D2l Discussion, November 2, 2020)

> I learned that using hashtags and tagging others is also very important. This will help you get discovered and connect with others who share the same interests as you. (HH, D2l Discussion, November 2, 2020)

> I learned new, helpful information. I had learned that if I accessed Instagram from a desktop and went to the website, there was an "embed" option on the posted picture. Using the embed option allows the user to copy a code and be able to post it anywhere, like a blog or email (HW, D2l Discussion, October 28, 2020)

Their comments confirmed that their knowledge of privacy literacy was growing.

> I learned how to gain followers through commenting and engaging other accounts, ways in which to be safe when posting pictures of students (getting their permission), balancing well between posting and engaging with those you follow, and how to create a great page without including images of your face or displaying any personal information. (JV, D2l Discussion, November 2, 2020)

> If your friend has tagged you in something that may not be school-appropriate or do not want on your profile, you can remove it by tapping on your profile and selecting “Hide from my profile.” (KB, D2l Discussion October 31, 2020)

Discussion and Implications

The UN’s Sustainable Goals calls for instruction that develops learners’ digital skills (communication/collaboration, problem-solving, safety, content creation, and information/data literacy). Irrespective of discipline, the new generation of learners must be digitally and culturally competent. Global awareness and transcultural capacities are built over time. When PSTs graduate, they need to be prepared to meet the ever-changing needs of their workplace. This includes empowering K-12 students to develop digital skills that help them function and thrive in a digitally connected world. Even though there is a growing awareness that TEs need to integrate technology across the curriculum, stand-alone digital instructional technology courses continue to be popular at many institutions in the US. Until this changes, TEs must critically evaluate digital learning spaces' design characteristics and functionalities (Bruner & Hutchison, 2023). They must consider creative ways to make stand-alone courses relevant to PSTs’ needs. With this end in mind, Author 1 used the SoTL approach to collect data about PST’s technology use in high school and college so that she could use this data about PSTs’ Contextual

Knowledge (XK) to make meaningful changes to a digital instructional technology course that had not been modified in over a decade.

In this paper, we focus on the practical implications of our research. Research question one aimed to identify the technologies PSTs used personally and academically in high school and college. Consistent with McGarr & McDonagh's (2020) findings, the PSTs' XK data confirmed that they were frequent SM users but made limited use of other digital technologies. More than half of the 215 PSTs reported using very few technologies in high school and college (n = 98; 55.37%)—most referenced fundamental technologies like Microsoft, PowerPoint, and Google products. The 215 PSTs made fewer references to the academic use of SM in high school and college (n = 48) compared to referencing personal SM use (n = 415). This is not surprising. Based on anecdotal information, these statistics could be attributed to the fact that HEF and K-12 teachers in this area make limited use of SM and discourage their students from doing the same.

Research question two explored how often PSTs posted content online in public forums like Facebook, Twitter, Instagram, Snapchat, and websites. Regarding frequency, PSTs in this study reported posting content 1-3 times a month. This finding is inconsistent with the nationwide studies. For example, Anderson's (2023) survey respondents reported that they are online almost constantly (46%) or several times a day (47%). Like the PSTs of this study, some learners may be reluctant to use SM for professional purposes. They may need direct instruction to help them see SM as a legitimate space for teaching and learning. Others already using SM for personal purposes may be using it without guidance. With some support, they can use SM for academic and professional learning.

Research question three aimed at exploring how PSTs described their use of technology in terms of the ISTE Standards for Educators before the course. More PSTs reported using technology to Learn, ISTE Standard 2.1 (n = 157, 78.1%) and Collaborate, ISTE Standard 2.4 (n = 132, 65.7%). Interestingly, qualitative data from open-ended items 7 and 9 did not support this claim. Their use of Google's collaborative tools was limited. Descriptive data on their use of Google products shows that less than half of the PSTs reported personal use of Google Docs (n = 71, 43%); fewer PSTs used Google Docs in high school/college (n = 31; 37%).

Author 1 used the insights gained from the XK data and the UN's Sustainable Goals for improved digital skills (communication/ collaboration, problem-solving, safety, content creation, and information/data literacy), to align the course objectives with the ISTE Standards for Education (2017). These standards empower learners to grow as learners, leaders, collaborators, digital citizens, facilitators, and analysts. She used these standards to guide the design of a series of learning experiences grounded in SLT, inclusive of three Performance-based Playlists. Author 1 augmented the skills PSTs gained in this stand-alone course by integrating SM into the course assignments (Machado et al., 2024a; Machado & Seifert, 2024b). In doing so, she and her mutually students created and mediated a (Socio)Material space for ongoing experimental learning on Facebook, Twitter and Instagram. Keeping in mind the recommendations of several scholars' advice, Author 1 shared her own SM experiences with PSTs during weeks 3-11 of the course to assist PSTs in developing their own personal and professional guidelines (Carpenter et al., 2017; Damico & Krutka, 2018; Muñoz & Towner, 2009). She also modeled how PSTs could leverage SM to enhance their professional knowledge, disposition, and skills (e.g., Carpenter et al., 2018; Eubanks et al., 2021) and build a professional community (e.g., Carpenter et al., 2018; Greenhalgh, 2021; Rosenberg et al., 2016). Author 1 modeled attitudes, dispositions, and skills used to access knowledge, build adaptive capacities, invite diverse voices and concerns, and nurture relationships.

The (Socio)Material space enhanced PSTs' adaptive capacities. The exploration and discussion-based experiences during weeks 1-11 align with Crompton et al.'s (2016) recommendation that e-professionalism training occurs early in the teacher preparation program. PSTs benefited from discussions related to the risks of inappropriate SM use, the benefits of e-professionalism, how PSTs can use SM to convey a positive image of teachers and the teaching profession (Chang-Kredl & Colannino, 2017; Kelly et al., 2017), and how they can be positive role models for their P-12 students (Poth et al., 2016). The experiential learning experiences during weeks 12 -14 prepared PSTs for uncertain times by providing them with curricula and pedagogy that equipped them with the skills to collaborate across disciplines, grapple with interconnected challenges, and contribute meaningfully to the community. The qualitative data, collected on an ongoing basis after PSTs used each of the three Performance-based Playlists, confirmed the tangible impact of the course in enabling learners to collaborate across diverse backgrounds, contexts, disciplines, and professions. It also confirmed how promoting learner self- reflection, self-regulation, and self-monitoring leads to positive learning outcomes (Means et al., 2009).

Limitations

TE must use tools and frameworks, such as the ISTE Standards for Educators, to evaluate PSTs' evolving digital competence. The SoTL project had several unique features, including an instructor who is an active SM user who taught all sections of the course with fidelity. Additionally, she had seniority in the department, agency, and the freedom to redesign the curriculum without interference; this may be difficult to replicate at other institutions. Despite promising results, it is essential to acknowledge certain limitations of the study. First, we used survey data to ascertain PST's XK; survey data could be subject to recall bias. Nevertheless, this data helped guide Author 1 in responding to the immediate needs of PSTs. We mitigated some of the limitations of survey data by analyzing PSTs' lengthier open-ended reflective posts submitted after they used each of the three Performance-based Playlists, and reflections PSTs included in their eportfolio. Furthermore, our prolonged interaction with participants helped enhance the trustworthiness of the data analysis and interpretation. Finally, participants were from a predominantly white rural community in the US; this limitation restricts the generalizability and transferability of the findings to universities that are urban and more diverse.

Conclusion

This paper describes how an education faculty used a pre-session survey to gain insight into 215 PSTs' Contextual Knowledge (XK) regarding access to digital devices and using instructional technology and SM before taking a 100-level course. Data revealed that most PSTs in several sections of the 100-level course were more accustomed to using technologies like PowerPoint and Microsoft Word for teaching and learning. Based on these findings and the UN's Sustainable Goals that call for instruction that develops learners' digital skills (communication/collaboration, problem-solving, safety, content creation, and information/data literacy), Author 1 redesigned the course to align with the ISTE Standards for Educators and included performance-based activities grounded in Situated Learning Theory. In doing so, Author 1 used SM to create a (Socio)Material Space for learning, leading, and digital citizenship. Dividing the semester into three phases —Knowledge in Action, Creation, and Engagement — helped increase PSTs' confidence. PSTs learned how to create and manage their professional digital footprint during the first phase. During this phase, PSTs reflected on and discussed various theoretical frameworks that inform their practice. They also identified SM role models and followed them. During phase two, they participated in performance-based activities grounded in Situated Learning Theory. They created and tested different technologies individually and in small groups. They also shared these digital artifacts with their SM network. During phase three, PSTs utilized Performance-based Playlists to guide the exploration and professional use of Facebook, Twitter, and Instagram. Each Playlist included embedded links to articles and tutorials for each SM type, which made bridging significant gaps in PSTs' SM knowledge and skills easier. Being immersed in each of the three SM types for three weeks provided PSTs with sufficient time to discover the benefits of metaphorically demolishing the classroom walls. They used SM to gain proficiency in self-marketing techniques by creating an online professional presence and using digital tools for public engagement and online reputation management. They discovered they could also use SM to find and prepare for a job.

SM platforms have the potential to both mitigate and exacerbate pedagogical inequalities in higher education. On one hand, they can democratize access to diverse perspectives, resources, and professional networks, especially for students in under-resourced or geographically isolated institutions. On the other hand, unequal access to digital literacy, reliable internet, and culturally responsive content can reinforce existing disparities in engagement and learning outcomes. When thoughtfully integrated into curriculum design, as illustrated in this study, SM can serve as a (Socio)Material space that fosters inclusive dialogue, nurtures professional identity, and enhances students' social awareness and accountability. This paper illustrates how educators can use the SoTL approach to learn more about students' XK before making curricular changes. It also illustrates how educators can use discipline-specific Performance-based Playlists to scaffold transitions, including, but not limited to, SM.

Declarations Conflict of Interests

The authors have no conflict of interest to declare or financial interest to report. The authors have seen and agreed with the contents of the manuscript. The authors certify that the submission is an original work and is not under review at any other publication.

Author (s) Contribution Rate

Both authors contributed significantly to the development of this work. The contribution rates are as follows:

- **Author A**: 60% – Conceptualization, research design, data collection, data analysis, manuscript drafting, critical revisions, and final approval of the version to be published

- **Author B**: 40% – Literature review, SPSS data analysis, graphs, figures and tables development, editing, formatting and critical revisions

Both authors have read and approved the final manuscript.

Ethical Approval

For this study, ethical approval was obtained from the Institutional Review Board (IRB) of Indiana University of Pennsylvania. The study was approved under decision (Log No. 19-254) dated December 02, 2019. Subsequent modifications to the approved research protocol were reviewed and approved by the same IRB on April 22, 2020

References

Anderson, M. (2023, December 11). Teens, social media and technology 2023. Pew Research Center: *Internet, Science & Tech.* Available at https://www.pewresearch.org/internet/2023/12/11/teens-social-media-and-technology-2023/

Ansari, J. A. N., & Khan, N. A. (2020). Exploring the role of social media in collaborative learning the new domain of learning. *Smart Learning Environments, 7*(1), 1–16. https://doi.org/10.1186/s40561-020- 00118-7

Asarta, C. J., Bento, R., Fornaciari, C. J., Lund Dean, K., Arbaugh, J. B., & Hwang, A. (2018). The Scholarship of teaching and learning: Changing the dominant narrative about (and in) research institutions. *Journal of Management Education, 42*(6), 731–748. https://doi.org/10.1177/10525629187772

Aslam, R., Khan, N., & Ahmed, U. (2020). Technology integration and teachers' professional knowledge with reference to international society for technology in Education (ISTE)-standard: A causal study. *Journal of Education and Educational Development, 7*(2), 307–327. https://doi.org/10.22555/joeed.v7i2.31

Boholano, H. B. (2017). Smart social networking: 21st Century teaching and learning skills. *Istraživanja u Pedagogiji/Istraživanja u Pedagogiji, 7*(2), 21–29. https://doi.org/10.17810/2015.45

Boyer, E. L. (1990). Scholarship reconsidered: Priorities of the professoriate. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.

Bruner, L. & Hutchison, A. (2023). Rethinking text features in the digital age: teaching elementary students to navigate digital stories, websites, and videos. *The Reading Teacher, 76*(6), 747–756. https://doi.org/10.1002/trtr.2197

Bruns, A. & Burgess, J. (2015). Twitter hashtags from ad hoc to calculated public. In N. Rambukkana, ed. *Hashtagpublics: the power and politics of discursive networks*. New York: Peter Lang, 13–28.

Calderón-Garrido, D., & Gil-Fernández, R. (2022). Preservice Teachers' Use of General Social Networking Sites Linked to Current Scenarios: Nature and Characteristics. *Technology, Knowledge and Learning*, 1-25. https://doi.org/10.1007/s10758-022-09609-7

Calderon, M. (2021). *Supporting Career Readiness: A Qualitative Study of Practices High School Teachers Employ to Promote Digital Creation and Sharing* (Order No. 28860922). Available from Dissertations & Theses @ Indiana University of Pennsylvania; ProQuest Central; ProQuest Dissertations & Theses Global; Social Science Premium Collection. (2618181450). https://proxy-iup.klnpa.org/login?url=https://www.proquest.com/dissertations-theses/supporting-career-readiness-qualitative-study/docview/2618181450/se-2

Carpenter, J. P., & Harvey, S. (2019). "There's no referee on social media": Challenges in educator professional social media use. *Teaching and Teacher Education, 86*, 102904. https://doi.org/10.1016/j.tate.2019.102904

Carpenter, J., Morrison, S., Craft, M., & Lee, M. (2019, March). Exploring how and why educators use Instagram. In *Society for Information Technology & Teacher Education International Conference* (pp. 2686–2691). Association for the Advancement of Computing in Education (AACE).

Carpenter, J. P., Kimmons, R., Short, C. R., Clements, K., & Staples, M. E. (2019). Teacher identity and crossing the professional-personal divide on Twitter. *Teaching and Teacher Education, 81*, 1–12. https://doi.org/10.1016/j.tate.2019.01.011

Carpenter, J., Green, M., & Laflam, J. (2018). Just between us: Exclusive communications in online socialnetworks. *The Journal of Social Psychology, 158*(4), 405–420. https://doi.org/10.1080/00224545.2018.1431603

Carpenter, J. P., Cook, M. P., Morrison, S. A., & Sams, B. L. (2017). "Why haven't I tried Twitter until now?": Using Twitter in teacher education. *LEARNing Landscapes Journal, 11*(1), 51–64. https://doi.org/10.36510/learnland.v11i1.922

Chang-Kredl, S., & Colannino, D. (2017). Constructing the image of the teacher on Reddit: Best and worst teachers. *Teaching and Teacher Education, 64*, 43-51.

Chapman, A. L., & Marich, H. (2021). Using Twitter for civic education in K-12 classrooms. *TechTrends, 65*(1), 51–61. https://doi.org/10.1007/s11528-020-00542-z

Crompton, H., Burke, D., Gregory, K. H., & Gräbe, C. (2016). The use of mobile learning in science: A systematic review. *Journal of Science Education and Technology, 25*, 149–160. https://doi.org/10.1007/s10956-015-9597-x

Damico, N., & Krutka, D. G. (2018). Social media diaries and fasts: Educating for digital mindfulness with preservice teachers. *Teaching and Teacher Education, 73*, 109-119. https://doi.org/10.1016/j.tate.2018.03.009

Dyck, B. (2017). Reflecting on 25 years of teaching, research, and textbook writing for introduction to management: An essay with some lessons learned. *Journal of Management Education, 41*, 817- 834. https://doi.org/10.1177/105256291769338

Edmonson, S., & Irby, B. J. (2008). *Ten tips for producing a top qualitative research study*. Pearson/Allyn and Bacon.

Eubanks, L., Giles, M., Baker, S., & Willis, J. (2021, March). Social Media as an Educational Tool Among Preservice Teachers. In *Society for Information Technology & Teacher Education International Conference* (pp. 1722-1737). Association for the Advancement of Computing in Education (AACE). https://www.iste.org/standards/iste-standards-for-teachers?_ga=2.73592466.1603484250.1676649825-295230333.1672211689

Giannikas, C. (2020). Facebook in tertiary education: The impact of social media in e-Learning. *Journal of University Teaching & Learning Practice, 17*(1), 3. https://doi.org/10.53761/1.17.1.3

Glassick, C. E., Huber, M. T., & Maeroff, G. I. (1997). *Scholarship assessed: Evaluation of the professoriate*. John Wiley & Sons.

Greenhalgh, S. P. (2021). Differences between teacher-focused Twitter hashtags and implications for professional development. *Italian Journal of Educational Technology, 29*(1), 26–45. ps://doi.org/10.17471/2499-4324/1161

Greenhalgh, S. P., & Koehler, M. J. (2019). Correction to: 28 Days Later: Twitter Hashtags as "Just in Time" Teacher Professional Development. *TechTrends, 63*(4), 499 499. https://doi.org/10.1007/s11528-016-0142-4

Guntara, Y., & Utami, I. S. (2021). Measuring the classification of digital natives use digital natives assessment scale: The implementation on preservice physics teachers in Banten-Indonesia and its implications. *Jurnal Penelitian & Pengembangan Pendidikan Fisika, 7*(2), 161-168. https://doi.org/10.21009/1.07208

Hanc, J. (2016, June 23). Professors as teachers. The New York Times, p. F5.

Hatch, J. A. (2002). Doing qualitative research in education settings. Ithaca: State University of New York Press.

Hutchings, P., Huber, M. T., & Ciccone, A. (2011). *The Scholarship of teaching and learning reconsidered: Institutional integration and impact* (Vol. 21). John Wiley & Sons.

Jin, Y., Clausen, J. M., Elkordy, A., Greene, K., & McVey, M. (2023). Modeling technology use for teacher candidates: Design principles for learning experiences in technology-infused preparation programs. *Contemporary Issues in Technology and Teacher Education, 23*(1). https://citejournal.org/volume-23/issue-1-23/general/design-principles-for-modeled-experiences-in-technology-infused-teacher-preparation

Jin, Y., Clausen, J. M., Elkordy, A., Greene, K., & McVey, M. (2023). Design principles for modeled experiences in technology-infused teacher preparation programs. *Contemporary Issues in Technology and Teacher Education, 23*(1), 151–198.

Jo Dixon, S. (2024, May 17*). Number of social media users worldwide from 2017 to 2028(in billions)*. Statista. Retrieved June 27, 2024, from https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/

Kahveci, N. G. (2015). Preservice teachers' conceptions on use of social media in social studies education. *International Journal of Progressive Education, 11*(1), 82-100.

Kearney, M., Maher, D., & Pham, L. (2020). Investigating preservice teachers' informally-developed online professional learning networks. *Australasian Journal of Educational Technology, 36*(1), 21-36. https://doi.org/10.14742/ajet.4766

Kelly, S., Truong, M., Shahbaz, A., Earp, M., & White, J. (2017). Freedom on the Net 2017. *Freedom House*, 2020-02.

Kelly, N., & Antonio, A. (2016). Teacher peer support in social network sites. *Teaching and Teacher Education, 56*, 138–149. https://doi.org/10.1016/j.tate.2016.02.007

Koutsakas, P., Syritzidou, E., Karamatsouki, A., & Karagiannidis, C. (2019). Exploring the Role of Facebook as a Collaboration Platform in a K-12 MOOC. In *Technology and Innovation in Learning, Teaching and Education: First International Conference, TECH-EDU 2018, Thessaloniki, Greece*, June 20–22, 2018, Revised Selected Papers 1 (pp. 31–48). Springer International Publishing.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.

Machado, C., Hsiao, P. Y., Vaccaro, C., & Baker, C. (2024). Entering the Social Media Stratosphere: Higher Education Faculty Use of Social Media with Students across Four Disciplines. *Journal of Interactive Media in Education, 2024*(1).

Machado, C., & Seifert, T. (2024). Using Flip and Facebook to Create Windows and Mirrors for Transnational Learning: A United States-Israel Scholarship of Teaching and Learning Project. In *Encouraging Transnational Learning Through Virtual Exchange in Global Teacher Education* (pp. 152-171). IGI Global Scientific Publishing.

Marshall, C., & Rossman, G. B. (2014). *Designing qualitative research*. Sage Publications.

McGarr, O., & McDonagh, A. (2020). Exploring the digital competence of preservice teachers on entry onto an initial teacher education programme in Ireland. *Irish Educational Studies, 40*(1), 115–128. https://doi.org/10.1080/03323315.2020.1800501

Miller, C. D. (2022). A Case Study of How Pre-K-12 School Leaders' Knowledge, Skills, and Dispositions of the ISTE Standards Affect Learning Environments (Doctoral dissertation, Louisiana Tech University). Mishra, P. (2019). Considering contextual knowledge: The TPACK diagram gets an upgrade. *Journal of Digital Learning in Teacher Education, 35*(2), 76–78. https://doi.org/10.1080/21532974.2019.1588611

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record, 108*(6), 1017. https://doi.org/10.1111/j.1467-9620.2006.00684.x

Muñoz, C., & Towner, T. (2009, March). Opening Facebook: How to use Facebook in the college classroom. In *Society for Information Technology & Teacher Education International Conference* (pp. 2623–2627). Association for the Advancement of Computing in Education (AACE).

Poth, C., McCallum, K., & Tang, W. (2016). Teacher e-professionalism: An examination of western Canadian preservice teachers' perceptions, attitudes and Facebook behaviours. *Alberta Journal of Educational Research, 62*, 39–60. https://journalhosting.ucalgary.ca/ index.php/ajer/article/view/56161

Raman, A., Thannimalai, R., & Ismail, S. N. (2019). Principals' Technology Leadership and Its Effect on Teachers' Technology Integration in 21st Century Classrooms. *International Journal of Instruction, 12*(4), 423–442. https://doi.org/10.29333/iji.2019.12428a

Rosenberg, J. M., Greenhalgh, S. P., Koehler, M. J., Hamilton, E. R., & Akcaoglu, M. (2016). An investigation of state educational Twitter hashtags (SETHs) as affinity spaces. *E-learning and Digital Media, 13*(1-2), 24–44. https://doi.org/10.1177/2042753016672351

Schroeder, S., Curcio, R., & Lundgren, L. (2019). Expanding the learning network: How teachers use Pinterest. *Journal of Research on Technology in Education, 51*(2), 166–186. https://doi.org/10.1080/15391523.2019.1573354

Shahzad, U., & Bilal, A. (2019). Twitter and Facebook usage for academic motivation among postgraduate students in Lahore, *Pakistan. International and Public Affairs, 3*(1), 20–24. 10.11648/j.ipa.20190301.14

Shatto, B., & Erwin, K. (2016). Moving on from millennials: Preparing for generation Z. *The Journal of Continuing Education in Nursing, 47*(6), 253–254. https://doi.org/10.3928/00220124-20160518-05

Shirky, C. (2011). The political power of social media: Technology, the public sphere, and political change. *Foreign affairs*, pp. 28–41. https://www.jstor.org/stable/25800379

Smith, E. E., Kahlke, R., & Judd, T. (2020). Not just digital natives: Integrating technologies in professional education contexts. *Australasian Journal of Educational Technology*, 1–14. https://doi.org/10.14742/ajet.5689

Sprague, D. R., Zumpano, N. M., Richardson, J. W., Williamson, J., & Gray, L. (2023). Technology Infusion and the Development of Practice: The Quest to Create DigitallyAble Teachers. *Contemporary Issues in Technology and Teacher Education, 23*(1), 199–227. https://www.learntechlib.org/primary/p/221545/

Vizcaya-Moreno, M. F., & Pérez-Cañaveras, R. M. (2020). Social media used and teaching methods preferred by generation Z students in the nursing clinical learning environment: A cross-sectional research study. *International journal of environmental research and public health, 17*(21), 8267. https://doi.org/10.3390/ijerph17218267

Vogels, E. A. (2019). Millennials stand out for their technology use, but older generations also embrace digital life.

Vogels, E. A., Gelles-Watnick, R., & Massarat, N. (2022, December 15*). Teens, social media and technology 2022*. Pew Research Center: Internet, Science & Tech. Retrieved February 26, 2023, from https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/

Warr, M. W., Driskell, S. O. S., Mouza, C., & Schmidt-Crawford, D. A. (2023). Curriculum design for technology infusion requires a continuous collaborative process. *Contemporary Issues in Technology and Teacher Education Journal, 23*(1).

Watson, E. (2020). # Education: The potential impact of social media and hashtag ideology on the classroom. *Research in Social Sciences and Technology, 5*(2), 40–56. https://doi.org/10.46303/ressat.05.02.3

Wiggins, G. P., & McTighe, J. (2005). Understanding by design. Ascd.

Williams, C. A. (2019). Nurse educators meet your new students. *Nurse Educator, 44*(2), 59–60. https://doi.org/10.1097/nne.0000000000000637

Williams, M. K., Christensen, R., McElroy, D., & Rutledge, D. (2023). Teacher self-efficacy in technology integration as a critical component in designing technology-infused teacher preparation programs. *Contemporary Issues in Technology and Teacher Education, 23*(1), 228–259.

Zinskie, C., & Griffin, M. (2020, October). Initial Teacher Preparation Faculty Views and Practices Regarding Social Media and Preservice Teachers. In *SITE Interactive Conference* (pp. 739–742). Association for the Advancement of Computing in Education (AACE).

Appendix A

Facebook Playlist, Week 12

Facebook has just completed 16 years and has more than 2.4 billion active users. Approximately 300 million images are uploaded to Facebook every day. On average, five new profiles are created every second. The most typical age demographic on Facebook is 24-35 years. This age demographic does not include your future students. However, it does include their parents, the teachers and principals with whom you work, and the professional organizations that decide what we need to teach and assess. Teachers, therefore, need to use Facebook for the following reasons:

- To keep abreast of new developments in the field, follow the posts of professional organizations like ISTE, NAEYC, AMLE, etc.
- Connect with other tech-savvy, innovative teachers and principals who share resources and help troubleshoot classroom issues.
- Connect and communicate with parents.

1. Join: Use your teacher's Gmail account to create a Facebook account.

2. Learn the Basics: Watch this 5-minute screencast to learn some of the basics like:

- how to find and join groups.
- how to share content on your page.
- how to comment appropriately.
- how to you produce a screenshot of your activity log.

If you need more guidance, please find tutorials on YouTube to learn more.

3. Follow: To ensure that you receive excellent content in your feed, search for, like, and join the following groups:

- Teaching with Technology
- Teachers using Google Suite for Education
- Technology Teacher Tribe with Brittany Washburn
- Free Tech for Teachers
- Common Sense Media
- Teaching Resources for all
- Technology Integration for Teachers
- Do a keyword search based on your major to find groups that relate specifically to it. Add two to three of those groups.

4. Engage:

- **Comment:** For the next week, spend at least 10 minutes each day reading and commenting on the posts in your feed/home page. The rules for effective online engagement in the virtual world are simple: be kind, cheerful, and helpful; use school-friendly language; and do not provide personal details about your family, friends, and activities.
- **Share:** Practice being a learner and digital citizen by sharing 1-2 daily posts on your timeline. The content you share should relate to technologies you can use in the classroom in the future.

5. Make your Learning Public: Use Nimbus to capture a screenshot of your activity log (see tutorial above). Use the blurring option, where appropriate, to hide the identity of others. Insert this screenshot into your post.

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Adaptation of the Digital Maturity Inventory into Turkish: A Study of Validity and Reliability

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Abstract
The aim of this study is to adapt the Digital Maturity Inventory, originally developed by Laaber et al. (2023), into Turkish and to examine its psychometric properties. As part of the adaptation process, the original English version was translated into Turkish using the back-translation method. The Turkish version of the inventory was administered to 879 undergraduate students from two universities located in the eastern and southern regions of Türkiye across three different time points. Confirmatory Factor Analysis (CFA) was conducted on data collected from 348 students, and the results confirmed the original ten-dimensional structure of the inventory. For criterion-related validity, the Digital Literacy Scale and the Mobile Information Security Awareness Scale were administered to 281 students, and correlation coefficients were calculated. Reliability evidence was evaluated through internal consistency coefficients and composite reliability values. Additionally, to assess the temporal stability of the inventory, it was re-administered to a subsample of 228 students from the CFA group, and test-retest reliability was calculated. The findings indicate that the Turkish version of the Digital Maturity Inventory is a valid and reliable measurement tool.

Keywords: Digital maturity, Scale adaptation, University students

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Introduction

The role of digital technologies in everyday life is steadily increasing. This trend has led to a marked rise both in individuals' use of mobile technologies and in the amount of time they spend online (Kolhar et al., 2021). This increase offers individuals numerous opportunities and conveniences. Digital technologies enhance capabilities such as ease of communication, access to information, problem-solving, attention management, innovativeness, critical thinking, adaptation, participation, and collaboration (Cheng & Siow, 2018; Dekhane et al., 2013). These skills not only facilitate individuals' daily lives but also contribute directly to their educational experiences and professional careers. For today's university students, such competencies are crucial for successfully completing their education and remaining competitive in their future careers (Avdiu et al., 2025; Criollo-C et al., 2021; Purwanto et al., 2023; González-Pérez & Ramírez-Montoya, 2022; Van Laar et al., 2020).

However, alongside the positive effects of digital technologies, there are also several negative consequences. A range of adverse outcomes—such as declines in academic achievement, disruptions in sleep patterns, weakened social relationships, increased procrastination behaviors, and emerging security risks—have been observed as a result of excessive or unmindful use of digital technologies (Criollo-C et al., 2021; Kolhar et al., 2021; Meier, 2022). Therefore, it is essential to evaluate individuals' relationship with digital technologies in terms of both benefits and risks. Today, achieving a balance between maximizing the opportunities offered by digital technologies and avoiding their negative effects is considered a significant concern for researchers. Studies in this area have largely focused on issues such as technology addiction and screen time (Agarwal & Kar, 2015; Brauchli et al., 2024; Kwon et al., 2024; Ning et al., 2025; Park & Chang, 2025; Yufan, 2024). However, approaches that examine individuals' mobile technology habits allow for a more holistic and in-depth understanding of the effects of digital engagement (Meier, 2022; Roffarello & De Russis, 2021).

Because research indicates that both low and excessive use of digital technologies is associated with decreased well-being, whereas moderate use may be linked to higher life satisfaction. In addition, procrastination and passive patterns of use tend to lead to negative outcomes; by contrast, active forms of use that involve social interaction are associated with more positive effects (Dienlin & Johannes, 2020; Meier, 2022; Taylor & Bazarova, 2021). In this context, individuals need to develop a conscious, balanced, and responsible approach to using digital technologies—one that maximizes their benefits while minimizing potential harms.
The concept of digital maturity has emerged as an approach that directly addresses this need. Digital maturity refers to a set of abilities and attitudes that enable individuals to use digital technologies effectively, consciously, and in a balanced manner in ways that support both personal development (growth) and integration into society (adaptation) (Laaber et al., 2023). A review of the literature shows that digital maturity has largely been associated with organizations' readiness and capabilities to use digital technologies effectively (Haryanti et al., 2023; Kane et al., 2017; Rader, 2019). However, in recent years, as attention has increasingly shifted to the individual-level effects of digital technologies and their responsible use, digital maturity has begun to be considered an important concept for individuals as well (Hofmans et al., 2024).

In particular, as digitalization has begun to play a decisive role across all spheres of social life, individuals' ability to work with these technologies effectively and adaptively has become increasingly dependent on their digital competencies. In Türkiye, the limited number of studies that aim to measure levels of digital maturity indicates a need for further research on this concept at the individual level. By adapting an internationally validated scale into Turkish, the present study aims to make a significant contribution to the measurement of individual digital maturity. It also seeks to propose actionable strategies for improving individuals' digital skills. Moreover, assessing levels of digital maturity has the potential to inform strategic decision-making across a wide range of domains—from education policies to organizations' human resources practices. Therefore, this study has the potential to offer practical and tangible contributions not only to the academic community but also to practitioners.

Related Literature

Maturity is a multidimensional construct encompassing technology, personal development, and physical growth (Rodríguez Salvado et al., 2019). Within this multifaceted structure, digital maturity is regarded as a critical concept for understanding individuals' interactions with digital technologies and for identifying the societal, economic, and cultural effects of these interactions (van Laar et al., 2020). Digital maturity is defined as a set of competencies, values, and attitudes that enable individuals to use digital technologies effectively and responsibly in both personal development and social adaptation processes (Laaber et al., 2023). In addition, digital maturity is closely related to individuals' digital skills, levels of digital awareness, and their overall attitudes toward the digital

world (van Laar et al., 2020). Importantly, this concept extends beyond technical skills to include cognitive and behavioral components such as self-directed learning, problem solving, ethical conduct in digital environments, and digital citizenship. Digital maturity encompasses individuals' ability to navigate digital tools effectively, use them for learning and personal development, manage technology ethically and responsibly, act with a sense of digital citizenship, and develop critical thinking skills (Awdziej et al., 2023). In this respect, digital maturity is considered within a framework shaped throughout the developmental trajectory from adolescence to adulthood (Hofmans et al., 2024). In particular, it serves as an important indicator for assessing young individuals' capacity to use digital technologies in healthy, productive, and adaptive ways (Hofmans et al., 2024). When discussed within the digital competence framework, digital maturity requires individuals to use digital tools, platforms, and resources not only in terms of technical proficiency but also by integrating ethical, social, and cognitive dimensions. From a sustainability perspective, digital maturity may also promote environmentally conscious behaviors by encouraging individuals to use digital resources more effectively and mindfully—for instance, by participating in online education to reduce physical travel and, consequently, lower their carbon footprints (Awdziej et al., 2023).

A review of the literature indicates that the concept of digital maturity is associated with a range of digital skills, including digital literacy, digital citizenship, and digital well-being (Awdziej et al., 2023; Çelik et al., 2025; Hofmans et al., 2024). Digital literacy refers to individuals' ability to use digital technologies and media tools in meaningful, critical, creative, and safe ways (Martin, 2008; Reddy et al., 2020). Digital citizenship encompasses individuals' responsible, ethical, safe, and effective behavior in digital environments and includes elements such as awareness of digital rights and responsibilities, respectful conduct in online settings, and making positive contributions to the digital world (Choi et al., 2017; De Moraes & De Andrade, 2015). Digital well-being, in turn, refers to individuals' feeling psychologically and physically well by using digital technologies in a balanced, safe, healthy, and purposeful manner (Büchi, 2024; Vanden Abeele, 2021). In this context, digital maturity provides a comprehensive framework that holistically integrates skills such as digital literacy, digital citizenship, and digital well-being, reflecting individuals' capacity not only to use digital technologies but also to manage them ethically, strategically, consciously, and in a balanced manner (Koch et al., 2024; Laaber et al., 2023). In conceptualizing digital maturity, Laaber et al. (2023) described three core capabilities that directly address digital challenges to support young people's positive individual and social development: (1) using digital technologies autonomously and in a self-determined way, (2) coping with increasing digital challenges and solving problems, and (3) engaging adequately with others and contributing to society.

The capacity to use digital technologies autonomously and in a self-determined manner refers to individuals' ability to manage digital tools independently and consciously (Laaber et al., 2023). This competence helps individuals mitigate the adverse effects of digital consumption and enables them to regulate their behaviors in digital environments more effectively (Kozyreva et al., 2020; Turel et al., 2020). In particular, the ability to make one's own decisions and self-regulate one's actions contributes to coping with major challenges of the digital age, such as digital addiction and ethical issues (Yamamoto & Ananou, 2015). The capacity to cope with digital challenges and solve problems, in turn, encompasses individuals' ability to generate effective and creative solutions to problems encountered in digital environments. This capacity is directly associated with individuals' ability to self-direct their learning processes through digital technologies and enhance their academic performance (Laaber et al., 2023; Rashid & Asghar, 2016). Indeed, recent research shows that digital competence increases students' engagement in online learning and supports their psychological well-being (Dunn & Kennedy, 2019; Haleem et al., 2022).

Finally, the capacity to interact effectively with others and contribute to society refers to individuals' strengthening of social ties and active participation in social life through the use of digital technologies (Laaber et al., 2023). Research on the effects of digital technologies on public behavior suggests that negative factors such as social isolation and digital addiction can weaken social interaction (Altanlar et al., 2024; Marsh et al., 2022). However, the conscious and balanced use of these technologies has the potential to enhance social engagement and interaction (Laaber et al., 2023; Wang et al., 2021).

In the related literature, it is evident that most efforts have focused on developing scales designed to assess organizations' levels of digital maturity (Balyer et al., 2023; Begicevic Redjep et al., 2021; Kayabaşı & Kasımoğlu, 2023; Tutar & Erdem, 2024; Zugec et al., 2018). However, the absence of a Turkish scale for measuring individuals' digital maturity points to a significant gap in this field. The cultural adaptation of an instrument with established psychometric properties from another language is widely regarded as a more reliable and time-efficient approach than developing a new scale from scratch (Beaton et al., 2000; Hambleton & Patsula, 1998). Therefore,

the Digital Maturity Scale developed by Laaber et al. (2023) was adapted into Turkish in the present study. Through this process, the study aims to provide a comprehensive assessment tool that can support individuals in developing healthier orientations in their digital lives and participating more effectively in digital transformation processes.

Method

In this study, a quantitative research design was employed to examine the psychometric properties of the Digital Maturity Inventory. Quantitative research aims to obtain objective, measurable, and generalizable results and explains cause–effect relationships based on numerical data (Fraenkel et al., 2012).

Original Structure of the Inventory

The inventory developed by Laaber et al. (2023) is grounded in psychosocial maturity and self-determination theory. The original version of the inventory was developed in English, and its psychometric properties were examined in the 12–18 age group. In addition, Hofmans et al. (2024) administered the scale to a broader sample aged 9–48. The scale uses a five-point Likert format (1 = Never to 5 = Always) and consists of 32 items. It conceptualizes digital maturity through three overarching capacities: (1) the capacity to use digital technologies autonomously and in a self-determined way, (2) the capacity to cope with increasing digital challenges and solve problems, and (3) the capacity to interact sufficiently with others and contribute to society. The inventory includes the following subdimensions: autonomous choice in using mobile devices, autonomy in digital contexts, digital literacy, individual growth in digital contexts, awareness of digital risks, seeking support for digital problems, regulation of negative emotions in digital contexts, regulation of impulses in digital contexts, respect for others in digital contexts, and digital citizenship (Laaber et al., 2023). The autonomy in digital contexts items (Items 1, 2, and 3), regulation of negative emotions in digital contexts items (Items 20, 21, and 22), and regulation of impulses in digital contexts items (Items 23, 24, and 25) include negatively worded statements and are reverse-coded. Higher scores on the inventory indicate higher levels of digital maturity.

Digital technology use is a broad concept that encompasses various devices, services, and patterns of use (Dienlin & Johannes, 2020). The fact that self-reported technology use shows only weak correlations with objective measures raises validity concerns (Lee et al., 2017; Parry et al., 2021; Scharkow, 2016). In particular, grouping different digital technologies under a single category reduces the sensitivity of measurement in this field. To obtain more reliable results, the use of different digital technologies should be examined through objective and detailed assessments (Dienlin & Johannes, 2020). Accordingly, as in the original version of the inventory, the Turkish adaptation process also introduced a restriction by adding the phrase “when using mobile devices…” to the items in the Digital Maturity Inventory.

The adaptation process of the inventory was conducted in accordance with procedures recommended in the literature. This process includes conducting a needs analysis, selecting an appropriate instrument, translating the scale into the target language, performing a back-translation, completing an initial linguistic validation, administering the instrument to the study group, conducting validation procedures, performing reliability analyses, and reporting the results (Hambleton & Patsula, 1998; Perneger et al., 1999). Permission was obtained from the original authors prior to the Turkish adaptation. Following established guidelines, the linguistic adaptation involved forward translation, back-translation, expert review, preparation of a pretest version, and submission of the final form to experts (Beaton et al., 2000). In the forward translation stage, the scale items were translated into Turkish by two experts in information technologies who were fluent in the target language and had a strong understanding of the source language (Beaton et al., 2000; Guillemin et al., 1993). The translated items were then reviewed by four faculty members—two experts in information technologies and two experts from the Department of Educational Measurement and Evaluation—and revised in line with their feedback. The revised items were subsequently examined by two Turkish language experts. In the back-translation stage, the Turkish items were translated back into English and compared with the original scale by two English language experts to ensure semantic equivalence (Beaton et al., 2000). Necessary revisions were made based on the experts’ recommendations. Cognitive interviews were conducted with five students to assess whether the target group understood the items as intended by the scale developers. Participants were asked to verbalize their thoughts while responding to the items, and verbal probing was used to gain deeper insight into their comprehension and decision-making processes (Peterson et al., 2017). In addition, a pilot test was conducted with 25 students to evaluate item clarity and comprehensibility. Following these steps, the Turkish version of the inventory was finalized and deemed ready for administration. To establish nomological/criterion validity, two theoretically related measures were administered: the Digital Literacy Scale and the Mobile Information Security Awareness Scale. The Digital

Literacy Scale, developed by Ng (2012) and adapted into Turkish by Üstündağ et al. (2017), consists of 10 items. The Mobile Information Security Awareness Scale was developed by Erdoğdu et al. (2021) and includes 17 items. These instruments were selected because the Digital Literacy Scale assesses individuals' ability to use digital technologies effectively and safely, while the Mobile Information Security Awareness Scale evaluates awareness of mobile security—both of which are theoretically associated with digital maturity (Laaber et al., 2023).

Study Group

The participants in this study consisted of 923 volunteer undergraduate students enrolled at two universities in Türkiye. However, data from 44 students were excluded because they did not respond correctly to the attention-check item ("To indicate that you have read and understood this sentence, please select 'Never'.") (Kung et al., 2018). Accordingly, all analyses were conducted on data from 879 students. A convenience sampling method was employed to ensure that the data collection process could be carried out efficiently and effectively. Data were collected across three different time points, referred to as T1, T2, and T3. At T1, 348 students completed the questionnaire. This sample size was considered sufficient for conducting CFA, as it exceeded the recommended thresholds for accurate estimation (Hu & Bentler, 1999; Kline, 1994). During the second data collection phase (T2), students from a different university completed the Digital Maturity Inventory along with the Digital Literacy Scale and the Mobile Information Security Awareness Scale. The data obtained from 281 participants were used to assess criterion validity. In the third phase (T3), after a four-week interval, the Digital Maturity Inventory was re-administered to 228 undergraduate students, and test–retest reliability was examined.

Across all phases of data collection, the aims of the study were clearly explained to the participants. Participants were assured that their responses would be used solely for scientific research purposes and would not be shared with third parties. Throughout the process, necessary instructions were provided to facilitate participation in the survey, and sufficient time was allocated for completing the questionnaire. In line with ethical principles, the study ensured the confidentiality and anonymity of all participants' responses. Ethical approval for the instruments used in the study was obtained from the Hatay Mustafa Kemal University Social and Humanities Research Ethics Committee (Decision No. 24, dated January 10, 2025). Table 1 presents information on the participants' demographic profiles.

Table 1. Demographic Information of the Study Group

Variable		Pre-pilot Sample		CFA Sample (T1)		Criterion Validity Sample (T2)		Test–retest Sample (T3)	
		N	%	N	%	N	%	N	%
Gender	Female	9	41.0	235	67.5	196	69.8	158	69.3
	Male	13	59.0	113	32.5	85	30.2	70	30.7
Year of study	1st year	5	23.0	69	19.8	50	17.8	56	24.56
	2nd year	7	32.0	37	10.6	54	19.2	62	27.19
	3rd year	6	27.0	60	17.2	152	54.1	56	24.56
	4th year	4	18.0	182	52.3	25	8.9	54	23.69
	Total	22		348		281		228	

CFA: Confirmatory Factor Analysis

In the pre-pilot sample, 41% of the participants were female and 59% were male. Participants were distributed across four year levels, with the highest participation coming from 2nd-year students (32.0%). In the CFA sample (T1, N = 348), 67.5% of the participants were female and 32.5% were male. In this group, the largest proportion consisted of 4rth-year students (52.3%), while first-year (19.8%), 3rd-year (17.2%), and 2nd-year (10.6%) students were also represented. In the criterion validity sample (T2, N = 281), female participants constituted the majority (69.8%), whereas male participants accounted for 30.2%. In this group, the highest participation rate was observed among third-year students (54.1%). In the test–retest sample (T3, N = 228), 69.3% of participants were female and 30.7% were male. Within this sample, 27.19% of the students were in their second year, 24.56% were in their first year, 24.56% were in their third year, and 23.69% were in their fourth year.

Data Analysis

Across all datasets, missing values were first examined. To assess normality, skewness and kurtosis values were inspected. The skewness and kurtosis values for the CFA, criterion validity, and test–retest datasets indicated that the data were normally distributed (Tabachnick & Fidell, 2013). Confirmatory factor analysis (CFA) was conducted to verify the underlying factor structure of the inventory (Hinkin, 1998). Within the CFA framework, several fit indices were calculated to evaluate model fit, including the chi-square goodness-of-fit ratio (χ^2/df), the goodness-of-fit index (GFI), the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the standardized root mean square residual (SRMR) (Brown, 2015; Harrington, 2009). To indicate good fit, χ^2/df values below 3, CFI and TLI values above .90, and RMSEA and SRMR values below .08 are generally expected (Hu & Bentler, 1999). For convergent validity, the average variance extracted (AVE) and composite reliability (CR) values were calculated. AVE values of at least .50 and CR values higher than AVE are recommended (Fornell & Larcker, 1981). Correlation coefficients of .50 or above between parallel measures are considered acceptable evidence of validity (Cohen, 2013). To assess internal reliability, Cronbach's alpha coefficients were computed, with values above .70 considered sufficient for internal consistency (DeVellis, 2021; Nunnally & Bernstein, 1994). To establish criterion validity, the Digital Literacy Scale and the Mobile Information Security Awareness Scale were administered, and correlation coefficients were calculated. In the third phase, test–retest analysis was conducted to evaluate the temporal stability of the scale. For test–retest reliability, statistical significance at $p < .01$ is typically expected (DeVellis, 2021; Nunnally & Bernstein, 1994), and correlation coefficients above .50 indicate a strong relationship (Cohen, 2013).

Results

This section presents the findings obtained from the study, along with interpretations based on these results.

Underlying Factor Structure

Confirmatory factor analysis (CFA) was conducted to determine the extent to which the factor structure originally proposed for the Digital Maturity Inventory developed by Laaber et al. (2023) fit the version adapted to the Turkish context. Figure 1 presents the CFA model for the Turkish form of the inventory.

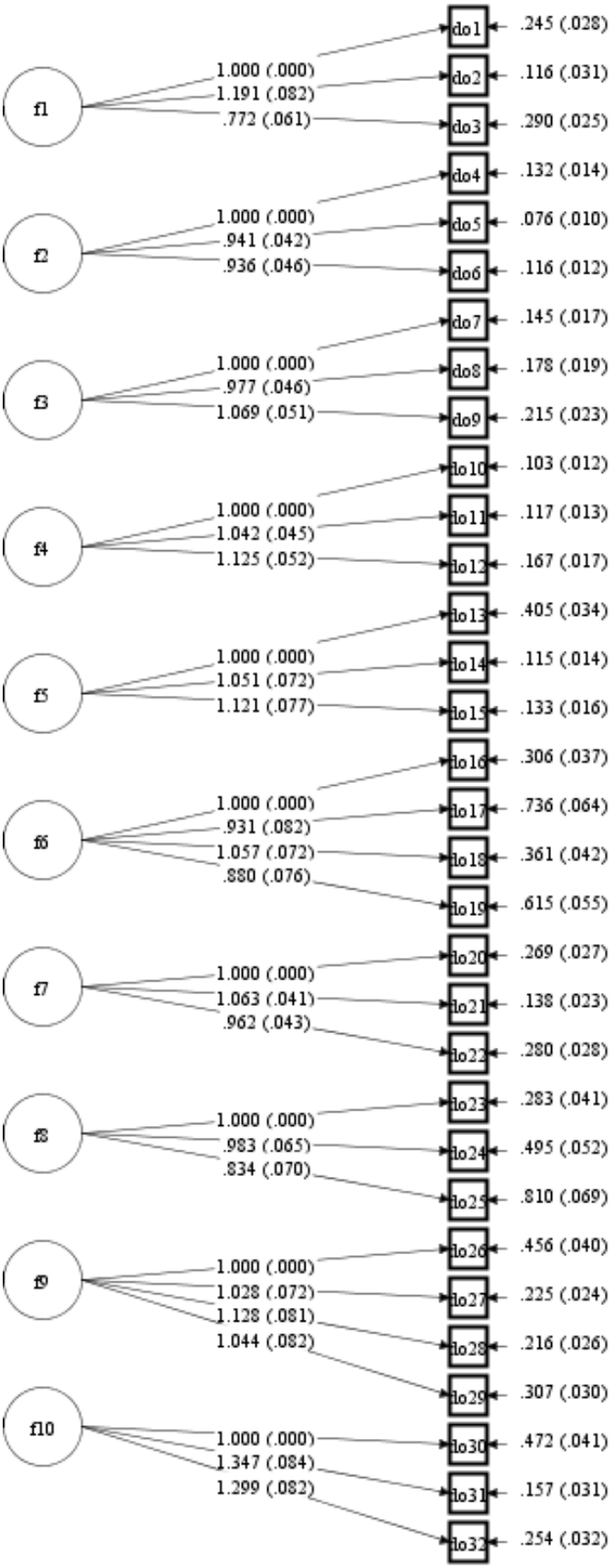

Figure 1. CFA Results for the Turkish Form of the Digital Maturity Inventory

The fit indices obtained from the analysis were $\chi^2/df = 1.91$, RMSEA = .04, CFI = .95, TLI = .94, and SRMR = .04. These values indicate that the model demonstrates good fit. Accordingly, the ten-dimensional structure of the Turkish version of the Digital Maturity Inventory was supported. Standardized estimates of the factor loadings for the Turkish form of the inventory, along with their significance levels, are presented in Table 2.

Descriptive Statistics

Table 2 presents descriptive statistics for the Digital Maturity Inventory, including factor loadings, kurtosis, skewness, means, and standard errors.

Table 2. Factor Loadings and Descriptive Statistics for the Digital Maturity Inventory

Factor		M	SD	Skewness	Kurtosis	Factor Loading	SE	Z	p
Autonomous Choice in Using Mobile Devices	Item1	2.14	0.804	0.501	0.133	0.788	0.023	36.371	0.000
	Item2	2.17	0.828	0.518	-0.108	0.912	0.019	52.149	0.000
	Item3	2.11	0.728	0.085	-0.525	0.672	0.032	21.176	0.000
Autonomy in Digital Contexts	Item4	4.09	0.716	-0.852	1.352	0.862	0.018	49.003	0.000
	Item5	4.17	0.643	-0.632	1.287	0.903	0.015	61.227	0.000
	Item6	4.20	0.670	-0.606	0.666	0.861	0.018	47.796	0.000
Digital Literacy	Item7	4.16	0.828	-0.835	0.221	0.887	0.016	55.251	0.000
	Item8	4.23	0.833	-1.097	1.002	0.862	0.018	48.620	0.000
	Item9	4.05	0.912	-0.755	-0.107	0.861	0.018	48.186	0.000
Individual Growth in Digital Contexts	Item10	4.21	0.707	-0.880	1.263	0.891	0.015	58.305	0.000
	Item11	4.14	0.740	-0.788	1.041	0.887	0.015	57.751	0.000
	Item12	4.07	0.818	-0.890	0.962	0.866	0.017	50.964	0.000
Digital Risk Awareness	Item13	3.87	0.881	-0.384	-0.366	0.691	0.031	22.087	0.000
	Item14	4.36	0.724	-0.986	0.701	0.883	0.017	52.132	0.000
	Item15	4.28	0.774	-1.052	0.988	0.882	0.017	51.979	0.000
Seeking Support for Digital Problems	Item16	3.88	0.947	-0.700	-0.054	0.811	0.027	29.566	0.000
	Item17	3.30	1.117	0.144	-1.202	0.639	0.038	16.982	0.000
	Item18	3.87	1.010	-0.863	0.301	0.803	0.027	29.653	0.000
	Item19	3.66	1.036	-0.577	-0.274	0.652	0.037	17.747	0.000
Regulation of Negative Emotions in Digital Contexts	Item20	2.26	1.097	0.630	-0.426	0.881	0.013	67.033	0.000
	Item21	2.16	1.092	0.767	-0.220	0.940	0.010	96.205	0.000
	Item22	2.17	1.070	0.737	-0.186	0.869	0.016	55.567	0.000
Regulation of Impulses in Digital Contexts	Item23	2.08	1.032	0.770	-0.179	0.857	0.023	38.003	0.000
	Item24	2.18	1.119	0.753	-0.239	0.777	0.026	29.846	0.000
	Item25	2.34	1.165	0.523	-0.689	0.633	0.035	19.011	0.000
Respect for Others in Digital Contexts	Item26	3.99	0.950	-0.662	-0.469	0.702	0.032	21.972	0.000
	Item27	4.13	0.834	-0.757	0.039	0.822	0.023	35.167	0.000
	Item28	4.22	0.884	-1.070	0.716	0.851	0.021	40.823	0.000
	Item29	4.23	0.890	-1.201	1.307	0.782	0.026	30.704	0.000
Digital Citizenship	Item30	3.64	0.999	-0.333	-0.515	0.723	0.029	25.001	0.000
	Item31	3.51	1.048	-0.378	-0.464	0.926	0.016	58.231	0.000
	Item32	3.52	1.063	-0.375	-0.553	0.880	0.018	49.921	0.000

As shown in Table 2, the factor loadings of the items in the inventory ranged from 0.633 to 0.940, and all loadings were statistically significant. Table 3 presents the results of the correlation analysis examining the relationships among the subdimensions of the scale.

Table 3. Correlations Among the Subdimensions of the Digital Maturity Inventory

Factors	1	2	3	4	5	6	7	8	9	10	11
1. Digital Maturity Inventory (total)	1										
2. Autonomous Choice in Using Mobile Devices	.222**	1									
3. Autonomy in Digital Contexts	.585**	-.090	1								
4. Digital Literacy	.612**	-.006	.582**	1							
5. Individual Growth in Digital Contexts	.664**	-.006	.557**	.600**	1						
6. Digital Risk Awareness	.691**	.004	.564**	.639**	.666**	1					
7. Seeking Support for Digital Problems	.615**	-.082	.338**	.329**	.352**	.412**	1				
8. Regulation of Negative Emotions in Digital Contexts	.273**	.183**	-.150**	-.128*	-.112*	-.192**	.031	1			
9. Regulation of Impulses in Digital Contexts	.257**	.251**	-.131*	-.141**	-.166**	-.158**	.049	.656**	1		
10. Respect for Others in Digital Contexts	.623**	-.041	.422**	.367**	.442**	.497**	.354**	-.130**	-.180**	1	
11. Digital Citizenship	.601**	.054	.218**	.181**	.356**	.382**	.356**	.002	-.007	.453**	1

According to the correlation analysis, the Digital Maturity Inventory total score was positively and significantly associated with all subdimensions. The strongest relationships were observed with digital risk awareness (r = .691), individual growth in digital contexts (r = .664), and digital literacy (r = .612). Seeking support for digital problems (r = .615), autonomy in digital contexts (r = .585), and respect for others in digital contexts (r = .623) also showed significant, moderate associations with digital maturity. In contrast, autonomous choice in using mobile devices (r = .222), regulation of negative emotions in digital contexts (r = .273), and regulation of impulses in digital contexts (r = .257) exhibited relatively weaker relationships. Overall, these findings indicate that the total score is meaningfully related to each subdimension and support the multidimensional nature of digital maturity.

Criterion-Related Validity

To examine the criterion-related validity of the Digital Maturity Inventory, the Digital Literacy Scale and the Mobile Information Security Awareness Scale were used. A correlation analysis was conducted to determine the relationships among the scales, and the findings are presented in Table 4.

Table 4. Correlations for the Criterion-Related Validity of the Digital Maturity Inventory

	Digital Literacy Scale	Mobile Information Security Awareness Scale
Digital Maturity Inventory (Total)	.563**	.591**

**p<.01

As shown in Table 4, the Digital Maturity Inventory was positively and significantly correlated with the Digital Literacy Scale (r = .563, p < .01) and the Mobile Information Security Awareness Scale (r = .591, p < .01).

Reliability

To evaluate the reliability of the Digital Maturity Inventory, Cronbach's alpha internal consistency coefficients were calculated using the CFA sample. In addition, the test–retest method was employed to examine the temporal stability of the instrument. The findings are presented in Table 5.

Table 5. Reliability Estimates for the Digital Maturity Inventory

Factors	Cronbach's α (CFA sample)	CR	AVE	Test–retest method
1. Digital Maturity Inventory	0.866	0.985	0.681	.875**
2. Autonomous Choice in Using Mobile Devices	0.831	0.837	0.635	.801**
3. Autonomy in Digital Contexts	0.905	0.908	0.766	.862**
4. Digital Literacy	0.902	0.903	0.756	.702**
5. Individual Growth in Digital Contexts	0.910	0.913	0.777	.710**
6. Digital Risk Awareness	0.846	0.862	0.678	.824**

7. Seeking Support for Digital Problems	0.814	0.819	0.534	.723**
8. Regulation of Negative Emotions in Digital Contexts	0.929	0.931	0.818	.742**
9. Regulation of Impulses in Digital Contexts	0.810	0.818	0.603	.898**
10. Respect for Others in Digital Contexts	0.864	0.869	0.626	.854**
11. Digital Citizenship	0.876	0.883	0.718	.865**

**p<.01

According to the results, the Cronbach's alpha internal consistency coefficient for the Digital Maturity Inventory was .866. The Cronbach's alpha coefficients for the subdimensions ranged from .810 to .929, indicating a high level of internal consistency. In addition, the test–retest method was used to examine whether the Digital Maturity Inventory produced consistent results over time. This analysis was conducted with data collected from 228 university students randomly selected from the CFA sample, with a four-week interval between administrations. The correlation coefficient between the two administrations was .875 for the total inventory score and ranged from .702 to .865 for the subdimensions. Moreover, the composite reliability (CR) value, calculated to evaluate overall reliability, was .985, and the average variance extracted (AVE) value, calculated to assess convergent validity, was .681. Taken together, these findings indicate that the Digital Maturity Inventory is a highly reliable measurement instrument.

Ethics approval notification

Ethical permission (10.01.2025–24) was obtained from the Hatay Mustafa Kemal University Social and Humanities Research Ethics Committee for this research on January 10, 2025, with Decision Number 24.

Discussion and Conclusion

The purpose of this study was to establish the validity and reliability of the Turkish version of the Digital Maturity Inventory developed by Laaber et al. (2023) for assessing students' levels of digital maturity. Examining the psychometric properties of the scale demonstrates its suitability for adaptation to the Turkish cultural context and its potential to measure individuals' digital maturity levels.

A quantitative research design was employed in this study, and data were collected from 879 undergraduate students enrolled at two universities in Türkiye using a convenience sampling method. Data collection was conducted across three time points (T1, T2, and T3). At T1, confirmatory factor analysis (CFA) was performed. At T2, for criterion validity, the inventory was administered together with the Digital Literacy Scale and the Mobile Information Security Awareness Scale. At T3, test–retest reliability was evaluated. In the data analysis process, missing data and distributional normality were first examined. The underlying factor structure of the scale was then confirmed via CFA, and model fit indices (χ^2/df, GFI, RMSEA, CFI, and SRMR) were evaluated. For convergent validity, AVE and CR values were calculated, and parallel test analyses were conducted to assess criterion validity. Internal consistency was examined using Cronbach's alpha coefficients.

The CFA results indicated that the original ten-subdimension structure of the scale was also supported in the Turkish sample. The subdimensions Autonomous Choice in Using Mobile Devices, Regulation of Negative Emotions in Digital Contexts, and Regulation of Impulses in Digital Contexts consist of negatively worded items. These items were reverse-coded when calculating the total score. The fit indices obtained from the CFA were within acceptable ranges (Brown & Moore, 2012; Hu & Bentler, 1998), indicating that the inventory is appropriate for assessing individuals' levels of digital maturity in Türkiye. Correlation analyses among the subdimensions of the Digital Maturity Inventory revealed significant associations across all subdimensions, supporting the multidimensional nature of digital maturity. Convergent validity analyses further demonstrated that AVE and CR values were at acceptable levels (Fornell & Larcker, 1981). Criterion validity analyses showed that the Digital Maturity Inventory was significantly related to the Digital Literacy Scale and the Mobile Information Security Awareness Scale, suggesting consistency with other instruments measuring theoretically similar constructs. Reliability analyses indicated that Cronbach's alpha coefficients exceeded .70, demonstrating high internal consistency and coherence among items. Test–retest reliability was also found to be acceptable, indicating that the scale provides stable measurements over time.

Digital maturity encompasses individuals' competencies to use digital technologies consciously, responsibly, and effectively. In today's world, where digital technologies are increasingly pervasive across all areas of life, determining individuals' levels of digital maturity has become an important necessity. In this context, the subdimensions included in the Turkish-adapted inventory capture distinct facets of digital maturity. Autonomous choice in using mobile devices refers to individuals' ability to make decisions about mobile device use independently of external influences (Nikou & Economides, 2017; Ye & Kankanhalli, 2018). Autonomy in digital

contexts points to individuals' capacity to set their own goals in digital environments and act in line with those goals (Boud, 2012). Digital literacy encompasses individuals' competencies to accurately understand, evaluate, and effectively use digital content (Dobson & Willinsky, 2009). Individual growth in digital contexts is based on individuals' ability to use digital tools efficiently for personal and professional development (Gamrat & Zimmerman, 2021). Digital risk awareness involves recognizing potential threats in online environments and being aware of the precautions needed to address these threats (Galinec & Luić, 2020; Tirocchi et al., 2022). Seeking support for digital problems refers to individuals' competencies to identify appropriate sources of help and benefit from these resources when encountering problems in digital environments (Pan et al., 2020). Regulation of negative emotions in digital contexts captures individuals' ability to manage negative emotions such as stress and anxiety experienced in digital environments (Gianesini & Brighi, 2015; Van Deursen et al., 2015). Regulation of impulses in digital contexts involves individuals' capacity to manage immediate and uncontrolled reactions, particularly those that may arise on platforms such as social media (Uppal, 2024; Zahrai et al., 2022). Respect for others in digital contexts reflects individuals' responsibility to engage in online interactions with empathy and to act within the framework of civility and ethical norms (Bollen, 2024; Marín-López et al., 2019). Finally, digital citizenship refers to individuals' acting as informed digital citizens who are aware of their rights and responsibilities in digital environments and who contribute to society (Richardson & Milovidov, 2019). Each of these subdimensions represents a different aspect of digital maturity and collectively contributes to individuals' ability to adopt a balanced, ethical, and conscious stance in digital life (Laaber et al., 2023). The Turkish version of the Digital Maturity Inventory provides an important tool for researchers and educators who aim to assess university students' digital competencies. The inventory can be used to evaluate the effectiveness of digital skills development programs, digital literacy training, and other educational interventions implemented in universities. Moreover, universities may use this inventory to identify students' levels of digital maturity and to design course content or workshops aimed at enhancing these competencies. Overall, this study is expected to make a meaningful contribution to research on digital maturity in higher education in Türkiye.

Limitations

Although the Turkish adaptation of the Digital Maturity Inventory demonstrates the required psychometric properties, the present study has several limitations. These limitations also offer valuable directions for future research. First, because the sample consisted of students from only two universities in Türkiye, future studies may further examine the psychometric properties of the instrument using larger and more diverse samples. Second, because the data were collected solely through self-report measures, social desirability bias may have influenced the results; therefore, future research is encouraged to employ alternative data collection methods (e.g., behavioral or objective indicators). Third, this study did not test the longitudinal (temporal) invariance of the inventory. Given the rapid pace of technological change, students' levels of digital maturity may vary over time or depending on the type of technology used. Accordingly, the items in the inventory may need to be updated to better reflect such changes. Finally, because this study assessed digital maturity primarily with a focus on mobile technologies, future instruments could be developed to also incorporate emerging contemporary technologies, including artificial intelligence.

Ethical Approval

Ethical approval for this study was granted by the Hatay Mustafa Kemal University Social and Humanities Research Ethics Committee on January 10, 2025, under Decision Number 24.

References

Agarwal, V., & Kar, S. K. (2015). Technology addiction in adolescents. *Journal of Indian Association for Child and Adolescent Mental Health*, *11*(3), 170-174. https://doi.org/10.1177/0973134220150301

Altanlar, A., Aktuğlu Aktan, E. Ö., & Eren, İ. (2024). Development, Reliability, and Validity of the Influences of Digital Technologies on Human Behavior in Public Space Scale Tested by Spatial Design Experts. *SAGE Open*, *14*(3), 21582440241284589. https://doi.org/10.1177/21582440241284589

Avdiu, E., Bekteshi, E., & Gollopeni, B. (2025). Learning skills for the future–implementing the 21st-century learning. *Multidisciplinary Science Journal*, *7*(1), 2025011-2025011. https://doi.org/10.31893/multiscience.2025011

Awdziej, M., Jaciow, M., Lipowski, M., Tkaczyk, J., & Wolny, R. (2023). Students digital maturity and its implications for sustainable behavior. *Sustainability*, *15*(9), 7269. https://doi.org/10.3390/su15097269

Balyer, A., Özcan, K., & Öz, Ö. (2023). Okulların Dijital Olgunluğu Ölçeği Uyarlama Çalışması. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, *24*(2), 1351-1369. https://doi.org/10.17679/inuefd.1135247

Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine*, *25*(24), 3186-3191. https://doi.org/10.1097/00007632-200012150-00014

Begicevic Redjep, N., Balaban, I., & Zugec, B. (2021). Assessing digital maturity of schools: framework and instrument. *Technology, Pedagogy and Education*, *30*(5), 643-658. https://doi.org/10.1080/1475939X.2021.1944291

Bollen, C. (2024). A conceptual and ethical framework for empathy and communication technologies. *Technology in Society*, *79*, 102707. https://doi.org/10.1016/j.techsoc.2024.102707

Boud, D. (2012). *Developing student autonomy in learning*. Routledge. https://doi.org/10.4324/9780203059036

Brauchli, V., Sticca, F., Edelsbrunner, P., von Wyl, A., & Lannen, P. (2024). Are screen media the new pacifiers? The role of parenting stress and parental attitudes for children's screen time in early childhood. *Computers in Human Behavior*, *152*, 108057. https://doi.org/10.1016/j.chb.2023.108057

Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. Guilford publications.

Brown, T. A., & Moore, M. T. (2012). Confirmatory factor analysis. *Handbook of structural equation modeling*, *361*, 379.

Büchi, M. (2024). Digital well-being theory and research. *New Media & Society*, *26*(1), 172-189. https://doi.org/10.1177/14614448211056851

Cheng, S., & Siow, H. L. (2018). The impact of mobile technology on the learning of management science and the development of problem-solving skills. *Innovations in open and flexible education*, 133-139. https://doi.org/10.1007/978-981-10-7995-5_12

Choi, M., Glassman, M., & Cristol, D. (2017). What it means to be a citizen in the internet age: Development of a reliable and valid digital citizenship scale. *Computers & education*, *107*, 100-112. https://doi.org/10.1016/j.compedu.2017.01.002

Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*.(2. baskı). Lawrence Erlbaum Associates. https://doi.org/10.4324/9780203771587

Criollo-C, S., Guerrero-Arias, A., Jaramillo-Alcázar, Á., & Luján-Mora, S. (2021). Mobile learning technologies for education: Benefits and pending issues. *Applied Sciences*, *11*(9), 4111. https://doi.org/10.3390/app11094111

Çelik, S., Gracia, P., & Tarantino, G. (2025). Adolescent Digital Engagement and Mental Well-Being: A Study on Digital Maturity. https://doi.org/10.31219/osf.io/dcazr_v1

De Moraes, J. A., & De Andrade, E. B. (2015). Who are the citizens of the digital citizenship?. *The International Review of Information Ethics*, *23*. https://doi.org/10.29173/irie227

Dekhane, S., Xu, X., & Tsoi, M. Y. (2013). Mobile app development to increase student engagement and problem solving skills. *Journal of Information Systems Education*, *24*(4), 299-308.

DeVellis, R. F., & Thorpe, C. T. (2021). *Scale development: Theory and applications*. Sage publications.

Dienlin, T., & Johannes, N. (2020). The impact of digital technology use on adolescent well-being. *Dialogues in clinical neuroscience*, *22*(2), 135-142. https://doi.org/10.31887/DCNS.2020.22.2/tdienlin

Dobson, T., & Willinsky, J. (2009). Digital literacy. *The Cambridge handbook of literacy*, *10*, 286-312. https://doi.org/10.1017/CBO9780511609664.017

Dunn, T. J., & Kennedy, M. (2019). Technology Enhanced Learning in higher education; motivations, engagement and academic achievement. *Computers & education*, *137*, 104-113. https://doi.org/10.1016/j.compedu.2019.04.004

Erdoğdu, F., Gökoğlu, S., & Kara, M. (2021). "What about users?": Development and validation of the mobile information security awareness scale (MISAS). *Online Information Review*, *45*(2), 406-421. https://doi.org/10.1108/OIR-04-2020-0129

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Fraenkel, J., Wallen, N., & Hyun, H. (2012). *How to Design and Evaluate Research in Education 8th ed*. McGraw-Hill Education.

Galinec, D., & Luić, L. (2020). Design of conceptual model for raising awareness of digital threats. *WSEAS transactions on environment and development*, *16*, 493-504. https://doi.org/10.37394/232015.2020.16.50

Gamrat, C., & Zimmerman, H. T. (2021). Digital badging systems as a set of cultural tools for personalized professional development. *Educational Technology Research and Development*, *69*, 2615-2636. https://doi.org/10.1007/s11423-021-10028-1

Gianesini, G., & Brighi, A. (2015). Cyberbullying in the era of digital relationships: The unique role of resilience and emotion regulation on adolescents' adjustment. In *Technology and youth: Growing up in a digital world* (pp. 1-46). Emerald Group Publishing Limited. https://doi.org/10.1108/S1537-466120150000019001

González-Pérez, L. I., & Ramírez-Montoya, M. S. (2022). Components of Education 4.0 in 21st century skills frameworks: systematic review. *Sustainability*, *14*(3), 1493. https://doi.org/10.3390/su14031493

Guillemin, F., Bombardier, C., & Beaton, D. (1993). Cross-cultural adaptation of health-related quality of life measures: literature review and proposed guidelines. *Journal of clinical epidemiology*, *46*(12), 1417-1432. https://doi.org/10.1016/0895-4356(93)90142-N

Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of business research*, *109*, 101-110. https://doi.org/10.1016/j.jbusres.2019.11.069

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable operations and computers*, *3*, 275-285. https://doi.org/10.1016/j.susoc.2022.05.004

Hambleton, R. K., & Patsula, L. (1998). Adapting tests for use in multiple languages and cultures. *Social indicators research*, *45*, 153-171. https://doi.org/10.1023/A:1006941729637

Harrington, D. (2009). *Confirmatory factor analysis*. Oxford university press. https://doi.org/10.1093/acprof:oso/9780195339888.001.0001

Haryanti, T., Rakhmawati, N. A., & Subriadi, A. P. (2023). The extended digital maturity model. *Big data and cognitive computing*, *7*(1), 17. https://doi.org/10.3390/bdcc7010017

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational research methods*, *1*(1), 104-121. https://doi.org/10.1177/109442819800100106

Hofmans, L., van der Stappen, A., & van den Bos, W. (2024). Developmental structure of digital maturity. *Computers in Human Behavior*, *157*, 108239. https://doi.org/10.1016/j.chb.2024.108239

Howard, M. C. (2023). A systematic literature review of exploratory factor analyses in management. *Journal of Business Research*, *164*, 113969. https://doi.org/10.1016/j.jbusres.2023.113969

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological methods*, *3*(4), 424. https://doi.org/10.1037/1082-989X.3.4.424

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, *6*(1), 1-55.

Kane, G. C., Palmer, D., & Phillips, A. N. (2017). *Achieving digital maturity*. MIT Sloan Management Review. https://doi.org/10.1080/10705519909540118

Kayabaşı, H., & Kasımoğlu, M. (2023). Örgütlerin Dijital Olgunluk Düzeyinin Ölçülmesi–Bir Ölçek Geliştirme Çalışması. *Sağlık ve Sosyal Refah Araştırmaları Dergisi*, *5*(1), 1-21. https://doi.org/10.55050/sarad.1139482

Koch, T., Laaber, F., & Florack, A. (2024). Socioeconomic status and young people's digital maturity: The role of parental mediation. *Computers in Human Behavior*, *154*, 108157. https://doi.org/10.1016/j.chb.2024.108157

Kolhar, M., Kazi, R. N. A., & Alameen, A. (2021). Effect of social media use on learning, social interactions, and sleep duration among university students. *Saudi journal of biological sciences*, *28*(4), 2216-2222. https://doi.org/10.1016/j.sjbs.2021.01.010

Kozyreva, A., Lewandowsky, S., & Hertwig, R. (2020). Citizens versus the internet: Confronting digital challenges with cognitive tools. *Psychological Science in the Public Interest*, *21*(3), 103-156. https://doi.org/10.1177/1529100620946707

Kung, F. Y., Kwok, N., & Brown, D. J. (2018). Are attention check questions a threat to scale validity?. *Applied Psychology*, *67*(2), 264-283. https://doi.org/10.1111/apps.12108

Kwon, S., Armstrong, B., Wetoska, N., & Capan, S. (2024). Screen time, sociodemographic factors, and psychological well-being among young children. *JAMA network open*, *7*(3), e2354488-e2354488. https://doi.org/10.1001/jamanetworkopen.2023.54488

Laaber, F., Florack, A., Koch, T., & Hubert, M. (2023). Digital maturity: Development and validation of the Digital Maturity Inventory (DIMI). *Computers in Human Behavior*, *143*, 107709. https://doi.org/10.1016/j.chb.2023.107709

Lee, H., Ahn, H., Nguyen, T. G., Choi, S. W., & Kim, D. J. (2017). Comparing the self-report and measured smartphone usage of college students: a pilot study. *Psychiatry investigation*, *14*(2), 198. https://doi.org/10.4306/pi.2017.14.2.198

Marín-López, I., Zych, I., Monks, C. P., & Ortega-Ruiz, R. (2019). Empathy, morality and social and emotional competencies in interpersonal interactions online. *Thriving in Digital Workspaces: Emerging Issues for Research and Practice*, 217-233. https://doi.org/10.1007/978-3-030-24463-7_11

Marsh, E., Vallejos, E. P., & Spence, A. (2022). The digital workplace and its dark side: An integrative review. *Computers in Human Behavior*, *128*, 107118. https://doi.org/10.1016/j.chb.2021.107118

Martin, A. (2008). Digital literacy and the "digital society". *Digital literacies: Concepts, policies and practices*, *30*(151), 1029-1055.

Meier, A. (2022). Studying problems, not problematic usage: Do mobile checking habits increase procrastination and decrease well-being?. *Mobile Media & Communication*, *10*(2), 272-293. https://doi.org/10.1177/20501579211029326

Nikou, S. A., & Economides, A. A. (2017). Mobile-Based Assessment: Integrating acceptance and motivational factors into a combined model of Self-Determination Theory and Technology Acceptance. *Computers in Human Behavior*, *68*, 83-95. https://doi.org/10.1016/j.chb.2016.11.020

Ning, W., Turel, O., & Davis, F. D. (2025). Potential treatments of technology addiction: insights for information systems scholars. *Internet Research*, *35*(2), 860-881. https://doi.org/10.1108/INTR-12-2023-1122

Nunnally J. C., & Bernstein I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

Pan, W., Feng, B., Wingate, V. S., & Li, S. (2020). What to say when seeking support online: A comparison among different levels of self-disclosure. *Frontiers in psychology*, *11*, 978. https://doi.org/10.3389/fpsyg.2020.00978

Park, K., & Chang, H. I. (2025). Technology Addiction in Young Adults: The Roles of Subjective Socioeconomic Status, Relative Deprivation, and Shame. *Korean Journal of Clinical Psychology*, *44*(1), 1-12. https://doi.org/10.15842/kjcp.2022.41.1.001

Parry, D. A., Davidson, B. I., Sewall, C. J., Fisher, J. T., Mieczkowski, H., & Quintana, D. S. (2021). A systematic review and meta-analysis of discrepancies between logged and self-reported digital media use. *Nature Human Behaviour*, *5*(11), 1535-1547. https://doi.org/10.1038/s41562-021-01117-5

Perneger, T. V., Leplège, A., & Etter, J. F. (1999). Cross-cultural adaptation of a psychometric instrument: two methods compared. *Journal of clinical epidemiology*, *52*(11), 1037-1046. https://doi.org/10.1016/S0895-4356(99)00088-8

Purwanto, M. B., Hartono, R., & Wahyuni, S. (2023). Essential skills challenges for the 21st century graduates: Creating a generation of high-level competence in the industrial revolution 4.0 era. *Asian Journal of Applied Education (AJAE)*, *2*(3), 279-292. https://doi.org/10.55927/ajae.v2i3.3972

Rader, D. (2019). Digital maturity–the new competitive goal. *Strategy & Leadership*, *47*(5), 28-35. https://doi.org/10.1108/SL-06-2019-0084

Rashid, T., & Asghar, H. M. (2016). Technology use, self-directed learning, student engagement and academic performance: Examining the interrelations. *Computers in human behavior*, *63*, 604-612. https://doi.org/10.1016/j.chb.2016.05.084

Reddy, P., Sharma, B., & Chaudhary, K. (2020). Digital literacy: A review of literature. *International Journal of Technoethics (IJT)*, *11*(2), 65-94. https://doi.org/10.4018/IJT.20200701.oa1

Richardson, J., & Milovidov, E. (2019). *Digital citizenship education handbook: Being online, well-being online, and rights online*. Council of Europe.

Rodríguez Salvador, M., Lezama Nicolás, R., Río Belver, R. M., & Rodríguez Andara, A. (2019). Lessons learned in assessment of technology maturity. In *Engineering Digital Transformation: Proceedings of the 11th International Conference on Industrial Engineering and Industrial Management* (103-110). Springer International Publishing. https://doi.org/10.1007/978-3-319-96005-0_14

Roffarello, A. M., & De Russis, L. (2021). Understanding, discovering, and mitigating habitual smartphone use in young adults. *ACM Transactions on Interactive Intelligent Systems (TiiS)*, *11*(2), 1-34. https://doi.org/10.1145/3447991

Scharkow, M. (2016). The accuracy of self-reported internet use—a validation study using client log data. *Communication Methods and Measures*, *10*(1), 13-27. https://doi.org/10.1080/19312458.2015.1118446

Taylor, S. H., & Bazarova, N. N. (2021). Always available, always attached: A relational perspective on the effects of mobile phones and social media on subjective well-being. *Journal of Computer-Mediated Communication*, *26*(4), 187-206. https://doi.org/10.1093/jcmc/zmab004

Tirocchi, S., Scocco, M., & Crespi, I. (2022). Generation Z and cyberviolence: between digital platforms use and risk awareness. *International Review of Sociology*, *32*(3), 443-462. https://doi.org/10.1080/03906701.2022.2133408

Turel, O., Matt, C., Trenz, M., & Cheung, C. M. (2020). An intertwined perspective on technology and digitised individuals: Linkages, needs and outcomes. *Information Systems Journal*, *30*(6), 929-939. https://doi.org/10.1111/isj.12304

Tutar, H., & Erdem, A. T. (2024). Kurumsal Dijital Olgunluk Ölçeği (KUDOM): Geçerlilik ve Güvenirlik Çalışması. *İşletme Araştırmaları Dergisi*, *16*(2), 1145-1165.

Uppal, C. (2024). The Psychological Drivers of Impulsive Buying: Exploring the Roles of Perceived Stress and Social Media Addiction among Adults. *International Journal of Interdisciplinary Approaches in Psychology*, *2*(12), 47-69.

Üstündağ, M. T., Güneş, E., & Bahçivan, E. (2017). Dijital okuryazarlık ölçeğinin Türkçeye uyarlanması ve fen bilgisi öğretmen adaylarının dijital okuryazarlık durumları. *Journal of Education and Future*, (12), 19-29.

Van Deursen, A. J., Bolle, C. L., Hegner, S. M., & Kommers, P. A. (2015). Modeling habitual and addictive smartphone behavior: The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in human behavior*, *45*, 411-420. https://doi.org/10.1016/j.chb.2014.12.039

Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2020). Determinants of 21st-century skills and 21st-century digital skills for workers: A systematic literature review. *Sage Open*, *10*(1), 2158244019900176. https://doi.org/10.1177/2158244019900176

Vanden Abeele, M. M. (2021). Digital wellbeing as a dynamic construct. *Communication Theory*, *31*(4), 932-955. https://doi.org/10.1093/ct/qtaa024

Wang, X., Zhang, R., Wang, Z., & Li, T. (2021). How does digital competence preserve university students' psychological well-being during the pandemic? An investigation from self-determined theory. *Frontiers in Psychology*, *12*, 652594. https://doi.org/10.3389/fpsyg.2021.652594

Yamamoto, J., & Ananou, S. (2015). Humanity in Digital Age: Cognitive, Social, Emotional, and Ethical Implications. *Contemporary Educational Technology*, *6*(1), 1-18. https://doi.org/10.30935/cedtech/6136

Ye, H., & Kankanhalli, A. (2018). User service innovation on mobile phone platforms. *MIS quarterly*, *42*(1), 165-A9. https://doi.org/10.25300/MISQ/2018/12361

Yufan, L. I. U. (2024). From technology addiction to platform isolation: The formation of loneliness among young people in the digital age. *Journal of Jishou University (Social Sciences Edition)*, *45*(5), 110.

Zahrai, K., Veer, E., Ballantine, P. W., & Peter de Vries, H. (2022). Conceptualizing self-control on problematic social media use. *Australasian Marketing Journal*, *30*(1), 74-89. https://doi.org/10.1177/1839334921998866

Zugec, B., Balaban, I., & Divjak, B. (2018). The development of an instrument for assessing digital maturity of schools. In *EDULEARN18 Proceedings* (pp. 8557-8565). IATED. https://doi.org/10.21125/edulearn.2018.1990

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The TikTok Performances of Secondary ELA Teachers

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Abstract
This paper describes a study on popular TikTok video content generated by secondary English Language Arts (ELA) teachers. The purpose of this study was to determine what TikTok content is out there and potentially influencing aspiring teachers. Thus, the research question asks: What information is being dispersed through TikTok, specifically from secondary ELA teachers? We examined the TikTok videos through the framework of Goffman's (1956) performances. The top 20 most-liked videos on 50 public secondary ELA teacher TikTok accounts were collected via three approaches and examined through a platform content analysis. A total of 1,000 videos were coded into one of six categories: re-enactments, teacher tips, non-teacher related, trends, responding to comments/audience, and school-related health. The findings show that re-enactments were the largest category of videos (n=369) while school-related health videos were the smallest category (n=74). After analysis, it was clear that TikToks serve as performances that provide fronts, dramatic realizations, and idealizations for viewers and their understanding of the ELA teaching profession. A limitation of this study was that this was a public and variable data set. Since specific videos were chosen through a process of like counts, many potentially rich videos were not included in the study due to varying like counts or time of being posted. In response to the research question, the content of secondary ELA TikTok teacher videos is detailed within this study. If used by teacher educators, these TikToks could support the education of teacher candidates as aspiring ELA teachers.

Keywords: TikTok, Secondary ELA teacher, Performances, Re-enactment

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Introduction

The field of education retains an apprenticeship model, where aspiring teachers model their pedagogy and practices in response to the teachers they experienced as students (Lortie, 1975). However, a social media platform has added to this tradition by allowing anyone to view and consider thousands of teacher voices, perspectives, classrooms, and scenarios. TikTok is an increasingly popular social media platform that gained prominence during the Covid-19 pandemic (Feldcamp, 2021). Established by ByteDance as Douyin in 2016, the app's usage, now known as TikTok, grew rapidly in the following years (Feldcamp, 2021; Lorenz, 2020). In March 2019, the application boasted 1 billion downloads and 500 million users (Herman, 2019). In April 2020, the application's profile rose to two billion downloads, helped by its algorithmic "For You" model and "addictive" quality (Feldcamp, 2021; Herman, 2019; Lorenz, 2020). Consequently, numerous individuals utilizing the TikTok platform have "gone viral" or risen to fame due to their video content being available to other profiles worldwide (Herman, 2019). For teachers who moved to online learning as a result of the Covid-19 pandemic, TikTok was one way to stay connected with peers, students, and the larger education community. Today, the "Teacher Tok" community continues to thrive by posting videos that address various topics of interest, humor, and concern. As of November 2025, TikTok has 1.59 billion monthly active users worldwide (Singh, 2025) and is the second most downloaded app in the world (Slotta, 2025).

With the continual increase in users and downloads, many researchers have studied different aspects of the platform and its influence. One study used critical inquiry to examine TikTok performances as they related to gender identity (Alvermann et al., 2024) while another study looked at TikTok trends by students as a way to understand institutional discourses of schooling (Wright, 2021). Evans and Hays (2025) examined undergraduate and graduate students' (n=75) feelings about TikTok, with the majority claiming that they liked having assignments utilizing TikTok(s) in their coursework. In thinking specifically about teachers and TikTok, there has been a growing number of studies. Vizcaíno-Verdú and Abidin (2023) analyzed the content of twelve TikTok teacher profiles through audio-visual observations over the course of one month, and their findings suggested that teacher behaviors on TikTok were characteristic of micro-celebrities. Meanwhile, Jerasa and Ura (2025) examined what could be learned from 100 TikTok videos concerning classroom management and found that most profiles opted to create short bursts of helpful content related to management in some form. More research continues to be developed, and not all existing studies are expounded upon here. However, we do know there is a gap in the literature on TikTok content across a large sample size.

Across the TikTok platform, the affordances and constraints of the current reality of education are accessible and nuanced. As teacher educators, we were intrigued when several teacher candidates brought TikTok videos and topics into teacher education course discussions. As researchers, we were driven to conduct this study that could help us better understand the content being dispersed for secondary English Language Arts (ELA) teachers on this social media platform. With TikTok having over one billion monthly active users worldwide (Singh, 2025; Slotta, 2025), it is important for us, as teacher educators, to be aware of the TeacherTok content out for public display. Specifically, as ELA teacher educators, we sought to contribute to the literature by using the specific ELA subject area to focus the research and determine what content was out there for aspiring ELA teachers. Thus, our research question asked: What information is being dispersed through TikTok, specifically from secondary ELA teachers?

Framework

When considering each TikTok and TikTok profile, we were drawn to Goffman (1956). "Performance," in Goffman's (1956) *The Presentation of Self in Everyday Life*, refers to "all the activity of an individual which occurs during a period marked by his continuous presence before a particular set of observers and which has some influence on the observers" (p. 13). We used this lens while examining each TikTok to view it as a performance by the individual with potential influential power. For this reason, we only examined secondary ELA teacher TikTok profiles with more than 10,000 followers. Regarding TikToks as performances, we considered how they could foster various impressions and bridge appearances of the teaching profession with reality.

Goffman (1956) explains how performances involve "fronts" (p. 13), which are expressive conditions used by the performer. There are different aspects of what a front can involve; for TikToks, we focused on the setting and the personal front. The setting involves "furniture, decor, physical lay-out, and other background items which supply the scenery and stage props for the space" (Goffman, 1956, p. 13). For TikTok performances, this was often the classroom background where the individual was creating content. The personal front involves "what we most

intimately identify with the performer himself and that we naturally expect will follow the performer wherever he goes" (Goffman, 1956, p. 14). The personal front involves physical characteristics of appearance as well as manner, such as the voice, tone, or emotion.

Goffman (1956) also discusses "dramatic realizations" within performances: "While in the presence of others, the individual typically infuses his activity with signs which dramatically highlight and portray confirmatory facts that might otherwise remain unapparent or obscure" (p. 20). Often this will involve somehow "making invisible costs visible" (Goffman, 1956, p. 21) so that the true worth and value of something can be known. Dramatic realizations are performed with the purpose of showing viewers the significance of the activity or understanding. Thus, in performances, certain aspects can be highlighted to reinforce an idea, truth, or belief.

Performances can also be idealized views of situations (Goffman, 1956). Performances can reinforce societal values or the need for societal change. The idealization of performances can also include six characteristics (Goffman, 1956): (1) there is often some hidden element of the performance that is incompatible with outsider viewers understandings; (2) the impression of infallibility is powerful so mistakes are typically concealed; (3) oftentimes only the end product is revealed, concealing the amount of time needed for completion whether minuscule or significant; (4) any dirty work involved with a performance tends to be hidden in order to highlight the pleasant aspects of a performance; (5) invisible ideals are often sacrificed for the betterment of the visible ideals; and (6) performers are qualified and accurately performing their role within the activity. One or more of these idealization characteristics may be present within a performance, and individuals may address them directly or indirectly.

Method

Methodology & Data Sources

To complete the content analysis, we reviewed 50 public secondary ELA teacher TikTok profiles to determine if they met our criteria: (1) secondary teacher, (2) ELA teacher, and (3) at least 10,000 followers. The 10,000 plus followers was part of our inclusion criteria because we wanted to explore teachers and content with the potential for a wide range of influence over viewers. Additionally, the TikTok platform included the option to search and filter results by the number of followers of a user's profile. Another reason we chose 10,000 as a threshold was because one of the filter options was "10K-100K." We did not include profiles of individuals who: used TikTok for the purposes of teaching grammar to viewers, taught specifically for English Learners, left the field of teaching more than two years ago, or had a generic profile with no ELA evidence.

We began examining the TikTok platform in the Fall of 2023 to determine what videos existed, what teacher creators were out there, and what types of videos were being put on the platform. During this time, we considered the parameters of our study and what inclusion and exclusion criteria would best shape our study. To do this, we both created new TikTok profiles specifically for the purpose of conducting the study. In this way, algorithms from any previous accounts could not contribute to videos presented on the (FYP). We officially collected and finalized the 1,000 videos between the dates of December 2023 and February 2024. All videos analyzed in this study were posted on or before December 31, 2023.

Our methods included three approaches of sorting and organizing teacher profiles (Table1). In the first approach, we used search terms related to secondary ELA teachers, searched under TikTok's "Users," then filtered based on number of followers; examples of approach one include: English teacher, middle school English teacher, ELA teacher, literature teacher, and high school English teacher. Using these search terms, 12 profiles met our criteria. In the second approach, we sorted profiles using hashtags such as: #teachersoftiktok, #secondaryelateacher, #englishteachersoftiktok, #teachertok, and #teacher. Using these hashtags, 23 profiles met our criteria. The third approach was a general search based on exploring profiles we might have missed in the first two approaches. Using our individualized FYPs that serve as the TikTok home screen and use an algorithm to show videos it thinks the user will enjoy, 15 profiles met our criteria. Together, approaches one and two provided the most profiles to examine and serve as reproducible data; the third approach provided profiles that may have been missed based on search terms and hashtags but these may not be reproducible due to TikTok algorithms for FYPs.

To determine if a profile met our criteria, we initially read the account biography information to see if any inclusion criteria was easily visible. Then, we viewed multiple videos on the account to see if ELA teacher content was displayed or consistent. There were several accounts that had ELA content, but the creators never definitively said

they were secondary ELA teachers; we did not use those profiles. Definitive criteria was required for inclusion within this study.

Table 1. Approaches to searching and organizing TikTok videos

Approach 1

Search Terms	>100k followers that meet criteria	10k-100k followers that meet criteria
"English Teacher" → Users	1/43	2/103
"ELA Teacher" → Users	0/7	1/25
"Literature Teacher" → Users	2/9	0/8
"High school English teacher" → Users	2/35	3/114
"Middle school English teacher" → Users	1/35	1/109
Total profiles found	**6/129**	**7/359**

Approach 2

Search Terms	>100k followers that meet criteria	10k-100k followers that meet criteria
#englishteachersoftiktok	0	3
#TeachersOfTikTok	7	7
#teachertok	0	2
#teacher	0	1
#secondaryelateacher	0	2
Total profiles found	**7**	**15**

Approach 3

Search Terms	>100k followers that meet criteria	10k-100k followers that meet criteria
FYP - For You Page	5	10
Total profiles found	**5**	**10**
Total profiles found across three veins	**18**	**32**

To begin the analysis phase, we sorted each profile by "Popular" videos, which is based on a video's like count. This organized every video on a profile in order from most-liked to least-liked. We sorted each profile's top 20 most-liked videos into categories: re-enactments, trends, teacher tips, school-related health, responding to comments/audience, and non-teacher-related (Table2). The re-enactment category included videos that showed the teacher re-creating educational exchanges and interactions. The teacher tips category included any advice the teacher provided and often involved tips for classroom décor or management. The trend category encompassed videos that used popular sounds or subject matter within a specific time period on TikTok. The school-related health category included videos that addressed the physical or mental health of teachers or students. The responding to comments/audience category was used when the video directly responded to a comment or individual question from a previous video. Lastly, the non-teacher-related topic category included videos that had nothing to do with teachers, students, or education but were still in the top 20 most-liked videos. Sometimes boundaries between categories were discussed in that some videos could have fit into more than one category. When this occurred, the researchers looked at the assumed purpose of the video for categorical organization. Organizing 50 ELA teacher profiles' top 20 most-liked videos resulted in a public data set of 1,000 TikTok videos.

Table 2. Codebook

Category	Definition
Re-enactments	Videos that showed a re-creation of a school or an educational exchange or interaction.
Teacher tips	Videos that provided advice related to teaching or educational experiences.
Non-teacher related	Videos on teacher profiles that had nothing to do with teaching or educational experiences.

Trends	Videos about teaching or educational experiences that used popular sounds or subject matter within a specific time period where those things were popularized.
Responding to comments/audience	Videos about teaching or educational experiences that directly responded to a comment or question from a previous video or message.
School-related health	Videos that addressed the physical or mental health of teachers or students.

Striving for objective reliability and validity (Kirk & Miller, 1986) with a variable public data set, we each coded and analyzed 50% of the profiles. Upon completion, we each reviewed the other 50% to check for discrepancies and ensure coding categories were agreed upon. 100% of individual coding was completed prior to any discussion. Of the 1,000 videos to code, there were only fifty-two discrepancies between the two researchers, resulting in Krippendorf's $\alpha = .933$. A discrepancy constituted when one coded a video as one category and the other coded it as another. Nuances between the six categories sometimes overlapped; for example, a trend video could also involve a re-enactment. Each discrepancy was verbally discussed to determine which category was overall best represented in that video. To maintain the simplicity and validity of the dataset, one video was never double coded. Thus, 1,000 videos across 50 public secondary ELA teacher TikTok profiles were analyzed for content to examine what information is being disseminated through TikTok. After coding and analyzing all profiles and videos, we wrote a brief biography of each teacher and the connotations presented across the profile in consideration of how TikTok users might feel or be influenced by the information presented. These writings were bridled (Vagle, 2009) as we considered how our lived experiences may have influenced these understood biographies and connotations.

All research was conducted in accordance with legal and ethical standards and falls under the category of studies for which ethics approval is not required.

Results and Discussion

Of the 1,000 TikToks analyzed, 369 were coded as re-enactments (36.9%), 177 were coded as teacher tips (17.7%), 126 were coded as trends (12.6%), 74 were coded as health (7.4%), 112 were coded as responding to comments/audience (11.2%), and 142 were coded as non-teacher-related topics (14.2%) (Table3). This information directly responds to the research question: What information is being dispersed through TikTok, specifically from secondary ELA teachers? Various perspectives of the secondary ELA teaching profession were displayed through these videos. While this is public data, we also understand that the "public/private divide online is blurred" (Barber & Fecho, 2024, p. 6). Additionally, we acknowledge that limiting each teacher's profile to their twenty most-liked videos has the potential to decontextualize that teacher and impact how others perceive them; therefore, we have used pseudonyms to protect the TikTok teachers' identities. In the following subsections, the categories are described in more detail, and specific examples are analyzed.

Table 3. Categories of TikToks

Category	N	Percentage
Re-enactments	369	36.9
Teacher tips	177	17.7
Non-teacher related	142	14.2
Trends	126	12.6
Responding to comments/audience	112	11.2
School-related health	74	7.4
Total	1000	100

Re-enactments

The re-enactment videos were the most common category published by ELA teachers of TikTok making up 36.9% of the 1,000 TikTok videos analyzed in this study. The category included videos that showed the teacher re-enacting specific exchanges and interactions within educational situations. These videos often depicted humor but could also demonstrate frustration, sympathy, relief, or other emotions. For example, TeacherA on TikTok acted like he took a student's toy away in class. TeacherA demonstrated nonchalant facial features while the student (not shown on camera) asked for it back. Sometimes, students' faces or voices were included in these videos to

contribute to the re-enactment. Most teachers, however, chose to act as both the teacher and the student(s), presumably to avoid publicly displaying students on social media.

We examined the re-enactment videos and analyzed them based on the performances (Goffman, 1956) they depicted. In TeacherB's ninth most liked TikTok, the teacher is "performing" as both a teacher and an administrator. The text on the screen says, "What if teachers only worked their contracted hours?" The video includes a conversation where an administrator is asking why the teacher has not submitted lesson plans. TeacherB responds, "because I had to cover a class every day during my planning period, so I didn't have time." The conversation continues while the teacher attempts to explain that she didn't have time and, therefore, did not complete the work. To presumably ensure viewers are not scared away from the profession or encouraged to comment on their displeasure, TeacherB included a note on the video that says, "this is purely satire." Regarding the performance's front, TeacherB provides a classroom setting behind both the teacher and the administrator. Physically, TeacherB wears glasses when she is performing as the administrator, but removes the glasses when performing as the teacher. This TikTok is providing a dramatic realization of the teaching career that most teachers work more than their contracted hours. The TikTok highlights an aspect of the teaching profession that may often "remain unapparent or obscure" (Goffman, 1956, p. 20) to individuals outside the education field. At the same time, it represents the false idealization that one could just work contracted hours, seemingly promoting the need for change with contract hours, expectations, or administration. This information may not be known or understood by individuals not knowledgeable about the teaching profession; so, TeacherB is seemingly attempting to demonstrate this need for change in a non-hostile manner.

The re-enactment videos provided mostly dramatic realizations with classroom focused fronts that provide viewers with information and examples related to the field of education. These types of videos were often positive or humorous in their depictions. Re-enactment videos would be an interesting choice for teacher educators to implement within their classrooms to provide discussion points for how teachers, students, and administrators act in various situations.

Teacher tips

The second most common category was teacher tips, which made up 17.7% of the 1,000 TikToks analyzed. An example of this category is when TeacherC provided numerous videos on "Things I do with my seniors that most people wouldn't think of." These videos involved her talking to the camera and offering ideas for activities that engage 12th grade English students. She described how she still gives them candy for answering questions, plays Simon Says when they feel sleepy, and draws hangman when they learn new vocabulary. Videos in the Teacher Tips category showed thoughts, ideas, and suggestions for improving the teaching experience; often, this involved current teachers offering advice to new or aspiring teachers.

In TeacherD's second most-liked TikTok, she silently points out "Things I refuse to do as a teacher." The video uses a dancing sound bit while she points to the things she refuses to do. Each thing is displayed as text on the screen when she points in that direction. The things TeacherD lists are: "Not accept work that is late, ban food in class, demand respect and not give it, raise my voice (just not my style), and assign projects over a break." The video ends after TeacherD points to the middle block text which reads, "Students are humans too and deserve the same amount of grace/respect we as adults still need." The front of this video involves a classroom setting in front of which TeacherD stands. She wears a teacher outfit during the performance while standing and dancing in a confident manner while listing the things she refuses to do. In this way, she is providing a dramatic realization that highlights her specific beliefs regarding things that should not be done in the classroom. Goffman (1956) describes how performances can either be seen as reinforcing societal values or calling for societal change. In this TikTok, TeacherD is highlighting her understanding that students are humans too and should be treated as such. Thus, this TikTok is seemingly calling for awareness and even change in how students are viewed within the classroom. The fact that this is her second most-liked video across her entire profile demonstrates how this need for change may also be felt by other teachers, students, and individuals.

Teacher tip videos often included information on why the advice or tip was correct or beneficial to implement. Often, these reasons involved societal values or beliefs focused on putting students first. These videos were sometimes humorous but also sometimes serious in their detailing of what was useful in an educational context. Teacher tip videos would be a useful choice for teacher educators to include within their coursework since they

focus on recommendations for things to be included in educational classrooms. Discussions could be had that focus on whether the suggestion would be beneficial or not.

Non-teacher related

The third most common category, non-teacher-related topics, made up 14.2% of the 1,000 TikTok videos analyzed in this study. These videos had nothing to do with teachers, students, or education but were still in the top 20 most-liked videos.

One example of a non-teacher related TikTok was TeacherE's first most-liked video involving the painting of her own cabinets. TeacherE's video contains text that says, "Painting my own cabinets." The video continues with her saying, "Girl, don't do it, it's not worth it." Then she replies to herself saying, "I'm not going to do it, girl. I was just thinking about it, I'm not going to do it." Then the video shows her with a paintbrush, dipping it in paint, and putting the first stroke on the cabinet. The video ends with TeacherE saying, "I did it." Considering performances, this is a non-teacher related topic that contains a different front than most other videos analyzed since the front is a kitchen cabinet instead of a classroom. The dramatic realization of this video could involve TeacherE's belief that home projects can be good even if they are a lot of work. It could also serve as an idealization as the video does not show the significant amount of work that goes into painting cabinets. It simply highlights the beginning of the process. However, the fact that this is her number one most-liked video, even though most of her profile's content relates to teaching, is noteworthy.

Non-teacher related videos were well-liked on teacher TikTok profiles. One could assume that this is because dedicated viewers are interested in the teacher's personal and home life in addition to their teacher identity. Non-teacher related videos often did provide in-depth information on the teacher's personality or hobbies. This made non-teacher related videos provide a kind of break or relief in the algorithm of teacher related videos.

Trends

The trend category included 12.6% of the 1,000 videos analyzed in this study. A trend usually involved using an extract from a popular song or other form of media superimposed with something the TikTok user was doing or seeing. For example, TeacherF used the "We Don't Talk About Bruno" sound bite, from the popular movie, *Encanto* (Bush & Howard, 2021), to describe how students were feeling lost until she offered extra tutoring sessions. First, she acted like a student frustrated with school, then, as the music changed, she walked into the room as a confident teacher ready to help. Videos in the trend category were often depicted in humorous ways. Creating videos with trending content could be seen as a way for the TikTok user's performance to remain relevant and knowledgeable.

In TeacherG's second most-liked video, the sound bite of "It's a Hard Knock Life" from the movie, *Annie* (Huston, 1982), plays in the background. The text, "Being a teacher in your 20's" appears over her head at the beginning of the video. Then, TeacherG moves to the side of the screen but gets pushed back at specific intervals of the song as four text boxes appear at different times on the screen. The four texts say: (1) "Where's the teacher? (2) "Parents don't take you seriously." (3) "Are you old enough to teach?" and (4) "All students should be in class." After getting pushed back four times, the video ends with TeacherG crossing her arms in frustration. The caption of TeacherG's video states, "The struggle is real." The front of this video involves the setting of her classroom while she wears a teacher outfit and lanyard. TeacherG provides a dramatic realization for how young teachers may feel in the workplace based on the comments and criticism of others. Her performance serves as a way to shine a light on the "invisible costs" (Goffman, 1956, p. 21) of being a young teacher that viewers from outside the profession may not know or understand. TeacherG also goes against the idea of idealizing the teaching profession by revealing some unpleasant aspects of being a young teacher. Rather than concealing the struggles she must navigate, she highlights them in a meaningful way.

Trends occur within specific periods of time; they will remain relevant for a time before something new comes along. One could assume that teachers who utilize trends are attempting to keep up with other current TikTok videos and are conscious of what viewers are expecting to see within a certain timeframe. In this way, educational content can be presented in a relevant and timely way.

Responding to comments/audience

The responding to comments/audience category made up 11.2% of the 1,000 TikTok videos analyzed. TikTok users would post or send questions to the teacher and, sometimes, the teacher would respond with another video. For example, one user posted a comment asking the teacher to give more details about a section of her classroom library. TeacherH responded with another video detailing romance books she includes in her library and their importance in a middle school ELA classroom. In this way, the TikTok platform serves as a communication tool between current ELA teachers posting content and the individuals watching these performances.

In TeacherI's sixth most-liked video, he replied to a user who commented asking if he could post a classroom tour. The video begins with him walking into his 10th grade English classroom. Throughout the video, he explains student seating options, daily standards and agenda placement, as well as miscellaneous things such as books, toys, and coffee. Unlike the previous videos described, this TikTok provides a performance of the space rather than of himself as an individual. The front's setting is still the classroom, but the setting shifts as the camera pans to different sections of the classroom. The performer's physical traits are never identified because the individual is never seen. The viewer does, however, hear TeacherI's voice, which serves as the performance's manner in this video. His voice and speech are calm and thoughtful as he explains why he created this specific classroom environment. Regarding dramatic realizations, TeacherI uses this video to highlight his ideas on what a positive classroom environment may include or look like. Lastly, this could be construed as an idealized performance in that the significant work involved with creating this kind of comfortable classroom environment is not revealed; rather, the video only shows the final product of significant amounts of work.

Responding to comments/audience videos seemed to create more of a community on the teacher's TikTok profile. By responding to viewers' questions, the teacher was engaging with individual viewers on a more personal level. TeacherI, for example, could have simply created the video of his classroom tour without addressing the comment given by a viewer. However, by including the fact that this video was made in response to a viewer, the relationship between TikTok teacher and viewer appears real and strong.

School-related health

The least common category, school-related health, made up 7.4% of the 1,000 TikTok videos. Often, videos in this category were related to COVID-19 regulations, mental health ramifications, or physical maturity. For example, TeacherJ described how she monitored and refilled bins of menstrual hygiene products in the school restrooms. These videos often touched on difficult topics that showed the TikTok creator performing in a way that differed from their normal content.

In TeacherK's second most-liked video, she describes why teachers are exhausted. She begins the video by stating, "I really feel like unless you're a teacher, you don't really know how exhausting it is to be in the classroom…" She goes on to describe how teachers often make roughly 200 decisions an hour, leading to the idea of decision fatigue within the profession. She ends the video by saying, "So just know you're not alone." The majority of TeacherK's TikTok videos provide advice to new or aspiring teachers; many of these videos involve ideas for beginning-of-the-year activities, how to be successful with student teaching, and similar topics. So, while this TikTok is still addressing teachers, it does deviate from her normal content in that it is specifically addressing mental health concerns. In this performance, the front she presents is herself sitting at her teacher's desk with a textbook open. The use of the open textbook in front of her contributes to her manner as someone knowledgeable about the content. This TikTok serves as a dramatic realization for any viewers not familiar with the daily life of a teacher by "making invisible costs visible" (Goffman, 1956, p. 20) regarding the number of decisions a teacher makes each day. The idealization of this performance stems from the notion that the individual is extremely knowledgeable about their role, especially with the presence of the textbook within the TikTok's front. However, it also goes against the idealization of teaching in that TeacherK is revealing more unpleasant aspects of the profession. In this way, multiple idealization characteristics are addressed.

School-related health videos were full of dramatic realizations focused on aspects of teaching that may not be obvious to those outside of the profession. While the physical health videos typically focused on the importance of helping and being there for students, the mental health videos often focused on the teacher. These types of videos shine a light on a sensitive subject for many individuals. The creators of these videos often put themselves under vulnerable spotlights when discussing these topics. In this way, spaces were created on the TikTok platform where viewers could see potential vulnerabilities associated with the profession.

Implications

Many professional conversations regarding teaching practices occur in informal spaces (Barber & Fecho, 2024) as opposed to professional development seminars or school meetings. The TikTok platform is one informal space in which teacher creators are engaging in dialogue with their viewers through the information they disseminate. Teacher tips, the re-enactment of positive and negative educational experiences, conversations about health, and other topics are all being discussed and illuminated on this platform. This study showcased the wide range of ELA teacher-related content available. Re-enactments, teacher tips, trends, responding to comments/audience, and school-related health frequently implemented dramatic realizations to draw attention to various aspects of the profession such as a need for a change, humorous content, a hidden attribute of the career, etc. Similarly, many of the categories, including non-teacher related videos, often used idealizations that attempted to display more positive aspects of the teacher or profession. This was often done by attempting to bring in teachers lives from outside of the classroom. These forms of idealization contributed to each teacher's personality development across their profile. Fronts were also used across categories; performing a video within the physical space of one's classroom seemingly contributed to the content being construed as accurate.

TikTok users have the ability to witness various teachers and aspects of the ELA teaching profession with or without any background knowledge. This has serious implications for teacher educators who are tasked with ensuring students are prepared for ELA classrooms in 2025 and beyond. Contextualized and intentional conversations must take place within teacher education coursework or classrooms that focus on the information being presented on TikTok. Students and teacher candidates watching these videos may have questions arise after watching a video about teacher contract hours, a video on how to arrange a classroom, or a video on whether to ban food in the classroom. Bringing this platform and these videos into teacher education does not have to look like a TikTok assignment, it could simply look like a space in which students can bring content they have witnessed into the conversation. Teacher educators choosing to ignore and not engage in TikTok teacher content could do a disservice to students who utilize the platform and formulate opinions based on internalized content. Just as with Lortie (1975), TeacherTok, when contextualized and used with intentionality and discernment by teacher educators, can be an extension of the apprenticeship model. Students and teacher candidates within teacher education programs are viewing what a teacher is like, what their day, habits, and practices are like in the classroom. Those depictions might be curated, for aesthetics, exaggerated for comic appeal, etc. However, the videos on ELA TeacherTok can still be utilized to support students and teacher candidates who are looking for answers to questions.

Limitations

As part of our limitations, we acknowledge that it is probable that viable and potentially rich videos were not used in the data set because that particular video, though of potential and valuable content, did not have as high of a "like rate" during the time frame in which we were compiling videos for the study. There is also the limitation of the timeframe in which we gathered the most liked videos from the most popular ELA content creators on TikTok. Numbers quickly shift and change within this public data set due to additional likes (and the removal of likes), removal of videos by the creator, and new videos being added that get popular quickly (i.e., they go viral).

We acknowledge that there is an inherent bias in attributing the importance of an account to follower counts on social media platforms. We established the 10,000+ follower threshold because of the connection to being deemed a popular or influential account on the platform. In terms of bias for the top 50 accounts and the top 20 most-liked videos for each creator, our data collection was limited by the timeframe in which we were initially collecting data, when numbers were checked, and when numbers were updated. An account could potentially have grown or dropped in followers outside of that range. Additionally, the limitations of the authors' two accounts on the TikTok platform must be acknowledged. Two accounts and their FYPs were being used to search for participants. Having additional accounts or additional researchers looking for participants could have yielded further results.

Additionally, many school districts and schools have specific guidelines regarding social media usage, which may have influenced the content being disseminated in teacher videos. For teacher educators and those in the classroom, it is imperative to remember that, as useful and engaging as social media platforms can be, caution must remain regarding professionalism in education (Carpenter et al., 2020; Won Hur & Brush, 2014). A final limitation of this study is that the data collection process only included content in the English language due to it being the primary language of the researchers.

Conclusion

The power and influence of TikTok can best be summarized by an October 2022 piece in *The Washington Post*: "Once written off as a silly dance-video fad, [TikTok] has become one of the most prominent, discussed, distrusted, technically sophisticated and geopolitically complicated juggernauts on the internet — a phenomenon that has secured an unrivaled grasp on culture and everyday life" (Harwell, 2022). We know that teacher candidates are consuming TikTok content due to its popularity. Not only have our students brought teacher TikToks into our ELA education course discussions, but also, two-thirds of adolescents use TikTok regularly and a reported one in six adolescents use the application almost constantly (Klein, 2023). Aspiring teachers pursuing careers in education could be formulating their understanding of the profession by consuming secondary ELA TikTok content. Thus, the fronts, dramatic realizations, and idealizations related to various perceptions of the classroom, views of policy, and curriculum ideas could influence viewers. These videos, already familiar to many students, can be used to spark discussions and serve as a common text to engage with topics stemming from each video or performance.

Secondary ELA teacher-created TikToks are serving as performances for the consumption of viewers. Re-enactments were the most common category of TikTok published and distributed by secondary ELA teachers making up 369 of the 1,000 analyzed TikToks. Teacher tips accounted for 177 videos, non-teacher related accounted for 142, trends accounted for 126, responding to comments/audience accounted for 112, and school-related health accounted for 74. These findings directly responded to our research question: What information is being dispersed through TikTok specifically from secondary ELA teachers? While this study used each profile's number of followers to consider influence, another study could further examine the direct influence on current teacher candidates. These TikToks are public performances that can be utilized to begin discussions with current and aspiring secondary ELA teachers. The videos present various ideas, beliefs, and truths while providing realizations for current teachers, aspiring teachers, and even individuals unfamiliar with the teaching profession. Examining the videos in this way can assist with understanding the power and influence of the secondary ELA teachers of TikTok.

Authors Contribution Rate

The first author contributed (Lauren May) 60%, the second author (Heather Wright) 40%.

Ethical Approval

All research was conducted in accordance with legal and ethical standards and falls under the category of studies for which ethics approval is not required

References

Alvermann, D., Wright, W., & Wynee, E. (2024). Researching media literacy practices using both critical and posthuman inquiry. In P. Fastrez & N. Landry (Eds.), *Media literacy and media education research methods.* (pp. 97-115). Routledge. https://doi.org/10.4324/9781003045366-7

Barber, C. & Fecho, B. (2024). Possibilities and missed opportunities for generative dialogue: professional networking, online platforms and the English classroom. *English Teaching: Practice and Critique, 23*(4), 428-441. https://doi.org/10.1108/ETPC-04-2024-0054

Bush, J. & Howard, B. (Directors). (2021). *Encanto.* [Film]. Walt Disney Pictures.

Carpenter, J. P., Morrison, S., Craft, M., & Lee, M. (2020), How and why are educators using Instagram?, *Teaching and Teacher Education, 96*(2020), 1-14. https://doi.org/10.1016/j.tate.2020.103149

Evans, S. & Hays, L. (2025). The student perceptions of the use of TikTok in education. *Journal for Research and Practice in College Teaching, 10*(1), 1-23.

Feldcamp, J. (2021). The rise of TikTok: The evolution of a social media platform during COVID-19. In C. Hovestadt, J. Recker, J. Richter, & K. Werder (Eds.), *Digital responses to COVID-19: Digital innovation, transformation, and entrepreneurship during pandemic outbreaks.* (pp. 73-85). Springer. https://doi.org/10.1007/978-3-030-66611-8_6

Goffman, E. (1956). *The presentation of self in everyday life.* University of Edinburgh Social Sciences Research Center.

Harwell, D. (2022, October 14). How TikTok ate the internet. *The Washington Post*. https://www.washingtonpost.com/technology/interactive/2022/tiktok-popularity/

Herman, J. (2019, March 19). How TikTok is rewriting the world: TikTok will change the way your social media works — even if you're avoiding it. *New York Times*. https://www.nytimes.com/2019/03/10/style/what-is-tik-tok.html

Huston, J. (Director). (1982). *Annie* [Film]. Columbia Pictures.

Jerasa, S. & Ura, S. (2025). Learning from TikTok: Quality and reach of #TeacherTok as a classroom management tool for teacher education. *TechTrends, 69*, 1084-1093. https://doi.org/10.1007/s11528-025-01098-6

Kirk, J., & Miller, M. L. (1986). *Reliability and validity in qualitative research.* Sage.

Klein, A. (2023, March 22). TikTok is raising national security, privacy concerns. Should educators steer clear? *Education Week*. https://www.edweek.org/technology/tiktok-is-raising-national-security-privacy-concerns-should-educators-steer-clear/2023/03

Lorenz, T. (2020, December 31). This is why you heard about TikTok so much in 2020. *The New York Times.* https://www.nytimes.com/2020/12/31/style/tiktok-trends-2020.html

Lortie, D. (1975). *Schoolteacher: A Sociological Study.* London: University of Chicago Press.

Singh, S. (2025, November 12). How many people use TikTok in 2025. *Demandsage.* https://www.demandsage.com/tiktok-user-statistics/

Slotta, D. (2025, December 17). TikTok - statistics and facts. *Statistica.* https://www.statista.com/topics/6077/tiktok/?srsltid=AfmBOoqWi1yEBRCmvZMq_aN5RRckNZlrmQOschYxn50d7K7GVuxwtFsS#topicOverview

Vagle, M. D. (2009). Validity as intended: 'bursting forth toward' bridling in phenomenological research. *International Journal of Qualitative Studies in Education, 22*(5), 585–605. https://doi.org/10.1080/09518390903048784

Vizcaíno-Verdú, A. & Abidin, C. (2023). TeachTok: Teachers of TikTok, micro-celebrification, and fun learning communities. *Teaching and Teacher Education, 123*(2023), 1-17. https://doi.org/10.1016/j.tate.2022.103978

Won Hur, J., & Brush, T. A. (2014), Teacher participation in online communities: Why do teachers want to participate in self-generated online communities of K12 teachers?, *Journal of Research on Technology in Education, 41*(3), 279-303. https://doi.org/10.1080/15391523.2009.10782532

Wright, W. T. (2021). Reality check: How adolescents use TikTok as a digital backchanneling medium to speak back against institutional discourses of school(ing). *Radical Teacher, 119*(2021), 61-67. https://doi.org/10.5195/rt.2021.777

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The Development and Validation of the Academic Mobbing Scale: The Case of Türkiye

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Abstract
The Academic Mobbing Scale (AMS) was explicitly designed to evaluate workplace mobbing experiences within academic settings systematically. Following an exploratory factor analysis (EFA), the scale was found to comprise a six-factor structure that accounts for a significant portion of the variance in mobbing experiences. The identified dimensions of the scale are as follows: "Communication and Relationship Barriers", "Barriers to Academic Work and Responsibilities, "Degradation and Discrimination", "Withholding of Resources", "Violence and Harassment", and "Cyber Mobbing". The scale comprises 32 items and was developed following an extensive pilot study to ensure its relevance and effectiveness. The psychometric properties of the AMS were assessed, and Cronbach's alpha coefficients indicated strong internal consistency. Specifically, the alpha values for the subscales were .93, .91, .88, .80, .83, and .72, respectively, with an overall scale reliability coefficient of .95. These results suggest that the AMS is a reliable tool for understanding the nuances of mobbing behaviours affecting academics. The Academic Mobbing Scale aims to facilitate a comprehensive understanding of the phenomenon by capturing various mobbing outcomes.

Keywords: Mobbing, Academic, Scale development, Factor analysis

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Introduction

The widespread use of digital technologies in rapidly evolving educational systems has necessitated the adoption of contemporary approaches in teaching. As education adapts to the digital age, pedagogies that integrate face-to-face and virtual environments with digital tools have become increasingly prevalent. In this process, instructional content has shifted from traditional text-based models to multimedia-supported structures that encourage community contributions (Thierstein, 2009). E-Twinning is one such secure and free online learning platform where teachers and students from various schools collaborate to achieve shared goals. The platform's main objective is to contribute to the development of joint projects by all school
context.

Research has shown that faculty members face various stressors, particularly in environments characterized by heavy workloads, limited support, and high expectations. These factors can lead to elevated anxiety and professional burnout. One of the primary contributors to stress is workload. It has been demonstrated that the high individual demands associated with more senior academic roles are linked to elevated stress levels among faculty members. Holmgren et al. (2009) reported that those in higher professional ranks face significant workload pressures, contributing to perceived stress and increased sick leave rates. Furthermore, Kinman et al. (2006) documented a relationship between extended working hours and psychological distress among academic staff in UK universities, further confirming workload as a common and influential stress factor in academic life.

Additionally, job satisfaction has been shown to impact stress levels significantly. Shin and Jung (2013) posited that job satisfaction levels vary across countries. It is further noted that high stress levels are prevalent in many academic environments and that systemic factors contribute to faculty stress in different educational contexts. Kaplan et al. (2005) examined the impact of self-expectations related to school-related stress and its effect on performance, highlighting that elevated stress can negatively impact performance and potentially create a cycle that further increases stress levels. The phenomenon of mobbing in academia is receiving increasing attention due to its significant psychological consequences, including elevated levels of anxiety and stress among faculty members. For instance, Şenol et al. (2015) report that more than half of the academic staff in Türkiye have experienced verbal mobbing, often perpetrated by their superiors, thus highlighting a worrying trend of workplace violence within universities. This finding suggests the presence of a systemic problem wherein academic culture, especially when coupled with harmful leadership styles, contributes to a hostile work environment that leads to heightened anxiety and stress levels among faculty members. A substantial corpus of research has extensively documented the psychological impact of mobbing, showing that victims frequently experience a range of serious mental health issues. Mobbing has been associated with various psychiatric conditions, including post-traumatic stress disorder (PTSD), depression, and generalized anxiety disorder (Karaahmet, 2013). Tatar and Yüksel (2018) further elucidate that psychological trauma resulting from mobbing may be exacerbated by pre-existing vulnerabilities, noting that individuals with prior exposure to psychological stressors are at greater risk of experiencing mobbing in the future. Although workplace mobbing has been widely studied, most existing mobbing scales were developed for general organizational settings and are not tailored to the structural and relational characteristics of academic institutions. Generic instruments often fail to capture academic-specific behaviors such as obstruction of research and teaching activities, manipulation of academic evaluation processes, exclusion from scholarly networks, or informal power asymmetries embedded in academic hierarchies. As a result, the applicability and content validity of these instruments remain limited when used in higher education contexts.

In academic environments, mobbing tends to manifest through behaviors that are closely tied to academic roles, promotion systems, publication processes, and collegial governance structures. These behaviors are often subtle, relational, and institutionalized, making them difficult to detect using general workplace bullying frameworks. In the Turkish higher education context, hierarchical governance structures, centralized evaluation mechanisms, and informal power relations may further shape how mobbing is enacted and experienced. Therefore, there is a need for a measurement tool that reflects a behavior set specific to academia and sensitive to the institutional and cultural characteristics of the Turkish university system. Further studies have revealed a troubling relationship between mobbing in academia and gender dynamics. Yenilmez (2021) shed light on gender-specific mobbing within universities, illuminating female academics' intersectional challenges. These challenges often include not only mobbing behaviours but also additional pressure and stress stemming from gender-based discrimination. This gendered response is reflected in various studies that emphasize how marginalized groups within the academic workforce are more prone to heightened levels of anxiety and stress due to both mobbing and systemic biases embedded in academic hierarchies (Majerski, 2024). In such cases, the psychological well-being of the targeted individual tends to deteriorate, and other colleagues are also negatively affected by the situation. Such employees often fear becoming the next victim of mobbing, reducing their productivity and overall work performance (Şen, 2017).

In studies conducted to determine the prevalence of mobbing, Hoel (1999) reported that between 3% and 50% of employees have experienced mobbing. Similarly, Leymann (1990) found that 25% of employees in Sweden had been subjected to mobbing, while Rayner (1997) reported that this figure reached 50% in the United Kingdom. In Switzerland, 3.5% of employees have reportedly experienced mobbing during their professional lives (Cemaloğlu & Ertürk, 2007). In his study, Leymann examined the psychological conditions that lead to workplace mobbing and the illnesses observed in victims. He found that 3.5% of a workforce of 4.4 million (approximately 154,000 individuals) had been mobbing for various reasons within the work environment (Ghiasee, 2022). These significant statistics reveal that individuals worldwide are frequently exposed to mobbing in the workplace.

In summary, within academic contexts, mobbing represents a complex and multifaceted issue at the intersection of anxiety and stress. Those faculty members who are subjected to mobbing often experience immediate psychological distress and may face long-term consequences that affect both their professional and personal lives. Institutions must recognise the presence of mobbing and foster a supportive environment that addresses the underlying cultural factors contributing to such harmful behaviour.

Building on this perspective, the present study conceptualizes academic mobbing as a multidimensional construct grounded in recurring behavioral domains documented in the literature. These domains form the conceptual framework guiding the scale development process and include communication and relationship barriers, barriers to academic work, degradation and discrimination, withholding of resources, violence and harassment, and cyber mobbing. This framework provides the theoretical basis for item generation and empirical validation of the scale.

Background

The concept of psychological violence, otherwise referred to as mobbing, was first introduced to the academic literature by Austrian scientist Konrad Lorenz, who employed the term to describe the behaviour of animals attempting to drive away other animals or intruders they perceive as threats (Leymann & Henz, 1990). In Turkish, "mobbing" is also known as harassment, intimidation, or bullying. It denotes actions and behaviours intended to victimize, unfairly exclude, or discredit individuals or groups targeted in the workplace, schools, or communities for various reasons. Unwanted behaviours experienced by an individual in the work environment have been shown to negatively affect occupational health and safety. Such behaviours have a detrimental effect on job performance, with the potential to cause lasting psychological damage and lead to emotional exhaustion (Jung, Lim, & Chi, 2020).

The prevalence of mobbing can often be traced to inadequate organisational practices and toxic workplace environments that tolerate or overlook aggressive behaviour. A paucity of clearly defined policies addressing workplace harassment can contribute to the proliferation of such conduct (Lemon & Barnes, 2021). Competitive environments that lack proper support structures may inadvertently foster mobbing behaviour, leading to the development of a culture where significant psychological harm can occur without intervention (Rasool et al., 2020). As has been documented in the extant literature, instances of bullying and mobbing within the workplace are known to be particularly severe in sectors where comprehensive policies are lacking. This has been shown to result in significant negative consequences for academic staff in higher education institutions (Lemon & Barnes, 2021).

In academic settings, mobbing manifests through a distinct set of behaviours that are closely linked to academic roles, collegial relations, and institutional power structures. Unlike general workplace bullying, academic mobbing often targets an individual's scholarly identity, academic productivity, and professional legitimacy. Therefore, recent studies emphasize the importance of conceptualizing academic mobbing through behavioural domains rather than as isolated incidents (Leymann, 1996; Salin, 2008).

Drawing on prior theoretical and empirical research, academic mobbing can be framed as a multidimensional process encompassing relational, task-related, organizational, and technology-mediated behaviours (Rodríguez-Carballeira et al., 2010; Einarsen et al., 2011). This behavioural-domain approach allows for a more precise operationalization of mobbing experiences in higher education contexts.

The first domain, communication and relationship barriers, includes behaviours such as social exclusion, spreading rumours, and deliberate disruption of collegial communication. These behaviours constitute core mechanisms of mobbing and have been consistently documented in academic and professional environments characterized by informal power hierarchies (Leymann, 1996; Salin, 2008).

The second domain, barriers to academic work and responsibilities, reflects behaviours aimed at obstructing teaching, research, and academic career progression, including interference with course assignments, research activities, and evaluation processes. Prior studies emphasize that such task-related obstructions are particularly salient in academic settings, where performance and legitimacy are strongly tied to scholarly output (Cassell, 2011; Neumann & Salustri, 2019).

Humiliation and discrimination constitute a third behavioural domain, encompassing public degradation, stigmatization, and identity-based discriminatory practices. Empirical classifications of mobbing behaviours identify humiliation as a central strategy through which targets' professional credibility and psychological well-being are undermined (Rodríguez-Carballeira et al., 2010; Iloh, 2021).

The withholding of resources domain captures organizational-level behaviours such as denial of access to information, administrative support, physical space, or academic opportunities. Previous research has documented resource withdrawal as a systematic mechanism used to marginalize individuals and weaken their institutional position (Salin, 2008; Pıçakçıefe et al., 2016; Erdemir, 2023).

The violence and harassment domain includes overt hostile behaviours such as verbal threats, intimidation, and, in rare cases, physical aggression. Although less prevalent in academia, these behaviours represent severe forms of mobbing associated with significant psychological harm (Einarsen et al., 2011; Stoetzer et al., 2009).

Finally, cyber mobbing reflects the increasing role of digital communication in academic harassment, including hostile emails, online defamation, and coordinated attacks through social media or institutional platforms. Recent studies highlight cyber mobbing as an extension of traditional mobbing processes in higher education, intensified by the permanence and visibility of digital environments (Iloh, 2021; Mahmoudi, 2024).

Together, these six behavioural domains synthesize recurring patterns identified in the literature and form the conceptual framework underlying the present scale development process.

In the organizational psychology and occupational health literature, mobbing has been predominantly conceptualized as a systematic and prolonged exposure to hostile behaviours that place the target in a powerless position (Leymann, 1996; Einarsen et al., 2011). Leymann's (1996) seminal model emphasizes the processual nature of mobbing, framing it as a sequence of escalating negative acts that evolve from subtle interpersonal conflicts into severe social exclusion and professional marginalization. Building on this foundation, Einarsen et al. (2011) conceptualize workplace bullying and mobbing within a broader stressor–strain framework, in which repeated exposure to negative acts undermines psychological well-being, job performance, and organizational commitment.

More recent typological approaches have further refined these theoretical foundations by categorizing mobbing behaviours into distinct behavioural domains. Rodríguez-Carballeira et al. (2010), through a Delphi-based hierarchical classification, identify core strategies of workplace bullying, including social isolation, reputational attacks, task-related obstruction, and direct intimidation. Salin (2008) similarly situates mobbing within organizational power dynamics, highlighting how structural conditions, such as control over resources, decision-making authority, and career opportunities, enable systematic harassment.
Within academic settings, these general mobbing models require contextual adaptation. Academic work is characterized by high levels of autonomy, evaluative dependence (e.g., peer review, tenure, promotion), and symbolic capital, which render academics particularly vulnerable to task-related obstruction, reputational damage, and the strategic withholding of institutional resources (Cassell, 2011; Iloh, 2021). Empirical studies focusing on higher education institutions have consistently shown that academic mobbing manifests not only through interpersonal hostility but also through deliberate interference with teaching, research, and career advancement processes (Neumann & Salustri, 2019; Erdemir, 2023).

Accordingly, the conceptual framework underlying the present scale integrates classical mobbing theories with sector-specific evidence from higher education. The six dimensions of the scale—communication and relationship barriers, barriers to academic work and responsibilities, degradation and discrimination, withholding of resources, violence and harassment, and cyber mobbing—are theoretically grounded in established mobbing models while reflecting behavioural patterns uniquely salient to academic environments (Leymann, 1996; Einarsen et al., 2011; Rodríguez-Carballeira et al., 2010; Iloh, 2021). This integrative framework provides a theoretically robust basis for operationalizing academic mobbing as a multidimensional construct and supports the content validity of the developed measurement instrument.

Method

Participants

The study population consists of all academics working at public universities in Türkiye. The sample for the pilot study was selected through simple random sampling from academics employed at the top three public universities according to the 2022–2023 University Ranking by Academic Performance (URAP): Hacettepe University, Middle East Technical University, and Istanbul University. The URAP Research Laboratory, a non-profit organization, was established in 2009 under the Informatics Institute at Middle East Technical University (METU). URAP is responsible for conducting annual national and international university rankings as a public service (URAP Research Laboratory, 2024). Three hundred forty online questionnaires were distributed to academics at these universities, constituting the target group. Of these, 315 were returned with usable data, yielding a response rate of 92.6%. The initial pilot study, the main study, was conducted with academics employed at the top 20 public universities in Türkiye, as ranked in the 2022–2023 University Ranking by Academic Performance (URAP). Of the 1,541 online questionnaires distributed to academics at the top 20 public universities in Türkiye, 710 were completed, resulting in a response rate of 46.1%.

Scale Development Process

The development process of the Academic Mobbing Scale followed a series of structured steps: (I) the development of a pilot questionnaire, (II) the administration of the pilot questionnaire, (III) the analysis and revision of the pilot results, (IV) the administration of the revised questionnaire, and (V) the analysis of the results of the revised questionnaire. At each stage of the design and development process, the instrument's characteristics were examined through empirical studies and expert review. In this regard, the process was guided by the Standards for Educational and Psychological Testing (American Educational Research Association [AERA], American Psychological Association, & National Council on Measurement in Education [NCME], 1999).

Based on the principles outlined in the conceptual framework, an initial item pool of 66 statements was created. This item pool was submitted to the evaluation by two field experts, who were tasked to rate each item using a three-point scale. The values assigned to each category are 1 = appropriate, 2 = inappropriate but revisable, and 3 = inappropriate. Items that were not assigned a rating of "1" were discussed by the authors in a follow-up meeting, where they were either revised or eliminated. Consequently, the item pool was reduced to 60 statements through a refinement process. Subsequently, the response format of the scale was discussed, and it was agreed that a five-point Likert-type scale would be adopted. The scale was developed to assess the perceived frequency of mobbing behaviours, employing the following response categories: 1 = never experienced, 2 = rarely experienced, 3 = moderately experienced, 4 = frequently experienced, and 5 = fully experienced.

Data Analysis

In both the pilot and primary studies, exploratory factor analysis (EFA) was conducted to identify the underlying structure among the items in the AMS. However, in the main study, the data collected from 710 academics were randomly divided into two subsamples ($n_1 = 355$, $n_2 = 355$) to enable factor analysis. EFA was applied to the first subsample (n_1), while confirmatory factor analysis (CFA) was conducted on the second subsample (n_2). Descriptive statistics, EFA, and reliability analyses were performed using SPSS 18, while CFA was carried out using LISREL 8.80 (Jöreskog & Sörbom, 2006).

Before the analysis, the assumptions of EFA, which require evidence of metric variables, were tested. The aforementioned assumptions included inter-item correlations (above .30), the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (>.60), Bartlett's Test of Sphericity ($p < .001$), the absence of outliers, and normality (Field, 2005; Tabachnick & Fidell, 2007).

Univariate normality was assessed through skewness and kurtosis values, visual inspection of histograms with normal curves, and the Kolmogorov–Smirnov test. Given the sensitivity of the Kolmogorov–Smirnov test to sample size, its results were interpreted with caution and were not used as the sole criterion for assessing normality. According to Kline (2011), skewness and kurtosis values exceeding 3 and 10, respectively, may indicate the presence of violations of univariate normality.

Furthermore, Mardia's (1985) multivariate kurtosis coefficient was examined. For the assumption of multivariate normality to be considered acceptable, the critical ratio of this coefficient should not exceed 1.96. Considering the overall pattern of skewness, kurtosis, and graphical diagnostics, the data were deemed to exhibit approximate normality, which is sufficient for exploratory and confirmatory factor analytic procedures.

Boxplots were reviewed to detect potential outliers, and no severe outliers were identified in the data. Regarding the sample size, the criteria of N/p > 5 or a total sample size greater than 250 were considered, suggesting that the sample size in this study was adequate (Everitt, 2001; Gorsuch, 1983).

In exploratory factor analysis, the Principal Axis Factoring (PAF) extraction method was used in line with the approach recommended in scale development studies aimed at revealing latent structures. Principal component analysis (PCA) was not preferred because it is a data reduction technique. This approach aims to determine the factor structure more accurately based on the common variance between items.

In determining the number of factors, the criterion of eigenvalues being greater than 1 was not sufficient; the scree plot was examined and the results of the parallel analysis were taken into account. The fact that the breakpoint in the scree plot became apparent after the fifth factor and that the first five factors were found to be meaningful when compared to the eigenvalues obtained from random data sets in the parallel analysis indicated that the scale had a five-factor structure.

The following criteria were used in selecting items: (i) the loading value of the items on the relevant factor must be at least .40, (ii) the loading difference must be greater than .10 for items loaded on more than one factor, and (iii) the communality values of the items must be above .30. Items that did not meet these criteria were excluded from the analysis, and the factor analysis was re-run.

Due to significant intercorrelations among the subdimensions, the oblique rotation method, direct oblimin, was employed. The number of factors was determined by utilising eigenvalues of at least one as a criterion, while a minimum factor loading of .30 was adopted for item retention.

The factor structure identified through EFA was then subjected to a confirmatory factor analysis (CFA). The model fit was evaluated by calculating the chi-square statistic, and it was adjusted considering the degree of kurtosis in the data (Finney & DiStefano, 2013). The additional fit indices employed in this study encompassed the following: RMSEA ≤ .06 and SRMR ≤ .08 (Hu & Bentler, 1999), GFI > .90 (Marsh & Hau, 1996), CFI > .95 (Hu & Bentler, 1999), and IFI > .90 (Byrne, 1998). Cronbach's alpha coefficient was utilised to assess the internal consistency and reliability of the overall scale and its subscales.

Findings

Pilot Study

In order to examine the factor structure of the scale, the researchers conducted an EFA. Before the analysis, the EFA assumptions were tested, which revealed no correlation coefficients below .30. The Bartlett's test yielded a statistically significant result ($p < .001$). The KMO value exceeded the minimum threshold of .60 (.94). The skewness and kurtosis values, which indicated a normal distribution, ranged between -3 and +3. The Kolmogorov–Smirnov test yielded non-significant results ($p > .05$); however, given the sensitivity of this test to sample size, its results were interpreted with caution. Therefore, univariate normality was primarily evaluated based on skewness and kurtosis values and visual inspection of histograms with normal curves, which suggested no severe deviations from normality. The histograms with standard curves indicated that univariate normality had not been violated. Multivariate outliers were examined using Mahalanobis distance values, and cases exceeding the critical threshold were checked for potential multivariate outliers. The results indicated that the data met the necessary assumptions for factor analysis.

During the exploratory factor analysis (EFA), item retention and elimination decisions were guided by established psychometric criteria, including factor loadings (≥ .40), cross-loading differences (≥ .10), and conceptual coherence within factors. Items exhibiting substantial cross-loadings, weak communalities, or forming conceptually ambiguous factors were removed iteratively. Following successive EFAs, the scale was refined from an initial pool of 60 items to a final set of 32 items loading on six theoretically interpretable dimensions. Detailed information regarding item elimination steps, removed items, and their respective justifications is provided in Appendix A to enhance transparency while maintaining the flow of the main text.

As a result of the EFA, it was determined that the factors related to the scale were categorised into eleven dimensions (60 items in total). However, several items were excluded from the scale due to cross-loadings, specifically those loaded on multiple factors with factor loading differences of .10 or less. The following items were removed for the following reasons: Item 7 (Being excluded within one's department or division), Item 13 (Receiving insulting or degrading remarks about one's personality [habits, manners, etc.], attitudes, or private life), Item 15 (Being asked to leave one's department), Item 16 (Being constantly reminded of one's mistakes or wrongdoings), Item 19 (Being excessively monitored at work), Item 27 (Students being encouraged to file complaints against one), Item 33 (Not being invited to departmental or faculty events), Item 35 (Being humiliated through indirect references by those you do not get along with in class), Item 41 (Being frequently interrupted or embarrassed in public), Item 44 (Being treated as if one is invisible in shared environments), Item 45 (One's teaching schedule being arranged without input from the individual concerned), Item 54 (Being disturbed via phone, email, or inappropriate messages), and Item 56 (Receiving constant warnings about the termination of one's employment contract). In addition, Items 46 (Subjective evaluations of academic incentive, performance, tenure extension or promotion files) and 59 (Intentional rejection of files by reviewers involved in academic incentive and performance processes) were found to form a single factor and were also excluded from the scale. Furthermore, Item 2 (Having one's courses taken away) and Item 53 (Being persistently excluded due to one's gender) were also removed from the scale, forming a separate factor. Following the removal of these items, a new EFA was conducted with the remaining 43 items.

As a result of the second EFA, the factors associated with the scale cluster are under seven dimensions; however, several items were excluded due to cross-loadings, specifically those loaded on more than one factor with factor loading differences of .10 or less. The following items were removed from the scale for the following reasons: Item 1 (Devaluation of academic work by labelling it as low quality), Item 3 (Obstruction of career advancement), Item 11 (Psychological unwellness), Item 17 (Subjection to unpleasant pranks by individuals one does not get along with), Item 42 (Being given humiliating nicknames), and Item 52 (Having important responsibilities taken away and being assigned tedious tasks). A new EFA was conducted with the remaining 37 items.

Following the third EFA, it was ascertained that the scale comprised six factors. However, additional items were excluded due to similar cross-loading issues: Item 6 (Being harassed through monitoring of one's social media accounts), Item 8 (Being mocked for one's political views, ethnic identity, or religious beliefs), Item 28 (Being portrayed as mentally unstable), Item 29 (Withdrawal of colleagues from academic projects or collaborations involving the individual in question), and Item 31 (Being prevented from participating in academic events). An additional EFA was conducted with the remaining 32 items.

The fourth EFA revealed a six-factor structure, explaining 67.83% of the total variance. The six dimensions were labelled as follows: (i) Communication and Relationship Barriers, (ii) Barriers to Academic Work and Responsibilities, (iii) Degradation and Discrimination, (iv) Withholding of Resources, Violence and Harassment, and (v) Cyber Mobbing. As a result of the pilot study, a 32-item scale was finalized. The Cronbach's alpha values for the six subscales were .93, .91, .88, .80, .83, and .72, respectively; the overall reliability coefficient for the scale was found to be .95.

Although the number of items was reduced from 60 to 32 throughout successive EFAs, this refinement process was guided by both statistical and theoretical considerations. Items were removed primarily due to cross-loadings or unstable factor structures, rather than content irrelevance. Importantly, each of the final six dimensions retained multiple items representing the core behavioral domains identified in the academic mobbing literature. Therefore, the reduction in item number is not expected to compromise content coverage, but rather to enhance construct clarity, parsimony, and measurement precision.

Main Study: EFA Findings

Before analysis, the assumptions of the EFA were tested in the main study using the split-half method ($n_1 = 355$). The results obtained during this process of assumption-checking were similar to those from the pilot study, and the six-factor structure of the scale was tested.

Table 1. Factor Loads, Means, and Standard Deviation Values for the AMS.

Items	Six-factor structure						Mean	*SD*
	Communication and Relationship Barriers	Barriers to Academic Work and Responsibilities	Degradation and Discrimination	Withholding of Resources	Violence and Harassment	Cyber Mobbing		
47.	.87						2.11	1.49
14.	.86						2.15	1.49
51.	.82						2.05	1.35
10.	.81						2.19	1.47
32.	.76						2.21	1.49
48.	.76						2.07	1.44
18.	.76						2.69	1.56
36.	.71						2.75	1.68
20.	.65						1.75	1.19
55.	.64						2.41	1.62
24.		.86					1.68	1.26
25.		.84					1.72	1.29
34.		.79					1.65	1.20
22.		.77					1.76	1.25
43.		.73					1.55	1.20
26.		.69					2.08	1.50
23.		.63					2.20	1.48
21.			.89				2.67	1.54
9.			.88				2.67	1.54
58.			.77				2.26	1.50
5.			.65				2.39	1.60
12.			.65				2.39	1.60
4.			.64				2.86	1.50
38.				.76			1.66	1.26
30.				.71			1.76	1.30
37.				.69			2.05	1.43
50.					.85		1.18	.59
39.					.83		1.15	.58
40.					.71		1.12	.53
57.						.88	1.21	.73
49.						.84	1.20	.73
60.						.71	1.11	.50
Mean	2.24	1.81	2.42	1.82	1.15	1.17		
Standard deviation (*SD*)	1.14	1.05	1.24	1.12	.49	.57		
Explained variance (%)	16.14	15.34	13.71	8.93	7.81	7.45		

As a result of the EFA conducted in the main study, a six-factor structure explaining 69.37% of the total variance was identified. By the expert opinions, the names of the dimensions were maintained as follows: “Communication and Relationship Barriers”, “Barriers to Academic Work and Responsibilities”, “Degradation and Discrimination”, “Withholding of Resources”, “Violence and Harassment”, and “Cyber Mobbing”. The factor loadings, arithmetic means, and standard deviations of the items in the measurement tool are presented in Table 1.

Main Study: CFA Findings

Based on the factor structure revealed through the EFA results, a confirmatory factor analysis (CFA) was conducted on the second sample group of the split-half method ($n_2 = 355$). The goodness-of-fit indices calculated for the six-factor model, which consisted of 32 items, are as follows: $\chi^2 = 1327.00$ (df = 458, $p < .001$), $\chi^2/df = 2.90$, RMSEA = .07, SRMR = .08, GFI = .76, CFI = .97, and IFI = .97. Although there is no consensus on an acceptable ratio for the χ^2 statistic, it is generally recommended that this value should be no greater than 5.0 (Wheaton et al., 1977) and, preferably, below 2.0 (Tabachnick & Fidell, 2007). Although the CFI and IFI values indicated excellent incremental fit, the GFI value (.76) was below commonly suggested thresholds. This result should be interpreted in light of the model complexity and sample size. Previous studies have noted that GFI is particularly sensitive to the number of observed variables and tends to decrease in models with a large number of items and latent factors. Therefore, greater emphasis was placed on incremental fit indices (CFI, IFI) and residual-

based indices (RMSEA, SRMR), which are considered more robust in complex measurement models. The standardized factor loadings of the validated structure of the AMS were found to be .91 for “Communication and Relationship Barriers”, .87 for “Barriers to Academic Work and Responsibilities”, .81 for “Degradation and Discrimination”, .90 for “Withholding of Resources”, .79 for “Violence and Harassment”, and .45 for “Cyber Mobbing” (see Figure 1). The relatively lower standardized loading observed for the Cyber Mobbing dimension (.45) suggests that this factor, while related to the overarching academic mobbing construct, may represent a more distinct behavioral domain. This finding is consistent with recent literature emphasizing that cyber mobbing involves different mechanisms, visibility patterns, and temporal dynamics compared to face-to-face mobbing behaviors. Therefore, cyber mobbing may be more weakly integrated into the higher-order construct, and its inclusion should be interpreted as theoretically meaningful but empirically differentiated.

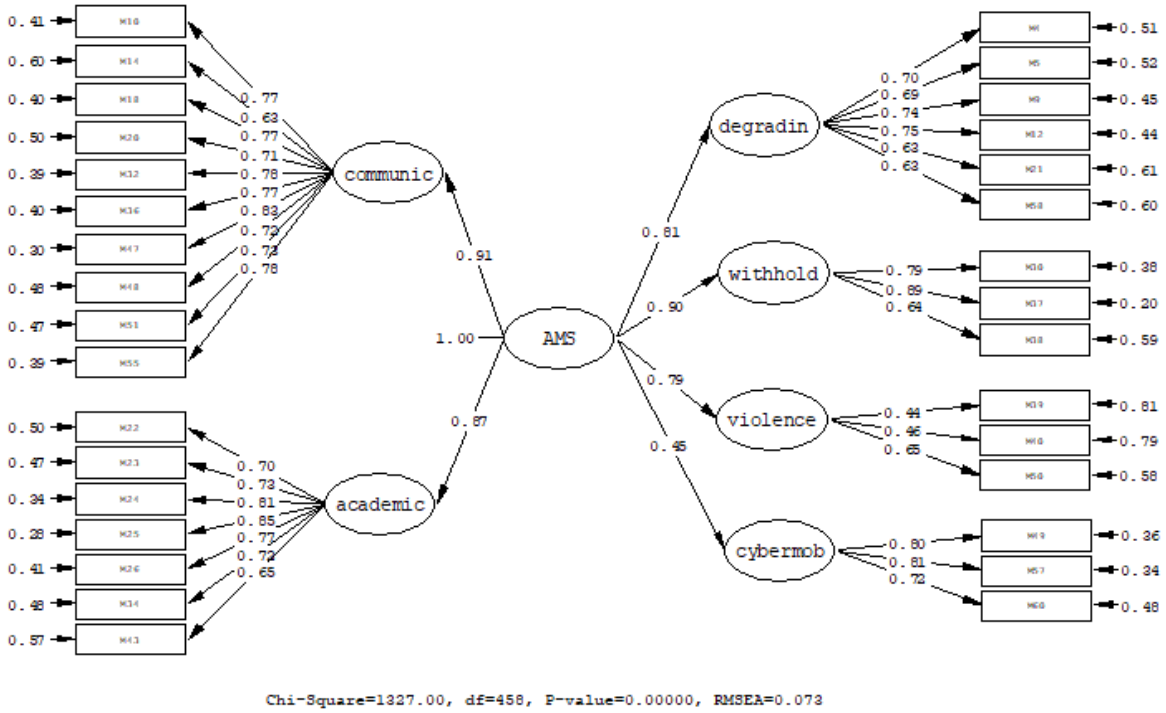

Figure 1. Standardized loadings of the 32-item, six-factor structure of the AMS.

Subsequently, the relationships among the subdimensions of the validated structure were examined in terms of the extent to which academics experience mobbing. The five-point scale was interpreted as follows: The scale ranges from 5.00 to 4.21, denoting a response of "fully experienced"; from 4.20 to 3.41, indicating a response of "frequently experienced"; from 3.40 to 2.61, marking a response of "moderately experienced"; from 2.60 to 1.81, designating a response of "rarely experienced"; and from 1.80 to 1.00, suggesting a response of "never experienced". Based on the established classification, academics reported experiencing mobbing “never experienced” on average (M = 1.77, SD = .94). A more thorough analysis indicated that the highest level of mobbing was observed in the subdimension of Degradation and Discrimination (M = 2.42, SD = 1.24), followed by Communication and Relationship Barriers (M = 2.24, SD = 1.14), Withholding of Resources (M = 1.82, SD = 1.12), Barriers to Academic Work and Responsibilities (M = 1.81, SD = 1.05), Cyber mobbing (M = 1.17, SD = .57), and Violence and Harassment (M = 1.15, SD = .49). Academics reported “rarely” experiencing mobbing in the subdimensions of Degradation and Discrimination, Communication and Relationship Barriers, Withholding of Resources, and Barriers to Academic Work and Responsibilities, while reporting “never experienced” for Cyber mobbing and Violence and Harassment.

The highest item-level scores were as follows: in the Degradation and Discrimination subdimension, the item “Ignorance or disregard of your opinions in academic meetings and committees.” received the highest mean score (M = 2.86); in Communication and Relationship Barriers, the item “The misuse of authority by your supervisors against you.” (M = 2.75); in Withholding of Resources, “Being prevented from accessing the department’s

resources" (M = 2.05); in Barriers to Academic Work and Responsibilities, "The absence of an invitation to academic juries and committees within your department or faculty." (M = 2.20); in Cyber mobbing, "Dissemination of misinformation about you via social media platforms." (M = 1.21); and in Violence and Harassment, "50. Individuals, you have conflicts with being appointed to your students' thesis or doctoral qualification juries." (M = 1.18).

It should also be noted that CFA results are influenced by the choice of estimation method and model complexity. Given the relatively large number of items and factors, fit indices such as GFI may underestimate model fit. In line with current recommendations, multiple indices were considered jointly rather than relying on a single criterion. Consequently, the model fit should be interpreted as acceptable but not perfect, reflecting a balance between empirical adequacy and theoretical comprehensiveness.

Measurement Invariance Test Results

In order to evaluate measurement invariance in the six-factor model, data from both the EFA and CFA were combined, and the relevant statistics are presented in Table 3. The six-factor model demonstrated a good model fit based on the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA) indicated an acceptable model fit for both genders. Furthermore, the configural invariance model, the metric invariance model, and the scalar invariance model across gender groups all demonstrated satisfactory model fit, as evidenced by acceptable CFI values and good RMSEA levels. A minor reduction in model fit was observed between the configural and metric invariance models ($\Delta\chi^2 = 72.42$; $p < .001$; $\Delta CFI = -.01$; $\Delta RMSEA = .01$). Similarly, only a slight decrease in fit was noted between the metric and scalar invariance models ($\Delta\chi^2 = 25.51$; $p < .001$; $\Delta CFI = .001$; $\Delta RMSEA = .001$). Configural, metric, and scalar invariance across age groups also demonstrated acceptable fit. The comparison between the configural and metric models yielded ($\Delta\chi^2 = 104.51$; $p < .001$; $\Delta CFI = -.001$; $\Delta RMSEA = .01$), and between the metric and scalar models ($\Delta\chi^2 = 68.84$; $p < .001$; $\Delta CFI = -.01$; $\Delta RMSEA = .001$), again indicating only minor decreases in model fit. Based on the findings and the recommendations by Chen (2007), measurement invariance was confirmed across both gender and age groups.

Table 2. AMS's measurement invariance across gender and age groups

	Invariance	**χ2(df)**	**P**	**CFI**	**RMSEA [90% CI]**
Gender	Configural	1647.51 (362)	<.01	.96	.059 [0.057; 0.061]
	Metric	1719.93 (384)	<.01	.95	.060 [0.058; 0.062]
	Scalar	1745.44 (394)	<.01	.95	.060 [0.058; 0.062]
Age	Configural	2398.01 (688)	<.01	.95	.043 [0.041; 0.045]
	Metric	2502.52 (716)	<.01	.95	.044 [0.042; 0.046]
	Scalar	2571.36 (742)	<.01	.94	.044 [0.042; 0.046]

Note. *χ2*(*df*): chi-square test of model fit (degrees of freedom), *CFI*: comparative fit index, RMSEA [*90% CI*]: root mean square error of approximation [90% confidence interval].

Reliability Findings

The Cronbach's alpha coefficients for the subdimensions of the AMS ranged from .79 to .93, with an overall alpha of .96 for the full scale (see Table 4). The Pearson correlation coefficients indicated statistically significant and positive relationships among all subdimensions. A strong correlation was observed between Communication and Relationship Barriers and Barriers to Academic Work and Responsibilities ($r = .76$, $p < .01$), Degradation and Discrimination ($r = .75$, $p < .01$), and Withholding of Resources ($r = .72$, $p < .01$). Moderate correlations were found between Communication and Relationship Barriers and Violence and Harassment ($r = .49$, $p < .01$), as well as Cyber Mobbing ($r = .36$, $p < .01$). Similarly, Barriers to Academic Work and Responsibilities showed a strong correlation with Withholding of Resources ($r = .72$, $p < .01$), and moderate correlations with Degradation and Discrimination ($r = .59$, $p < .01$), Violence and Harassment ($r = .56$, $p < .01$), and Cyber mobbing ($r = .46$, $p < .01$). Degradation and Discrimination was moderately correlated with Withholding of Resources ($r = .65$, $p < .01$) and Violence and Harassment ($r = .41$, $p < .01$), and weakly correlated with Cyber mobbing ($r = .30$, $p < .01$). Withholding of Resources also had moderate correlations with Violence and Harassment ($r = .51$, $p < .01$) and Cyber mobbing ($r = .38$, $p < .01$). Finally, a moderate correlation was identified between Violence and Harassment and Cyber Mobbing ($r = .53$, $p < .01$). The findings suggest that the scale as a whole demonstrates a high level of reliability, and each of the six subdimensions also exhibits strong internal consistency.

Table 3 AMS's Sub-Dimensional Statistics.

Sub-dimensions	CR	AVE	MSV	CA	1	2	3	4	5	6
1. Communication and Relationship Barriers	.934	.590	.577	.93	**.77**					
2. Barriers to Academic Work and Responsibilities	.906	.581	.577	.89	.76**	**.76**				
3. Degradation and Discrimination	.886	.569	.563	.87	.75**	.59**	**.75**			
4. Withholding of Resources	.764	.519	.518	.81	.72**	.72**	.65**	**.72**		
5. Violence and Harassment	.840	.639	.313	.79	.49**	.56**	.41**	.51**	**.80**	
6. Cyber Mobbing	.853	.661	.281	.82	.36**	.46**	.30**	.38**	.53**	**.81**
Overall				.96						

** Correlation is significant at the .01 level.

Note. CR: Composite reliability, AVE: Average variance extracted, MSV: Maximum shared variance, CA: Cronbach's alpha. The bold values are the square root of the AVE values in the same row.

The present study sought to estimate composite reliability. In addition to item reliability, average variance extracted (AVE) was employed to assess the items' convergent and discriminant validity. According to Hair et al. (2006), a cut-off value of AVE > .50 is recommended for convergent validity, and the square root of AVE should exceed inter-construct correlations to confirm discriminant validity. The latent variables in the scale were found to be convergent, with significant factor loadings exceeding composite reliability values of .70 ($p < .05$) and AVE values greater than the minimum threshold of .50. Discriminant validity was supported by the square roots of the AVE for each subdimension, which were found to be greater than the inter-factor correlations.

Discussion, Conclusion, and Recommendations

AMS's development represents a significant advancement in comprehending the complex dynamics of workplace bullying within academic institutions. Employing exploratory factor analysis (EFA), the study identified a six-factor structure that captures diverse manifestations of mobbing experienced by academics. The factors under discussion include Communication and Relationship Barriers, Barriers to Academic Work and Responsibilities, Degradation and Discrimination, Withholding of Resources, Violence and Harassment, and Cyber Mobbing. These findings are consistent with the results of the study conducted by Goodboy et al. (2022).

Identifying these specific dimensions is consistent with extant literature that characterizes the multifaceted nature of mobbing, particularly in high-stress environments such as academia. For instance, factors related to Degradation and discrimination are consistent with findings that suggest emotional abuse in educational settings can result in harmful psychological consequences for individuals, similar to those reported in the workplace bullying literature (Erdemir, 2023). Such patterns may manifest through overt behaviours such as verbal degradation (Duyan, 2020) or more covert actions such as cyber mobbing, highlighting the need for a nuanced understanding of how different forms of academic mobbing affect individuals (Tösten et al., 2018).

As indicated by the reported Cronbach's alpha values, the internal consistency of the AMS demonstrates its robustness. The alpha values ranging from .72 to .93 across the various factors suggest high levels of reliability and internal coherence, indicating that the scale is well-structured and serves as a dependable tool for assessing the scope and impact of mobbing in academic settings (Yıldız & Uzunsakal, 2018). The overall Cronbach's alpha coefficient of .95 indicates exceptional effectiveness in capturing the phenomena of interest, which is critical for both research and practical applications in academic institutions.

Although the comparative fit indices (CFI and IFI) indicated a very good model fit, the relatively low GFI value (GFI = .76) warrants further consideration. The goodness-of-fit index is known to be sensitive to sample size, model complexity, and the number of observed variables, and tends to decrease as the number of items and latent constructs increases (Sharma vd., 2005; Hooper vd., 2008). In complex, multidimensional measurement models—particularly those developed for scale construction—GFI values below conventional cut-off thresholds have been frequently reported despite otherwise acceptable or strong model fit (Marsh vd., 2004).

In the present study, the six-factor structure comprising 32 observed variables increases the stringency of absolute fit indices such as GFI. Therefore, greater emphasis was placed on incremental fit indices (CFI and IFI), which are less affected by model complexity and sample size and are widely recommended in contemporary structural equation modeling practice (Hu & Bentler, 1999). Nevertheless, the relatively low GFI value is acknowledged as

a limitation of the model and suggests that future studies may consider testing alternative model specifications or shortened versions of the scale to further improve absolute model fit (Kline, 2016).

Moreover, incorporating multiple mobbing dimensions within the scale reflects a holistic understanding of mobbing in academia. In particular, the factors of Barriers to Academic Work and Responsibilities and Withholding of Resources correspond to the findings that excessive workloads, lack of support, and insufficient resources have been shown to engender increased levels of stress and job dissatisfaction, which may, in turn, engender mobbing behaviours (El-Zoghby et al., 2022). These findings underscore the significance of institutional factors in mitigating or exacerbating mobbing and suggest that educational leaders should adopt comprehensive strategies that address individual behaviors and systemic challenges.

The effects of the aforementioned factors are of critical importance, as the parameters outlining relational barriers and cyber mobbing shed light on the complex interaction between human relations and technological advancements in contemporary academic life. As cyber mobbing becomes increasingly prevalent, understanding how this mechanism operates within academic settings is essential for developing interventions. The extant literature suggests that the emotional consequences of cyberbullying can be as severe as, or even more severe than, traditional forms of harassment, necessitating careful policies and procedures within academic institutions (Duyan, 2020; Çakı & Erol, 2022).

The findings derived from this scale may also contribute to the growing field of academic psychology, particularly concerning emotional well-being. Recent studies have illuminated how academic stressors may be exacerbated by experiences of mobbing, leading to increased burnout among affected individuals and a decline in institutional commitment (Tösten et al., 2018). In this context, it is recommended that institutions consider integrating the Mobbing Scale as a core component of mental health and support services, which would enable the identification of populations at risk and the provision of timely and appropriate interventions (Kaguhangire-Barifaijo et al., 2022).

The findings of the present study indicate that academics, on average, reported relatively low levels of exposure to mobbing behaviours. At first glance, this result may appear inconsistent with a growing body of literature documenting mobbing as a pervasive problem in higher education institutions (Cassell, 2011; Leymann, 1996; Iloh, 2021). However, similar patterns of low self-reported prevalence have also been observed in previous studies, particularly those relying on self-report measures administered within hierarchical organizational settings (Einarsen et al., 2011; Salin, 2008).

One possible explanation for this finding relates to underreporting tendencies commonly identified in mobbing and workplace bullying research. Individuals may normalize negative behaviours as part of academic culture, especially in highly competitive and hierarchical environments, and therefore refrain from labeling such experiences as mobbing (Salin, 2008; Cassell, 2011). Fear of stigmatization, retaliation, or damage to professional reputation may further suppress disclosure, particularly in academic systems characterized by strong power asymmetries and informal control mechanisms (Leymann, 1996; Erdemir, 2023).

Cultural and contextual factors may also contribute to lower reported levels. In collectivist or authority-oriented organizational cultures, behaviours such as exclusion, excessive criticism, or obstruction of academic work may be perceived as legitimate managerial practices rather than psychological violence (Rodríguez-Carballeira et al., 2010). Consequently, academics may report lower overall mobbing scores despite experiencing behaviours that align conceptually with mobbing strategies described in the international literature.

Moreover, methodological considerations should be acknowledged. Self-report instruments capture perceived and acknowledged experiences, which may differ from actual exposure, particularly for subtle or indirect forms of mobbing (Einarsen et al., 2011). Prior studies have shown that indirect behaviours—such as withholding resources, marginalization, or reputational damage—are less likely to be reported unless respondents possess a clear conceptual understanding of mobbing (Leymann, 1996; Rodríguez-Carballeira et al., 2010).

Taken together, the relatively low mobbing levels reported in this study should not be interpreted as evidence of the absence of academic mobbing. Rather, these findings likely reflect a combination of normalization processes, cultural influences, and the inherent limitations of self-report data. From this perspective, the results are consistent with earlier research emphasizing that mobbing in academia often remains latent, indirect, and under-acknowledged, despite its documented psychological and organizational consequences (Cassell, 2011; Iloh, 2021).

Finally, it is important to consider the socio-cultural contexts in which mobbing occurs. Several factors, such as institutional culture, leadership style, and societal norms, can all influence the prevalence and acceptance of mobbing behaviours in academic settings (Erten & Çögenli, 2024; Ayık, 2022). For instance, institutions characterized by hierarchical leadership may face more pronounced issues related to mobbing, as power differentials can facilitate abusive dynamics (Doménech-Betoret et al., 2019).

Limitations and Suggestions for Future Research

Although the present study reports that the AMS is a valid and reliable measurement tool, several limitations should be acknowledged. Firstly, the AMS encompasses particular theoretically critical and experimentally prominent scenarios. In future studies, it is recommended that if behaviours relevant to academics' daily work life and experiences of mobbing are identified, they should be integrated into the scope of the scale to enhance its comprehensiveness. Secondly, the limitation pertains to the nature of mobbing itself. Unfortunately, although many bullying frameworks identify both micro- and macro-level antecedents of bullying (Harvey et al., 2009; Moayed et al., 2006), few have attempted to elaborate on the significant impact of national culture on organizational bullying behaviours. Whether bullying is primarily a function of the individual or the situation remains unresolved. The role of personality variables in predicting bullying may be an important reason, and institutional culture may also influence bullying behaviour (Lewis, 2006).

Conflict of interest
The authors declare that there is no conflict of interest between the authors and any institutions.

Authors' Contribution Rate
The first author contributed 70%, the second author 30%.

Ethical Approval
For this study, approval was received from the Gazi University Educational Sciences Ethics Committee with the decision numbered 1096117/18 and dated 19/11/2024.

References

American Educational Research Association, American Psychological Association, & National Council for Measurement in Education. (1999). *Standards for educational and psychological tests*. American Educational Research Organization.

Ayık, A. (2022). Examining the relationship between mobbing and organizational cynicism. *International Journal of Education and Literacy Studies, 10*(2), 102–109. https://doi.org/10.7575/aiac.ijels.v.10n.2p.102

Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming* (Multivariate applications book series). Lawrence Erlbaum Associates.

Cassell, M. (2011). Bullying in academe: Prevalent, significant, and incessant. *Contemporary Issues in Education Research, 4*(5), 33–44. https://doi.org/10.19030/cier.v4i5.4236

Cemaloğlu, N., & Ertürk, A. (2007). Öğretmenlerin maruz kaldıkları yıldırma eylemlerinin cinsiyet yönünden incelenmesi. *Türk Eğitim Bilimleri Dergisi, 5*(2), 345–365.

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(3), 464–504. https://doi.org/10.1080/10705510701301834

Çakı, A., & Erol, E. (2022). Examining the relationship between academic mobbing and meaningful university work. *e-International Journal of Educational Research*. https://doi.org/10.19160/e-ijer.1182912

Doménech-Betoret, F., Gómez-Artiga, A., & Roselló, L. (2019). The educational situation quality model: A new tool to explain and improve academic achievement and course satisfaction. *Frontiers in Psychology, 10*, Article 1692. https://doi.org/10.3389/fpsyg.2019.01692

Duyan, M. (2020). The effect of mobbing behaviors on students' burnout: Empirical results from a higher educational institution. *African Educational Research Journal, 8*(3), 519–524. https://doi.org/10.30918/aerj.83.20.096

Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (2011). *Bullying and harassment in the workplace: Developments in theory, research, and practice* (2nd ed.). Boca Raton, FL: CRC Press.

El-Zoghby, S., Ibrahim, M., Zaghloul, N., Shehata, S., & Farghaly, R. (2022). Impact of workplace violence on anxiety and sleep disturbances among Egyptian medical residents: A cross-sectional study. *Human Resources for Health, 20*(1), Article 59. https://doi.org/10.1186/s12960-022-00786-1

Erdemir, B. (2023). Destructive leadership and organizational culture are the predecessors of academic mobbing. *Eğitim Bilim ve Araştırma Dergisi, 4*(1), 171–220. https://doi.org/10.54637/ebad.1259385

Erten, Ş., & Çögenli, M. (2024). The relationship between mobbing, public service motivation, and internalization of mission in the public sector. *Mehmet Akif Ersoy Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*. https://doi.org/10.30798/makuiibf.1415347

Everitt, B. S. (2001). *Statistics for psychologists: An intermediate course*. Lawrence Erlbaum.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). Sage.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Sage.

Finney, S. J., & DiStefano, C. (2013). Nonnormal and categorical data in structural equation modeling. In G. R. Hancock & R. O. Mueller (Eds.), *Structural equation modeling: A second course* (pp. 439–492). IAP Information Age Publishing.

Ghiasee, A. (2022). The effect of communication skills and mobbing levels of healthcare professionals on employee silence. *Hacettepe Sağlık İdaresi Dergisi, 25*(3), 465–484.

Goodboy, A. K., Martin, M. M., Mills, C. B., & Clark-Gordon, C. V. (2022). Workplace bullying in academia: A conditional process model. *Management Communication Quarterly, 36*(4), 664–687. https://doi.org/10.1177/08933189221103625

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Lawrence Erlbaum Associates.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Pearson Prentice Hall.

Harvey, M. G., Treadway, D., Heames, J. T., & Duke, A. (2009). Bullying in the 21st-century organization: An ethical perspective. *Journal of Business Ethics, 85*, 27–40.

Hoel, H., Rayner, C., & Cooper, C. L. (1999). Workplace bullying. *International Review of Industrial and Organizational Psychology, 14*(1), 189–205.

Holmgren, K., Dahlin-Ivanoff, S., Björkelund, C., & Hensing, G. (2009). The prevalence of work-related stress, and its association with self-perceived health and sick leave, in a population of employed Swedish women. *BMC Public Health, 9*, Article 73. https://doi.org/10.1186/1471-2458-9-73

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53–60. https://academic-publishing.org/index.php/ejbrm/article/view/1224

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: *A Multidisciplinary Journal, 6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Iloh, C. (2021). Academic mobbing and bullying offline and online: The health hazard academia ignores. *Humanities and Social Science Research, 4*(4), 12–22. https://doi.org/10.30560/hssr.v4n4p12

Jöreskog, K. G., & Sörbom, D. (2006). *An introduction to LISREL 8.80 for Windows* [Computer software]. Scientific Software International, Inc.

Jung, M., Lim, S., & Chi, S. (2020). Impact of work environment and occupational stress on the safety behavior of individual construction workers. *International Journal of Environmental Research and Public Health, 17*(18), Article 6653. https://doi.org/10.3390/ijerph17186653

Kaguhangire-Barifaijo, M., Kyohairwe, S., & Komakech, R. (2022). Academics' enthusiasm for scholarly research engagement: Perspectives on selected universities in Uganda. *Open Journal of Social Sciences, 10*(13), 284–305. https://doi.org/10.4236/jss.2022.1013023

Kaplan, D., Liu, R., & Kaplan, H. (2005). School-related stress in early adolescence and academic performance three years later: The conditional influence of self-expectations. *Social Psychology of Education, 8*(1), 3–17. https://doi.org/10.1007/s11218-004-3129-5

Karaahmet, E. (2013). Overview of the psychiatric reflections of mobbing: Two case reports. *Dusunen Adam: The Journal of Psychiatry and Neurological Sciences, 26*(4), 388–391. https://doi.org/10.5350/dajpn2013260409

Kinman, G., Jones, F., & Kinman, R. (2006). The well-being of the UK academy, 1998–2004. *Quality in Higher Education, 12*(1), 15–27. https://doi.org/10.1080/13538320600685081

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). The Guilford Press.

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York, NY: Guilford Press.

Lemon, K., & Barnes, K. (2021). Workplace bullying among higher education faculty: A theoretical and empirical literature review. *Journal of Higher Education Theory and Practice, 21*(9). https://doi.org/10.33423/jhetp.v21i9.4601

Lewis, S. E. (2006). Recognition of workplace bullying: A qualitative study of women targets in the public sector. *Journal of Community and Applied Social Psychology, 16*, 119–135.

Leymann, H. (1990). Mobbing and psychological terror at workplaces. *Violence and Victims, 5*(2), 119–126.

Leymann, H. (1996). The content and development of mobbing at work. *European Journal of Work and Organizational Psychology, 5*(2), 165–184. https://doi.org/10.1080/13594329608414853

Mahmoudi, M. (2024). Improving diversity and integrity in funding agency peer review processes. *Molecular Pharmaceutics, 22*(1), 1–2. https://doi.org/10.1021/acs.molpharmaceut.4c00815

Majerski, M. (2024). A union's and university's responses to violence against a woman professor: Neoliberal restructuring, hypermasculinity, male privilege, and hegemonic inequality. *Review of Education, 12*(1). https://doi.org/10.1002/rev3.3447

Mardia, K. V. (1985). Mardia's test of multinormality. In S. Kotz & N. L. Johnson (Eds.), *Encyclopedia of statistical sciences* (Vol. 5, pp. 217–221). Wiley.

Marsh, H. W., & Hau, K. T. (1996). Assessing goodness of fit: Is parsimony always desirable? *The Journal of Experimental Education, 64*(4), 364–390. https://doi.org/10.1080/00220973.1996.10806604

Marsh, H. W., Hau, K. T., & Wen, Z. (2004). In Search of Golden Rules: Comment on Hypothesis-Testing Approaches to Setting Cutoff Values for Fit Indexes and Dangers in Overgeneralizing Hu and Bentler's (1999) Findings. Structural Equation Modeling: *A Multidisciplinary Journal, 11*(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2

Moayed, F. A., Daraiseh, N., Shell, R., & Salem, S. (2006). Workplace bullying: A systematic review of risk factors and outcomes. *Theoretical Issues in Ergonomics Science, 7*(3), 311–327.

Neumann, W., & Salustri, F. (2019). Strategies for instructor protection from false and frivolous human rights complaints. In *Proceedings of the Canadian Engineering Education Association (CEEA)*. https://doi.org/10.24908/pceea.vi0.13883

Pıçakçıefe, M., Acar, G., Colak, Z., & Kılıç, İ. (2016). The relationship between sociodemographic characteristics, work conditions, and level of mobbing of health workers in primary health care. *Journal of Interpersonal Violence, 32*(3), 373–398. https://doi.org/10.1177/0886260515586360

Rasool, S., Wang, M., Zhang, Y., & Samma, M. (2020). Sustainable work performance: The roles of workplace violence and occupational stress. *International Journal of Environmental Research and Public Health, 17*(3), 912. https://doi.org/10.3390/ijerph17030912

Rayner, C. (1997). The incidence of workplace bullying. *Journal of Community & Applied Social Psychology, 7*(3), 199–208. https://doi.org/10.1002/(SICI)1099-1298(199706)7:3<199::AID-CASP418>3.0.CO;2-H

Rodríguez-Carballeira, Á., Escartín, J., Vinacua, B., García, C., & Martín-Peña, J. (2010). Categorization and hierarchy of workplace bullying strategies: A Delphi survey. *The Spanish Journal of Psychology, 13*(1), 297–308. https://doi.org/10.1017/S1138741600003875

Salin, D. (2008). The prevention of workplace bullying as a question of human resource management: Measures adopted and underlying organizational factors. *Scandinavian Journal of Management, 24*(3), 221–231. https://doi.org/10.1016/j.scaman.2008.04.004

Sharma, S., Mukherjee, S., Kumar, A., & Dillon, W. R. (2005). A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. *Journal of Business Research, 58*(7), 935–943. https://doi.org/10.1016/j.jbusres.2003.10.007

Shin, J., & Jung, J. (2013). Academics' job satisfaction and stress across countries in the changing academic environments. *Higher Education, 67*(5), 603–620. https://doi.org/10.1007/s10734-013-9668-y

Stoetzer, U., Ahlberg, G., Johansson, G., Bergman, P., Hallsten, L., Forsell, Y., & Lundberg, I. (2009). Problematic interpersonal relationships at work and depression: A Swedish prospective cohort study. *Journal of Occupational Health, 51*(2), 144–151. https://doi.org/10.1539/joh.l8134

Şen, N. (2017). İş hayatında psikolojik şiddet (mobbing): Trabzon örneği. *İmgelem, (7)*, 135–151.

Şenol, V., Avsar, E., Akça, R., Argun, M., Avşaroğulları, L., & Kelestimur, F. (2015). Assessment of mobbing behaviors exposed by academic personnel working at a university in Turkey. *African Journal of Psychiatry, 18*(1), Article 1000212. https://doi.org/10.4172/psychiatry.1000212

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). HarperCollins.

Tatar, Z., & Yüksel, Ş. (2018). Mobbing at the workplace – Psychological trauma and documentation of psychiatric symptoms. *Nöro Psikiyatri Arşivi*. https://doi.org/10.29399/npa.22924

Tösten, R., Avcı, Y., & Okçu, V. (2018). The relation between the exposure to mobbing and burnout levels of secondary school teachers. *International Journal of Learning and Teaching, 10*(4), 355–366. https://doi.org/10.18844/ijlt.v10i4.3459

URAP Research Laboratory. (2024). *General ranking of all universities [Tüm üniversitelerin genel sıralaması]*. https://newtr.urapcenter.org/Rankings/2022-2023/GENEL-SIRALAMASI-2022

Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. F. (1977). Assessing reliability and stability in panel models. In D. R. Heise (Ed.), *Sociological methodology* (pp. 84–136). Jossey-Bass.

Yenilmez, M. (2021). The problem of academic gender mobbing in Turkish universities. *Revista de Investigaciones Universidad del Quindío, 33*(2), 97–108. https://doi.org/10.33975/riuq.vol33n2.544

Yıldız, D., & Uzunsakal, E. (2018). Alan araştırmalarında güvenilirlik testlerinin karşılaştırılması ve tarımsal veriler üzerine bir uygulama. *Uygulamalı Sosyal Bilimler Dergisi, 1*, 14–28. https://dergipark.org.tr/tr/pub/iuusbd/issue/38311/399621

The Academic Mobbing Scale

Items	Mobbing Behaviours	Never experienced	Rarely experienced	Moderately experienced	Frequently experienced	Fully experienced
1	Speaking unfavourably about you to individuals outside the university.					
2	Being shouted at or becoming the subject of an outburst of anger (or resentment).					
3	Being deliberately ignored by your colleagues.					
4	The spread of gossip and rumours about you.					
5	Pressuring those who are friendly or close to you.					
6	Making claims against your academic competence.					
7	Being subjected to accusations and allegations.					
8	The misuse of authority by your supervisors against you.					
9	Being the subject of excessive mockery or ridicule.					
10	Your supervisor is adopting an adversarial position towards you.					
11	Applying pressure to prevent students from enrolling in your courses.					
12	Applying pressure to prevent students from selecting you as their advisor.					
13	Aggressive behaviour directed toward students under the supervision of.					
14	Others displaying biased attitudes toward your students' theses or articles.					
15	Pressuring administrators to exclude you from academic committees and boards.					
16	Preventing your appointment to senior administrative positions.					
17	The absence of an invitation to academic juries and committees within your department or faculty.					
18	Being subjected to an unsustainable workload.					
19	Being humiliated by the assignment of tasks that fall below your level of competence.					
20	Being held responsible for tasks that fall outside your designated area of authority.					
21	Being pressured not to request your entitlements (e.g., sick leave, vacation time, travel allowance, etc.).					
22	Withholding academic information that is crucial to your success.					
23	Ignorance or disregard of your opinions in academic meetings and committees.					
24	The loss of office facilities or technological equipment.					
25	Being refused access to university laboratories and other research facilities.					
26	Being prohibited from using departmental or faculty resources.					
27	Individuals, you have conflicts with being appointed to your students' thesis or doctoral qualification juries.					
28	Being subjected to sexual harassment.					
29	Being subjected to physical violence.					
30	Being subjected to online harassment via fake social media accounts.					
31	Dissemination of misinformation about you via social media platforms.					

32	Being harassed during live broadcasts on various platforms, such as Zoom, YouTube, or Instagram.					

Sub-dimensions and Items
1. Communication and Relationship Barriers: 1-2-3-4-5-6-7-8-9-10
2. Barriers to Academic Work and Responsibilities:11-12-13-14-15-16-17
3. Degradation and Discrimination: 18-19-20-21-22-23
4. Withholding of Resources: 24-25-26
5. Violence and Harassment:27-28-29
6. Cyber Mobbing: 30-31-32

Appendix A

Item Elimination Process during Exploratory Factor Analysis (EFA)

To ensure both statistical robustness and conceptual clarity, the scale development process followed an iterative exploratory factor analysis (EFA) procedure. Item retention and elimination decisions were guided by established psychometric criteria, including (a) factor loadings of at least .40, (b) cross-loading differences greater than .10, (c) adequate communalities, and (d) theoretical coherence with the intended construct. Items failing to meet these criteria were removed stepwise. The detailed elimination process is summarized in Table A1.

Table A1. Summary of Item Elimination across EFA Stages

EFA Stage	Removed Items	Primary Reason(s) for Removal
Initial EFA (60 items)	7, 13, 15, 16, 19, 27, 33, 35, 41, 44, 45, 54, 56	Substantial cross-loadings (difference ≤ .10), weakening factorial distinctiveness
	46, 59	Formation of an isolated single factor; lack of conceptual integration with the overall construct
	2, 53	Emergence of an unintended separate factor; misalignment with the theoretical scope of academic mobbing
Second EFA (43 items)	1, 3, 11, 17, 42, 52	Cross-loadings, low communalities, and conceptual ambiguity
Third EFA (37 items)	6, 8, 28, 29, 31	Insufficient factor loadings (< .40), redundancy, or overlap across dimensions
Final EFA (32 items)	_	Six-factor structure retained; all remaining items demonstrated satisfactory psychometric and conceptual properties