



The Examination of the Relationship Between Psychological Flexibility Level and Problem-Solving Skills of Students in Special Education Departments

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Abstract

The purpose of this study is to examine the relationship between psychological flexibility level and problem-solving skills among students in special education departments. The research group consists of 453 special education students, who reached through criterion sampling technique. Of these students, 325 (71.7%) are females and 128 (28.3%) are males. The research data were collected face-to-face using the scales. Participants volunteered to take part in the research. The research model of this study was the correlational survey model, which is one of the quantitative research methods. The Acceptance and Action Form II Scale was used as a data collection tool to measure psychological flexibility, the Adult Problem-Solving Skills Scale was used to measure problem-solving skills, and the Personal Information Form was used to determine the gender and class level of participants. For analyzing the data, descriptive statistic, t-test, ANOVA, Pearson Correlation Coefficient analysis, and Simple Linear Regression analysis were used. According to the findings of the study are; there is no significant difference in the problem-solving skills of special education department students according to their gender ($t_{451}=802$, $p>.05$). There is a significant difference in the problem-solving skills of special education department students according to their grade levels ($F_{3-449}=2.899$, $p<.05$). The scores of first-year students are statistically significantly higher than those of fourth-year students. A low-level, positive, and statistically significant relationship was found between the psychological flexibility level and problem-solving skills of special education department students ($r=.147$, $p<.01$). The regression analysis revealed that psychological flexibility level scores significantly predict problem-solving skills scores.

Keywords: special education, undergraduate students, quantitative research, correlational survey, psychological inflexibility

1. Introduction

In today's education systems, it is not considered sufficient to equip individuals with academic knowledge alone; developing life skills such as psychological resilience, adaptability and problem-solving skills is also of great importance (Durlak et al., 2011). In this context, psychological flexibility and problem-solving skills are among the personal and professional competencies expected of teacher candidates studying in the field of special education (Sarı et al., 2024). This is because the ability of teachers who will work with individuals with special needs to cope with the difficulties they may encounter in their professional lives is a decisive factor in terms of both their own mental well-being and the quality of education they will provide to their students (Hastings & Brown, 2002).

In this regard, the main objective of this study is to examine the relationship between the psychological flexibility levels and problem-solving skills of students enrolled in special education programmes. Psychological flexibility is the ability to accept one's internal experiences (such as thoughts, feelings, memories, and physical sensations) without suppressing or avoiding them, and to act in a way that is consistent with one's values and effective (Hayes et al., 2006). In other words, when faced with difficulties or stressful situations, an individual can respond in a flexible and conscious manner that is appropriate to environmental demands, without becoming stuck in rigid thought patterns. This trait enhances both an individual's mental resilience and quality of life (Kashdan & Rottenberg, 2010). In particular, it is critically important for teacher candidates who will work in the field of special education to remain flexible and solution-oriented in the face of complex situations they may encounter in both their personal and professional lives, both for the development of students and for the healthy functioning of the educational environment (Hayes et al., 2012; Jennings & Greenberg, 2009). The literature indicates that psychological flexibility is a protective factor in coping with stress and improving an individual's quality of life, while problem-solving skills contribute to an effective teaching process as a reflection of cognitive competence (Kashdan & Rottenberg, 2010; D'Zurilla et al., 2015). In this context, it is anticipated that the findings will contribute to supporting the professional competence of special education teacher candidates and providing data for teacher training programmes.

Problem-solving skills are a complex cognitive and behavioural process that involves the ability to identify problems encountered by individuals, analyse these problems, generate alternative solutions, and apply the most appropriate solution strategy (D'Zurilla et al., 2015). These skills are particularly critical in the teaching profession because effective problem-solving approaches enable teachers to respond quickly and appropriately when faced with various challenges such as classroom issues, student behaviour, pedagogical incompatibilities, or occupational stress (Mustafa et al., 2024). Furthermore, a systematic review shows that interventions focusing on problem-solving strategies for teacher candidates significantly improve their skills in dealing with complex situations they may encounter in the classroom (Ajani, 2024). These competencies enable teachers to develop more flexible, creative, and solution-oriented approaches, thereby significantly improving the quality of the educational process.

In this regard, the main objective of this study is to examine the relationship between the psychological flexibility levels and problem-solving skills of students enrolled in special education programmes. In particular, it is critically important for teacher candidates who will work in the field of special education to remain flexible and solution-oriented in the face of complex situations they may encounter in both their personal and professional lives, both for the development of students and for the healthy functioning of the educational environment (Hayes et al., 2012; Jennings & Greenberg, 2009). The literature indicates that psychological

flexibility is a protective factor in coping with stress and improving an individual's quality of life, while problem-solving skills contribute to an effective teaching process as a reflection of cognitive competence (Kashdan & Rottenberg, 2010; D'Zurilla et al., 2015). In this context, it is anticipated that the findings will contribute to supporting the professional competence of special education teacher candidates and providing data for teacher training programmes. A review of the literature reveals that studies have examined the effects of variables such as emotional regulation difficulties, psychological resilience (Traş et al., 2025) and self-understanding (Koçak et al., 2023) on teacher candidates specializing in education.

This study aims to emphasise the importance of these two variables in teacher training by revealing the strength and direction of the relationship between special education teacher candidates' psychological flexibility levels and their problem-solving skills. This study aims to emphasise the importance of these two variables in teacher training by revealing the strength and direction of the relationship between special education teacher candidates' psychological flexibility levels and their problem-solving skills. Additionally, this study focuses on a topic that has been addressed in only a few studies; it is specifically conducted with teacher candidates studying special education and therefore aims to fill a gap in the literature. While most existing studies focus on general teacher candidates or different student groups, this research makes an important contribution by offering unique data on the developmental characteristics and professional requirements of special educational needs and disability (SEND) teacher candidates.

2. Method

Research Model: The current study has a quantitative research design. We employed correlational survey model as the study aims at identifying the presence and degree of the relation between two variables (Karasar, 2005). In this research, quantitative research methods were preferred to examine the relationship between two variables.

Study Group: The study group of the research consists of 453 special education teacher candidates, 325 of whom were women (71.7%), and 128 of whom were men (28.3%), all of whom we reached through convenient sampling method. The age range of the research group was between the ages of 18-30 ($\bar{x}$ =22.18, SD =3.44). Participants were selected from students enrolled on special educational needs teacher training programmes at various Turkish universities in the spring of 2025, who had voluntarily agreed to participate in the study. Participants were included in the sample group if they were studying in the field of special education and were active students at the time the data was collected. No exclusion criteria were applied in the study.

Convenience sampling is a practical method that allows researchers to collect data from accessible individuals. In this study, this method was chosen to obtain a broad sample and carry out the data collection process quickly and effectively. Due to limited face-to-face access at universities in the post-pandemic period, data was collected via online forms. This method enabled a wide range of participants from different universities to be reached and a dataset to be created that could reveal general trends about special education teacher candidates.

Special education teacher candidates may encounter intense and multifaceted situations in their professional lives that are both emotional and cognitive in nature. Therefore, it is important to examine individual competencies such as psychological flexibility and problem-solving in relation to teacher candidates in this field. Unlike previous studies which have generally focused on teacher candidates in general, this research aims to address an important gap in literature by considering the specific characteristics of the special education field.

Data Collection Tools

The Acceptance and Action Form II Scale: It was adapted into Turkish culture by Yavuz et al., (2016). The scale consists of 7 items. It is a 7-point Likert type. It is in the dimension of scale flexibility. Cronbach alpha coefficient of the scale was calculated to be .84. In the current study, we found out that Cronbach alpha was .88.

Adult Problem-Solving Skills Scale: It was developed for Turkish culture by Yaman and Dede (2008). Higher scores on the scale indicate that individuals have strong problem-solving skills. Cronbach alpha coefficient of the scale was calculated to be .88. In the current study, we found out that Cronbach alpha was .95

Personal Information Form: We created a personal information form to gather demographic information about the special education teacher candidates such as age and gender.

Data Collection: We contacted the participants face-to-face to gather data. We informed the participants of the principals about confidentiality and volunteer participation. The volunteer participants responded to the items in the scales. It took participants around 25 minutes to respond to the items in the scales.

Data Analysis: We conducted descriptive statistics, independent sample t-test, ANOVA, Pearson Product-Moment Correlation Coefficients and simple linear regression analysis to get information about the scales and participants.

3. Finding

The findings obtained from the research are presented below in tables.

Table 1: Descriptive Statistics Regarding the Variables

Scale	N	$\bar{x}$	ss	Skewness	Kurtosis	α
Psychological Flexibility	453	32.88	.43	-.412	-.375	.88
Problem-Solving Skills	453	67.99	.56	.016	-.586	.95

Psychological flexibility and problem-solving skills varied between ± 1.0 , which meant that they had a normal distribution (Hair et al., 2010). We calculated Cronbach alpha coefficients (α) to investigate the reliability of the scales. We concluded that the scale scores of The Acceptance and Action Form II Scale and Adult Problem-Solving Skills Scale all had Cronbach's alpha coefficient (α) values equal to or over .70, which meant they were all reliable (Büyüköztürk, 2018).

Table 2: t-test Results Regarding the Problem-Solving Skills Scores of Students in Special Education Departments According to Their Gender

Scale	Gender	N	$\bar{x}$	ss	t	p
Problem-Solving Skills	Female	325	68.28	.66	802	.423
	Male	128	67.27	1.07		

As is seen in Table 2, the problem-solving skills of students in special education departments needs do not differ significantly according to their being a gender ($t_{451}=.860$, $p>.05$).

Table 3: ANOVA Results Regarding the Problem-Solving Skills Scores of Students in Special Education Departments According to Their Grade Levels

Scale	Grade Level	N	$\bar{x}$	ss	F	p	Significant Difference (Tukey)
Problem-Solving Skills	first-year students	183	69.96	.96	2.899	.035*	1>4
	second-year students	97	67.25	1.12			
	third-year students	97	66.48	1.04			
	fourth-year students	76	66.13	1.40			

* $p<.05$, 1= first-year students, 2= second-year students, 3= third-year students, 4= fourth-year students

As is seen in Table 3, there is a significant difference in the problem-solving skills of special education department students according to their grade levels ($F_{3-449}=2.899$, $p<.05$). The scores of first-year students ($\bar{x}=69.96$) are statistically significantly higher than those of fourth-year students ($\bar{x}=66.13$).

Table 4: The Results of Pearson Correlation Among Variables

	Problem-Solving Skills
Psychological Flexibility	.147**

** $p<.01$

As is seen in Table 4, a low-level, positive, and statistically significant relationship was found between the psychological flexibility level and problem-solving skills of special education department students ($r=.147$, $p<.01$).

Table 5: Simple Linear Regression Results Regarding the Prediction of Problem-Solving Skills Scores

Predicted Variable	Predictive Variable	B	Standard Error	β	t	p
Problem-Solving Skills	Fixed	2.073		29.761	29.761	.000**
	Psychological Flexibility	.161	.147	3.152	3.152	.002*

* $p<.05$, ** $p<.01$

As is seen in Table 5, the regression analysis revealed that psychological flexibility level scores significantly predict problem-solving skills scores ($F_{1-451}=9.934$, $R=.14$, $R^2=.02$, $p<.05$). Psychological flexibility scores accounted for 2% of the total variance on problem-solving skills ($R^2=.02$).

4. Discussion

This study found that the problem-solving skills of special education students do not vary according to gender. This finding is similar to some previous studies. For example, studies examining problem-solving skills according to gender and field of study (Çetinkale, 2006; Çam & Tümkaya, 2006) have shown that gender has no significant effect on problem-solving skills. Tavlı (2007) emphasised in his study that gender does not create a significant difference in students' problem-solving success. This suggests that problem-solving skills may be more closely related to individuals' cognitive processes, educational experiences, and personal strategies than to their gender. Therefore, it is important that educational programmes in this field are designed in such a way that all individuals can develop these skills, regardless of gender.

The results of this study show that problem-solving skills of students in special education vary according to grade levels, with first-grade students scoring significantly higher than fourth-grade students. The results of this study show that the problem-solving skills of special education students vary according to their grade level; in particular, first-year students perform better than fourth-year students. This contradicts the widely accepted assumption in the literature that 'cognitive skills improve as the school year progresses.' On the contrary, this finding is consistent with academic burnout, which can occur in later years of academic life; factors such as academic workload, internships, and thesis responsibilities are thought to negatively affect students' motivation, attention, and cognitive performance (Jacobs & Dodd, 2003). Indeed, empirical studies conducted in university settings have shown that motivation declines and concentration is lost, particularly during the transition to the third and fourth years, and that this situation has negative effects on cognitive processes such as problem solving (Credé & Niehorster, 2012). While first-year students are thought to have a more advantageous start in terms of cognitive performance due to their academic enthusiasm, curiosity, and active learning approaches, increasing academic stress in upper grades may weaken this advantage. In this context, the findings of the study indicate that the development of problem-solving skills in special education departments should be systematically supported not only in the initial years but throughout the entire learning process.

The results of this study revealed a low-level, positive, and statistically significant relationship between the psychological flexibility levels and problem-solving skills of special education students. It was found that psychological flexibility scores significantly predicted problem-solving skills scores. It is widely accepted in the literature that psychological flexibility enables individuals to resist stress, increase cognitive flexibility, and thus support solution-focused thinking capacity (O'Connor & Bond, 2017; Hailikari, et al., 2022). Indeed, individuals with high levels of psychological flexibility are able to develop more creative problem-solving strategies in complex and uncertain situations; this is particularly important for students who will be working in the field of special education. Additionally, psychological flexibility scores have been found to significantly predict problem-solving skills. Hailikari and colleagues' (2022) study confirms that psychological flexibility is directly related to academic achievement expectations and positive emotions and indirectly affects performance. These results suggest that focusing on increasing psychological flexibility in interventions for special education students may be effective in developing their problem-solving competencies. Mindfulness-based stress management programmes and Acceptance and Commitment Therapy (ACT)-based applications can strengthen both the emotional resilience and cognitive abilities of these students.

In conclusion, when the findings obtained in this study are evaluated in general, it is seen that there is no significant difference in the problem-solving skills of special education

students according to gender, but there is a significant difference according to class level. It was found that first-year students had higher problem-solving scores than fourth-year students. However, a low but positive and significant relationship was found between students' psychological flexibility levels and their problem-solving skills. Furthermore, it was determined that psychological flexibility levels significantly predict problem-solving skills. These findings suggest that psychological flexibility may play an important role in the professional and personal development of teacher candidates, particularly those studying in the field of special education, and that this construct should be considered a supportive element in problem-solving processes.

5. Conclusion

The results obtained from this study are presented below in bullet points.

1. It was found that there was no significant difference in problem-solving skills between male and female students in special education departments.
2. It was found that the problem-solving skills of students in the special education department differed according to their grade levels, with first-grade students scoring significantly higher than fourth-grade students.
3. A low-level, positive, and statistically significant relationship was found between the psychological flexibility levels and problem-solving skills of special education students.
4. It was found that psychological flexibility scores significantly predicted problem-solving skills scores.

6. Recommendations

The statements based on the results obtained in the study are presented below in bullet points.

1. It is recommended that training and seminars aimed at developing problem-solving skills be offered equally to all students, regardless of gender. However, it would be useful to conduct more in-depth analyses in future studies that examine the indirect effects of gender (e.g., through variables such as self-confidence and anxiety levels).
2. It has been found that, contrary to expectations, students' problem-solving skills decline as they progress through the grades. Therefore, it is recommended that more emphasis be placed on problem-solving-oriented learning activities and practical work in the later years of the teaching process.
3. It is recommended that comprehensive intervention programmes be developed to improve both the psychological flexibility and problem-solving abilities of teacher candidates. Integrating stress management, value-based living, and mindfulness-based practices into teacher training programmes may be effective in supporting these skills.
4. It is recommended that teacher training programmes include practices aimed at increasing psychological flexibility (e.g. group work based on acceptance and commitment therapy, mindfulness training, etc.). In addition, it is recommended that the impact of psychological flexibility on different individual and professional skills be examined through advanced research.
5. Activities based on guidance should be integrated into the teaching process to help teacher candidates develop their individual awareness and self-assessment skills. Problem-solving skills and psychological flexibility are closely related to an individual's recognition of their strengths and areas for improvement. Therefore, the curriculum should include

structured feedback sessions that incorporate emotional awareness exercises and enable teacher candidates to engage in regular self-assessment. Furthermore, these processes should be designed so that they can be monitored and supported by teaching staff and guidance units.

6. To address the challenges faced by teacher candidates from different cultures, comparative case studies and intercultural education modules should be developed. As educational environments become more diverse, cultural awareness is emerging as an essential teacher competency. It is therefore recommended that content be developed to enable teacher candidates to learn about educational practices in different countries and compare problem-solving strategies within a cultural context. Lesson applications examining international case studies can support the development of teacher candidates' empathy skills and flexible thinking.

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