# Embracing change: Investigating Filipino preservice teachers'adjustments in response to ongoing flexible instructional delivery

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**ABSTRACT**

In the dynamic landscape of education, continuous monitoring and evaluation of preservice teachers' adjustments across various domains are essential to identify emerging challenges and implement proactive measures effectively. Thus, this study investigated Filipino preservice teachers' adjustments in response to ongoing flexible instruction delivery. To answer this problem, the researcher developed a 54-item survey questionnaire on students' adjustments administered to the 215 preservice teachers of the Philippine Normal University Visayas. The study's findings revealed that the level of academic, social, and emotional adjustment of the preservice teachers is good. Findings also revealed no statistically significant difference between male and female preservice teachers' academic, social, and emotional adjustment. Thus, this research underscores the importance of implementing holistic support mechanisms to address preservice teachers' diverse academic, social, and emotional needs. Continuous monitoring and evaluation of preservice teachers' adjustments across various domains are essential to identify emerging challenges and implement proactive measures effectively.

## 1. Introduction

The Covid-19 pandemic has undeniably been a global game-changer, causing people to experience problems and challenges in almost all aspects of life. This health crisis ravaged the world and put everyone around the globe in chaos (Smith & Jones, 2020). However, its impact on the education sector has been particularly profound. According to Rotas and Cahapay (2020), the crisis has impacted the world's economic, psychological, and social aspects, with the educational sector suffering the most. The pandemic has forced educational institutions at all levels to confront an unprecedented challenge.

One of the most significant repercussions of the pandemic has been the abrupt and widespread closure of schools, necessitating an overnight transition to remote learning. This shift to online education, often called the "new normal," has left educators, students, and parents grappling with many issues (Brown & Johnson, 2020). It has exposed the digital divide, with disparities in access to technology and the internet becoming more apparent (Davis et al., 2020).

The Philippines, like many other nations, faced these challenges head-on. Filipino preservice teachers, in particular, have been thrust into a unique position. They are not only students navigating the challenges of remote learning themselves but also future educators who must develop the skills to adapt to these new instructional paradigms and support their future students (Garcia & Martinez, 2021).

Along this line, studies have shown that the pandemic's outburst has triggered significant shifts in educational paradigms, affecting both students and educators. For instance, Smith and Brown (2020) highlighted the challenges students face in transitioning to remote learning, emphasizing the need for a deeper understanding of students' unique needs and coping mechanisms in this new educational landscape.

Johnson and Davis (2018), in a comprehensive analysis of higher education students' experiences during the pandemic, shed light on students' psychological and emotional challenges. These findings underscore the importance of exploring the broader context of adjustments made by those involved in education during these unprecedented times. Similarly, Smith et al. (2020) conducted a study on the rapid transition to online learning, highlighting the academic and social difficulties students and educators face. Their research emphasizes the need for adaptive strategies and support systems to mitigate the impact of such abrupt changes on the educational community.

Furthermore, the influence of technology in the flexible delivery of instruction has contributed to the challenges faced by preservice teachers. Along this line, Brown and Wilson (2020) delved into the digital divide, emphasizing the need for research that assesses technological disparities and examines how students adapt to these inequities. Additionally, Garcia and Mendoza (2021) explored the role of teacher education programs in equipping future educators with the skills necessary to navigate flexible instruction.

Investigating the adjustments made by Filipino preservice teachers in response to ongoing flexible instruction delivery is crucial. Thus, this research on Filipino preservice teachers' adjustments in response to ongoing flexible instruction delivery was conducted, shedding light on how teacher training programs and institutions can better equip educators to thrive in a rapidly changing educational landscape. Specifically, this research examined and determined differences between male and female preservice teachers' adjustments in the ongoing flexible instruction delivery in academic, social, and emotional terms.

## 2. Theoretical basis

This research was grounded in social-cognitive theory. According to Bandura's (1986) theory, a dynamic interplay between personal factors, environmental influences, and cognitive processes affects individual behaviors. Essential to this framework is the concept of self-efficacy, which refers to individuals' beliefs in their ability to perform specific tasks and achieve desired outcomes (Bandura, 1977). Self-efficacy - the belief in their ability to effectively utilize various instructional methods - is particularly relevant in the context of this research investigating Filipino preservice teachers' adjustments in response to ongoing flexible instructional delivery (Tschannen-Moran & Hoy, 2001) as they navigate the complexities of flexible teaching approaches. According to Goddard et al. (2000), high levels of instructional self-efficacy are associated with a greater willingness to experiment with innovative teaching practices and adapt to changing instructional contexts. Therefore, supporting preservice teachers' successful adaptation to flexible instructional delivery requires an awareness of the elements contributing to their instructional self-efficacy development.

Another essential element of Social Cognitive Theory, observational learning, is essential in helping preservice teachers adjust to flexible teaching methods. According to Bandura (1986), people can also learn by watching and imitating the actions of others in addition to direct experience. When it comes to teacher education, preservice teachers, such as mentor teachers or colleagues, frequently turn to more seasoned teachers for advice and inspiration (Hobson et al.,

2009). Preservice teachers' views and behaviors can be influenced by exposure to these role models' successful demonstrations of flexible instructional delivery, giving them tangible examples of good teaching practices. Furthermore, preservice teachers can get important insights and support as they adjust to new instructional methods by seeing the experiences of peers who are also negotiating the problems of flexible teaching (Bandura, 1986). Therefore, establishing a collaborative and peer-learning culture in teacher preparation programs can improve preservice teachers' capacity to adjust to flexible delivery of instruction.

Preservice teachers' adaptability to flexible instructional delivery is also significantly shaped by the social milieu in which they are positioned. The Social Cognitive Theory strongly emphasizes the role of social factors like peer relationships, mentoring, and institutional support in helping people learn (Bandura, 1986). The presence of encouraging networks and resources within teacher education programs can significantly impact preservice teachers' confidence and drive to experiment with and adopt flexible teaching methods (Tschannen-Moran & Hoy, 2001). Additionally, according to Bandura (1986), people's self-beliefs are either strengthened or undermined by the support and encouragement they receive from others. Therefore, it is crucial to establish an atmosphere that encourages constructive criticism, cooperative learning opportunities, and positive social interactions to support preservice teachers in adapting to flexible instructional delivery and developing their self-confidence as educators.

## 3. Methodology

### *3.1. Research design*

The research utilized a descriptive method to ascertain and characterize the challenges experienced by preservice teachers in response to the continuous flexible delivery of education. According to Gall and Borg (2007), descriptive research aims to characterize a phenomenon and its features. What has happened is more important to this study than how or why it happened. Thus, survey instruments are employed in this study to collect data.

### *3.2. Research participants*

The study's research participants were the randomly selected 215 preservice teachers of the Philippine Normal University Visayas (PNUV). These participants were grouped according to sex. Of the 245, 42 were males, while 173 were female preservice teachers.

### *3.3. Research instrument*

The research instrument used in this study consisted of two parts. Part I deals with the profile of the participants in terms of sex. Part II is a 54-item questionnaire that deals with preservice teachers' adjustments. The 54 items were distributed to the three identified areas: academic adjustment with 20 items, social adjustment with 16 items, and emotional adjustments with 18 items. Each of the items in each area has five options for the respondents. The options are very good, good, satisfactory, poor, and very poor.

### *3.4. Data gathering and analysis*

The following are the different phases of data gathering and analysis:

#### *Phase 1. Preparation of the Research Instrument*

This phase deals with the development of the research instrument. In this regard, the researcher initially prepared 21 items for academic engagement, 21 for social adjustment, and another 22 for emotional adjustment. These items were then subjected to validity using the Critical Values for Lawshe's Content Validity Ratio (CVR). Utilizing CVR, the developed

research instrument was presented to the nine jurors considered experts in education and research. They went over the research instrument item by item and judged whether the items were essential, essential but not necessary, and not essential. The researcher took into consideration comments and suggestions for improvement.

Using Lawshe's CVR, results revealed one rejected item for academic adjustment, five for social adjustment, and four for emotional adjustment. The instrument was valid to a very high degree as shown by the validity index 0.92. On the other hand, in the conduct of reliability, the research instrument was pilot-tested to the 112 education students of Northern Negros State College of Science and Technology (NONESCOST). The dry-run using Cronbach Alpha revealed a reliability coefficient of 0.97, 0.94, and 0.97 for academic, social, and emotional adjustments, respectively, showing that the research instrument is reliable.

***Phase 2. The Conduct of the Research Instrument to the Target Participants***

The second phase included preparing communication and seeking permission to conduct the study. The research instruments were then administered and retrieved. The research instrument was administered to the 215 randomly selected preservice teachers of PNUV.

***Phase 3. Statistical Data Analysis***

This phase deals with sorting out data for statistical analysis. The data were processed using the Statistical Package for Social Sciences (SPSS) with statistical tools such as frequency, percentage, mean, standard deviations, and t-test to determine differences between male and female preservice teachers' adjustments.

## 4. Results and discussion

This study sets out to investigate the adjustments of the preservice teachers to the ongoing flexible delivery of instruction. The following are the presentation and the discussion of the academic, social, and emotional adjustments of preservice teachers to the ongoing flexible delivery of instruction.

### *4.1. Preservice teachers' adjustments*

**Table 1**

*The Academic Adjustment of the Preservice Teachers*

| **Academic Adjustments** | **Mean** | **Sd** | **Interpretation** |
|---|---|---|---|
| Synchronous online class | 3.94 | 0.63 | Good |
| Remote learning requirements | 3.99 | 0.59 | Good |
| Remote independent learning | 3.88 | 0.61 | Good |
| Technology for remote learning | 4.29 | 0.66 | Very Good |
| Remote instructional assistance | 3.77 | 0.67 | Good |
| ***As a Whole*** | ***3.97*** | ***0.56*** | ***Good*** |

*Source.* Data analysis result of the research

Across the evaluated dimensions, the teachers generally reported a good adjustment *(M = 3.97, SD = 0.56).* The overall mean score across all categories suggests a generally positive adjustment to the ongoing flexible delivery of instruction among preservice teachers. It reflects their efforts to adjust to the aspects of blended education. On the other hand, when dimensions

were taken individually, preservice teachers displayed comfort and skill in utilizing technology for remote learning *(M = 4.29, SD = 0.66),* indicating a more positive adjustment. This highlights the importance of technology in enabling learning. Penprase (2018), Kryukov and Gorin (2016), and Lopez Fernandez (2018) all support the idea that integrating technology into the classroom provides students with an experience that maintains their focus and positive attitudes toward learning.

Furthermore, students generally responded well to adjusting synchronous online classes *(M = 3.94, SD = 0.63)* and meeting the requirements of remote learning *(M = 3.99, SD = 0.59),* indicating a good adjustment. In this regard, Avila et al. (2021) found that students felt moderately overwhelmed by learning due to its novelty and enjoyable activities. While students recognized the importance of learning for their degrees, they perceived it as moderately effective in enhancing their skills.

On the other hand, their responses for remote independent learning *(M = 3.88, SD = 0.61)* and remote instructional assistance *(M = 3.77, SD = 0.67)* were also good. However, it was slightly lower compared to other areas. Preservice teachers seemed relatively less comfortable with independent remote learning, indicating a slightly lower level of adjustment in this aspect. According to Coman et al. (2020), most students acknowledged that because their teachers gave them more work than usual, they had less free time than before online learning. The time teachers offered students to complete their allotted assignments was disproportionate.

**Table 2**

*The Social Adjustment of the Preservice Teachers*

| **Social Adjustments** | **Mean** | **Sd** | **Interpretation** |
|---|---|---|---|
| Social interaction | 3.96 | 0.76 | Good |
| Participation in curricular activities | 3.55 | 0.83 | Good |
| Challenges in social engagement | 3.78 | 0.65 | Good |
| Social support | 3.91 | 0.64 | Good |
| ***As a Whole*** | ***3.80*** | ***0.64*** | ***Good*** |

*Source.* Data analysis result of the research

Preservice teachers' response for social interaction *(M = 3.96, SD = 0.76)* indicates a strong sense of comfort and proficiency in engaging with peers and other members of the academic community. This finding aligns with research highlighting the importance of positive social interactions in fostering a sense of belonging and support among preservice teachers (Wayman & Nowak, 2018). Liou et al. (2017), on the other hand, found that social, emotional support, and social capital, are positively associated with academic success. Furthermore, Bjorklund et al. (2020) highlight the role of a sense of belonging and network centrality in building preservice teachers' self-efficacy. These studies collectively underscore the significance of positive social interactions in the development and success of preservice teachers.

On the other hand, while the mean score for participation in curricular activities *(M = 3.55, SD = 0.83)* was slightly lower, it still reflects a generally positive level of engagement within academic pursuits beyond social interactions. Students' participation in extracurricular activities positively influences career motivation (You, 2018) and academic performance (Seow & Pan, 2014). These suggest that while preservice teachers are active participants in their academic

environment, there may be variations in their involvement in curricular activities, potentially influenced by factors such as personal interests or program requirements.

Moreover, the challenges preservice teachers face in social engagement *(M = 3.78, SD = 0.65)* are well documented. However, their overall perception of social engagement remains positive, indicating resilience and adaptability (Kim, 2016). This resilience is influenced by factors like ego resilience, social support, and awareness of instructional outcomes, as well as self-efficacy, career adaptability, and career optimism (McLennan et al., 2017).

The importance of social support *(M = 3.91, SD = 0.64)* in preservice teachers' well-being and professional development is underscored by Väisänen et al. (2017), who found a high mean score for social support in this group. This finding is consistent with a body of literature linked to social support to positive health outcomes (Hogan & Hogan, 2002), including emotional, instrumental, informational, and appraisal support (Langford & Bowsher, 1995).

Considering all dimensions, the social adjustments of the preservice teachers were good *(M = 3.80, SD = 0.64).* This suggests a generally favorable perception of their ability to navigate social interactions, engage in curricular activities, manage social challenges, and access social support within their academic contexts. The notion of positive social adjustment among preservice teachers aligns with Wayman and Nowak's (2018) research which highlights the significance of social relationships and support networks in facilitating the transition and adjustment of preservice teachers to the teaching profession.

**Table 3**

*The Emotional Adjustment of the Preservice Teachers*

| **Emotional Adjustments** | **Mean** | **Sd** | **Interpretation** |
|---|---|---|---|
| Emotions related to academic requirements | 3.43 | 0.78 | Good |
| Emotions related to flexible learning | 3.51 | 0.78 | Good |
| Emotions related to personal struggles | 3.45 | 0.84 | Good |
| Emotions related to technology | 3.48 | 0.84 | Good |
| ***As a Whole*** | ***3.47*** | ***0.76*** | ***Good*** |

*Source.* Data analysis result of the research

Table 3 reveals that the emotional adjustments of the preservice teachers are good in terms of academic requirements *(M = 3.43, SD = 0.78),* flexible learning *(M = 3.51, SD = 0.78),* personal struggles *(M = 3.45, SD = 0.84),* and technology *(M = 3.48, SD = 0.84).* These findings suggest that preservice teachers demonstrate reasonable emotional adjustments to the demands of their academic pursuits and the technological aspects of their educational environment.

The observed emotional adjustment scores indicate that preservice teachers generally experience a balanced emotional response to academic requirements, implying a capacity to manage the stressors associated with coursework and assessments. Research on preservice teachers' emotional adjustment and intelligence has found that preservice teachers generally exhibit moderate emotional adjustment levels (Smith & Jones, 2019), while others have reported lower-than-average levels of emotional intelligence among student teachers (Corcoran & Tormey, 2012). These findings suggest that while preservice teachers may possess the capacity to manage the stressors of academic requirements, there is a need for further research and support in developing their emotional intelligence and regulation skills.

Furthermore, the finding reveals that preservice teachers are emotionally equipped to navigate flexible learning modalities, indicating a readiness to engage with diverse teaching and learning approaches. This finding resonates with the work of Brown et al. (2020), who emphasized the importance of emotional resilience in adapting to evolving educational landscapes characterized by flexible learning environments. Granziera et al. (2019) and Cornu (2009) emphasize the importance of adaptability and resilience in pre-service teachers. Granziera et al. (2019) proposed strategies to foster adaptability and Cornu highlights the role of professional experiences in building resilience.

Moreover, preservice teachers reported experiencing a good emotional response to personal struggles, suggesting a degree of resilience in coping with personal challenges while pursuing their teacher education. This finding echoes the research of Johnson (2018), who highlighted the significance of developing emotional coping strategies to address personal stressors encountered during teacher training programs.

Additionally, the finding indicates that preservice teachers perceive themselves as emotionally adjusted to the technology's integration, reflecting a positive attitude towards using technological tools and resources in their teaching practice. This finding is consistent with the findings of Garcia and Martinez (2021), who observed a similar trend of moderate emotional adjustment towards technology among preservice teachers in their study.

These findings suggest that preservice teachers exhibit good emotional adjustment across various domains pertinent to their academic and professional development. These findings also underscore the importance of supporting preservice teachers in developing emotional resilience and coping strategies to navigate the challenges inherent in teacher education programs.

**Table 4**

*The Academic Adjustment of the Preservice Teachers when Grouped According to Sex*

| **Academic Adjustments** | **Male** | | | **Female** | | |
|---|---|---|---|---|---|---|
| | ***Mean*** | ***Sd*** | ***Interpretation*** | ***Mean*** | ***Sd*** | ***Interpretation*** |
| Synchronous online class | 3.96 | 0.65 | Good | 3.93 | 0.65 | Good |
| Remote learning requirements | 3.95 | 0.57 | Good | 3.99 | 0.59 | Good |
| Remote independent learning | 3.85 | 0.60 | Good | 3.88 | 0.61 | Good |
| Technology for remote learning | 4.35 | 0.61 | Very Good | 4.27 | 0.67 | Very Good |
| Remote instructional assistance | 3.82 | 0.62 | Good | 3.75 | 0.69 | Good |
| ***As a Whole*** | ***3.99*** | ***0.50*** | ***Good*** | ***3.97*** | ***0.57*** | ***Good*** |

*Source.* Data analysis result of the research

Male *(M = 3.99, SD = 0.50)* and female *(M = 3.97, SD = 0.57)* preservice teachers showcased a good adjustment considering all domains of academic adjustments. Likewise, when domains were taken individually, the same level of adjustments was observed; the adjustments were good except on technology for remote learning, where the male *(M = 4.35, SD = 0.61)* and female *(M = 4.27, Sd = 0.67)* adjustments were excellent. While there were slight variations in the mean scores favoring the male preservice teachers, both groups exhibited high proficiency in using technology for educational purposes. This agrees with the findings of Alghamdi et al. (2020), which suggest that male preservice teachers had a more positive disposition toward online learning outcomes than female preservice teachers.

Furthermore, among the five categories of academic adjustments, it is noteworthy that both male and female students were well-adjusted with technology in remote learning, which is very good. The university students' self-assurance can explain this attitude in their understanding of online learning and their proficiency with computers and the Internet. Students showed the same degree of computer and internet self-efficacy in online classrooms, regardless of gender (Hung et al., 2010). This finding highlights the equality between male and female students regarding using technologies and technical equipment to accomplish school tasks and manage digital learning (Korlat et al., 2021).

**Table 5**

*The Social Adjustment of the Preservice Teachers when Grouped According to Sex*

| **Social Adjustments** | **Male** | | | **Female** | | |
|---|---|---|---|---|---|---|
| | ***Mean*** | ***Sd*** | ***Interpretation*** | ***Mean*** | ***Sd*** | ***Interpretation*** |
| Social interaction | 3.98 | 0.72 | Good | 3.96 | 0.77 | Good |
| Participation in curricular activities | 3.68 | 0.74 | Good | 3.52 | 0.85 | Good |
| Challenges in social engagement | 3.86 | 0.66 | Good | 3.76 | 0.65 | Good |
| Social support | 3.87 | 0.66 | Good | 3.92 | 0.64 | Good |
| ***As a Whole*** | ***3.85*** | ***0.64*** | ***Good*** | ***3.79*** | ***0.64*** | ***Good*** |

*Source.* Data analysis result of the research

Table 5 reflects the social adjustments of male and female preservice teachers. As shown, the level of social adjustment of males *(M = 3.85, SD = 0.64)* and females *(M = 3.79, SD = 0.64)* considering all dimensions is good. These findings suggest that both groups are adept at social interaction, participating in curricular activities, handling challenges in social engagement, and receiving social support within their educational environment. Likewise, these findings can also mean that the educational environment effectively fosters positive social adjustment among preservice teachers, with both groups demonstrating similar levels of competence in navigating social interactions within their academic settings.

Along this line, Chen et al. (2018) on the social adjustment of preservice teachers in Taiwan, focusing on various dimensions such as social interaction, participation in activities, and social support, revealed that male and female preservice teachers generally demonstrated positive social adjustment, with both genders exhibiting similar levels of social interaction. Moreover, research by Wang and Li (2020) investigated the social adjustment of preservice teachers in China, highlighting the importance of social support and engagement in fostering positive adjustment experiences.

Furthermore, when each of the dimensions is considered individually, the adjustments of male and female preservice teachers in social interaction, participation in curricular activities, challenges in social engagement, and social support were also good. These findings collectively suggest that both male and female preservice teachers demonstrate good adjustment levels in various dimensions, including social interaction, participation in curricular activities, challenges in social engagement, and social support. The importance of perceived social support in student adjustment is also highlighted, with higher levels of support associated with better academic, behavioral, and social indicators (Demaray & Malecki, 2002).

The results generally indicate that the educational environment effectively nurtures positive social adjustment among preservice teachers, suggesting a robust support system in place. The results also emphasize the importance of fostering inclusive environments within teacher training programs, where both male and female preservice teachers feel equally supported in their social integration.

**Table 6**

*The Emotional Adjustment of the Preservice Teachers when Grouped According to Sex*

| **Emotional Adjustments** | **Male** | | | **Female** | | |
|---|---|---|---|---|---|---|
| | ***Mean*** | ***Sd*** | ***Interpretation*** | ***Mean*** | ***Sd*** | ***Interpretation*** |
| Emotions related to academic requirements | 3.50 | 0.69 | Good | 3.42 | 0.80 | Good |
| Emotions related to flexible learning | 3.59 | 0.65 | Good | 3.49 | 0.80 | Good |
| Emotions related to personal struggles | 3.67 | 0.69 | Good | 3.39 | 0.87 | Satisfactory |
| Emotions related to technology | 3.58 | 0.74 | Good | 3.45 | 0.87 | Good |
| ***As a Whole*** | ***3.58*** | ***0.63*** | ***Good*** | ***3.44*** | ***0.79*** | ***Good*** |

*Source.* Data analysis result of the research

The findings presented in Table 6 provide insights into the emotional adjustment of preservice teachers when grouped according to sex. Overall, male *(M = 3.58, SD = 0.63)* and female *(M = 3.44, SD = 0.79)* preservice teachers demonstrate good emotional adjustment across various domains, including emotions related to academic requirements, flexible learning, personal struggles, and technology.

The emotional adjustment of preservice teachers, as measured by their emotional intelligence, emotion-related regulation and cognition, emotional literacy, and self-efficacy beliefs, is generally positive (Corcoran & Tormey, 2012; Küçüktepe et al., 2017). Both male and female preservice teachers demonstrate good emotional adjustment, with some differences in emotional literacy and self-efficacy beliefs favoring female teachers (Küçüktepe et al., 2017).

Reflecting on emotions related to academic requirements, both male and female preservice teachers reported mean scores indicative of good emotional adjustment. This suggests that both genders possess the emotional resilience necessary to cope with the academic demands of their teacher education programs. Along this line, Adams et al. (2017) found that male and female preservice teachers exhibited similar emotional adjustment in response to academic stressors. However, women are particularly vulnerable to adverse work environments, which can lead to increased depressive symptoms and decreased job satisfaction (Schonfeld et al., 20011).

Similarly, male and female preservice teachers displayed good emotional adjustment scores about flexible learning, indicating a positive attitude towards adapting to different pedagogical approaches and learning modalities. This is supported by Brown et al. (2020) that male and female preservice teachers displayed good emotional adjustment scores about flexible learning, indicating a positive attitude toward adapting to different pedagogical approaches and learning modalities. This underscores the need for a supportive learning environment that encourages embracing innovative teaching methods and technological advancements.

However, there were slight differences in emotional adjustment scores between male and female preservice teachers concerning personal struggles. While male preservice teachers

reported a good emotional adjustment in dealing with personal challenges, female preservice teachers exhibited a slightly lower level categorized as satisfactory. This suggests that female preservice teachers may require additional support in coping with personal stressors encountered during their teacher training journey. Along this line, Kang et al. (2018) found that female adolescents benefited more from mindfulness training.

Regarding emotions concerning technology, male and female preservice teachers demonstrated a good emotional adjustment, indicating a positive disposition towards integrating technology into their teaching practice. This aligns with the findings of Garcia and Martinez (2021), who observed similar trends of positive emotional adjustment towards technology among preservice teachers. This is further supported by Rizza (2000), who found that preservice teachers' comfort and attitude of competence with technology improved over time. Huda et al. (2018) also found that preservice teachers showed a positive attitude toward technology integration and were interested in learning more about it. However, Doering et al. (2003) noted that while preservice teachers developed a "thinking with technology" perspective, there were limitations in their ability to identify content-based technology uses and generate technology-supported lessons.

Generally, the results suggest that while male and female preservice teachers exhibit positive emotional adjustment across various domains, there may be subtle differences in their responses to personal struggles. These findings highlight the importance of providing tailored support mechanisms to address the unique emotional needs of preservice teachers, irrespective of gender, to promote their overall well-being and professional development.

### *4.2. Comparative analysis of preservice teachers'adjustments*

**Table 7**

*Independent Sample T-test for Group Differences in the Academic Adjustments of Preservice Teachers when Grouped According to Sex*

| **Academic Adjustments** | **Male** | **Female** | **T** | **df** | **p** |
|---|---|---|---|---|---|
| Synchronous online class | 3.96 (0.55) | 3.93 (0.65) | 0.30 | 213 | 0.77 |
| Remote Learning requirements | 3.95 (0.57) | 3.99 (0.59) | -0.41 | 213 | 0.68 |
| Remote independent learning | 3.85 (0.60) | 3.88 (0.61) | -0.31 | 213 | 0.76 |
| Technology for remote learning | 4.35 (0.61) | 4.27 (0.67) | 0.63 | 213 | 0.53 |
| Remote instructional assistance | 3.82 (0.62) | 3.75 (0.69) | 0.58 | 213 | 0.56 |
| **As a whole** | **3.99 (0.50)** | **3.97 (0.57)** | **0.20** | **213** | **0.84** |

*Note.* * = $\rho \leq 0.05$. Standard deviations appear in parentheses to the right of the means
*Source.* Data analysis result of the research

The results from the independent sample t-tests comparing the extent of academic adjustments among male and female preservice teachers, as presented in Table 7, indicate no significant differences between the two groups when all domains were considered ($t_{(df = 213)} = 3.99$, $p = 0.84$). Likewise, the t-test results did not show statistically significant differences between male and female preservice teachers' synchronous online class participation, remote learning requirements, remote independent learning, technology utilization for remote learning, and remote instructional assistance. This implies that male and female preservice

teachers' involvement and adaptability in synchronous and asynchronous learning activities were comparable. These findings are consistent with Smith et al. (2018) research showing no significant gender differences in the academic adjustments of preservice teachers in online learning environments. The absence of significant gender disparities in academic adjustments underscores the notion that both male and female preservice teachers are equally capable of adjusting to remote and synchronous learning modalities, regardless of the specific requirements and support mechanisms involved.

However, previous research has found that female students tend to be more active in online discussions (Im & Lee, 2003), while male students may have higher technical ICT capabilities and sustainability (Markauskaite, 2006). Female students also perceive technology as more challenging (Teo et al., 2015). The nature of preservice teachers' reflective thinking may also differ between synchronous and asynchronous online discussions. These findings suggest that factors such as technical capabilities and perceptions of technology may influence the experiences of male and female preservice teachers in online learning.

These results suggest a general parity in the academic adjustments made by male and female preservice teachers, indicating that both groups are adept at navigating the challenges and requirements of remote and synchronous learning environments. These findings highlight the resilience and adaptability of preservice teachers in embracing innovative educational practices, irrespective of gender.

**Table 8**

*Independent Sample T-test for Group Differences in the Social Adjustments of Preservice Teachers when Grouped According to Sex*

| **Social Adjustments** | **Male** | **Female** | **t** | **df** | **p** |
|---|---|---|---|---|---|
| Social interaction | 3.98 (0.72) | 3.96 (0.77) | 0.19 | 213 | 0.85 |
| Participation in curricular activities | 3.68 (0.74) | 3.52 (0.85) | 1.14 | 213 | 0.26 |
| Challenges in social engagement | 3.86 (0.67) | 3.76 (0.65) | 0.95 | 213 | 0.35 |
| Social support | 3.87 (0.66) | 3.92 (0.64) | -0.48 | 213 | 0.63 |
| **As a whole** | **3.85 (0.64** | **3.79 (0.64)** | **0.55** | **213** | **0.59** |

*Note.* * = $\rho \leq 0.05$. Standard deviations appear in parentheses to the right of the means
*Source.* Data analysis result of the research

The independent sample t-tests conducted to examine group differences in the extent of social adjustments among male and female preservice teachers, as summarized in Table 8, revealed no statistically significant differences across various social adjustment dimensions. This is supported by $(t_{(df = 213)} = 0.55, p = 0.59)$. When dimensions were considered individually, the t-test findings did not show any statistically significant differences between male and female preservice teachers regarding social interaction, involvement in extracurricular activities, difficulties with social engagement, and social support. It can be inferred that male and female preservice teachers' social adjustments were almost equal. Their interactions with others, participation in class activities, handling social problems, and finding social support in their learning environment were almost the same. These findings align with prior research by Chen et al. (2018), who also found no significant gender differences in the social adjustments of preservice teachers. The absence of significant disparities in social adjustments highlights that both male and female preservice teachers are equally adept at navigating social interactions,

participating in activities, managing social challenges, and accessing social support networks within their academic settings.

However, research has shown that, despite similar levels of social adjustment, there are some differences between male and female preservice teachers. Teo et al. (2015) found that female preservice teachers perceive technology as less easy to use, which may impact their professional work. This is further supported by Sak (2015), who found that female preservice teachers have lower overall self-efficacy, particularly in classroom management.

These results suggest a general parity in the social adjustments made by male and female preservice teachers, indicating groups' capability of effectively integrating their educational environment. Likewise, establishing supportive social relationships, irrespective of gender.

**Table 9**

*Independent Sample T-test for Group Differences in the Emotional Adjustments of Preservice Teachers when Grouped According to Sex*

| **Variables** | **Male** | **Female** | **t** | **df** | **p** |
|---|---|---|---|---|---|
| Emotions related to academic requirements | 3.50 (0.69) | 3.42 (0.80) | 0.62 | 213 | 0.54 |
| Emotions related to flexible learning | 3.59 (0.65) | 3.49 (0.80) | 0.74 | 213 | 0.46 |
| Emotions related to personal struggles | 3.67 (0.69) | 3.49 (0.87) | 1.89 | 213 | 0.06 |
| Emotions related to technology | 3.58 (0.74) | 3.45 (0.87) | 0.87 | 213 | 0.39 |
| **As a whole** | **3.58 (0.63)** | **3.44 (0.79)** | **1.11** | **213** | **0.27** |

*Note.* * = $\rho \leq 0.05$. Standard deviations appear in parentheses to the right of the means
*Source.* Data analysis result of the research

Table 9 examines group differences in emotional adjustments among male and female preservice teachers *($t_{(df = 213)} = 1.11$, $p = 0.27$).* The t-test results showed no statistically significant differences between male and female preservice teachers' emotions linked to academic requirements and emotions associated with flexible learning. This suggests that when adjusting to flexible learning environments and juggling academic responsibilities, both groups feel comparable levels of emotional adjustment. These results are consistent with studies by Smith and Brown (2020) and Johnson et al. (2019), which revealed no gender differences in preservice teachers' emotional responses to intellectual problems.

Nevertheless, when it comes to feelings associated with personal challenges, there is a discernible tendency toward significance *($t_{(df) = 213)} = 1.89$, $p = 0.06$).* Concerning overcoming personal obstacles, male preservice teachers reported higher mean scores for emotional adjustment than female preservice teachers. Even though this data fell short of statistical significance, it raises the possibility of a worthwhile investigation. Subsequent investigations may explore the elements influencing these gender disparities in emotional adjustment to personal challenges while undergoing teacher preparation. In this regard, Fischer et al. (2018) suggest that gender differences exist in emotional adjustment to personal challenges, with male preservice teachers reporting higher emotional adjustment scores. Emotional intelligence may influence these differences, with female teachers demonstrating higher interpersonal skills (Shehzad & Mahmood, 2013).

The t-test results indicate no differences in the emotions associated with technology between male and female preservice teachers, which aligns with previous research. Teo et al. (2015) found that while there were no gender differences in perceived usefulness and attitudes

toward technology, female preservice teachers had lower perceived ease of use scores. This suggests that both groups may experience similar emotional adjustment when incorporating technology into their teaching practices. Likewise, Garcia and Martinez (2021) observed no gender differences in preservice teachers' emotional responses to technology. However, Bauer (2000) highlighted a potential gender divide, with female preservice teachers perceiving themselves as less competent and experiencing more frustration with technology. This indicates a need for further exploration of the factors influencing the emotional adjustment of preservice teachers to technology.

## 5. Conclusions & recommendations

The study identifies positive trends in preservice teachers' adjustments to flexible instructional delivery, particularly in academic and technological proficiency. However, support in independent learning and instructional assistance is needed to improve adjustment in these areas. Social adjustments among preservice teachers demonstrate satisfactory outcomes, highlighting the importance of inclusive environments and active involvement in curriculum activities to foster social integration and cooperation.

Preservice teachers show moderate levels of emotional adjustment across various domains, with potential gender differences in emotional adjustment related to personal struggles. This underscores the importance of providing specialized emotional support and resources to help preservice teachers overcome obstacles and build resilience throughout their education program. Future research could explore this area further to understand better and address emotional adjustment needs.

This study should, therefore, emphasize the importance of comprehensive support systems to address preservice teachers' academic, social, and emotional needs. Continuous monitoring and evaluating their adjustments are crucial to identifying challenges and implementing proactive measures. Teacher training programs should prioritize fostering inclusive environments, improving support for independent learning, and offering targeted emotional support to better prepare preservice teachers for success in today's evolving educational landscape.

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