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The Impact of Philosophical Mindset and Mindfulness on Information Processing and Problem-Solving: A Comparative Study of Mathematics Teachers in Gifted and Regular Schools

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Abstract. Philosophical mindset and mindfulness are two key factors that determine information processing styles and play a role in the problem-solving skills of mathematics teachers. This study aims to compare and analyze the relationship between philosophical mindset, mindfulness, and information processing styles, with an emphasis on problem-solving among mathematics teachers in both gifted and regular schools. The present study, in terms of method and data collection, is a cross-sectional survey. The statistical population includes mathematics teachers from both gifted and regular schools. The sample size was estimated at 100 individuals, and sampling was conducted using a quasi-cluster method. To test the hypotheses and compare the populations, structural equation modeling and an independent t-test were employed using AMOS and SPSS software. For data collection, Smith's Philosophical Mindset Questionnaire (1965), the Five Facet Mindfulness Questionnaire by Baer et al. (2006), and the Information Processing Styles Questionnaire by Pacini and Epstein (1999) were utilized. The reliability of the questionnaires was assessed using Cronbach's alpha. The results indicated that both philosophical mindset and mindfulness significantly influence information processing styles. Notably, while the philosophical mindset and mindfulness of mathematics teachers in gifted schools were higher compared to those in regular schools, these differences were not statistically significant. These findings underscore the critical role of philosophical mindset and mindfulness in shaping effective information processing and problem-solving abilities among mathematics teachers, irrespective of the type of school they are in.

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1. Introduction

The inherent duty of education encompasses both the design of problems and the preparation for problem-solving. Life itself is a series of problems, and the educational system is fundamental in nurturing learners' abilities to find effective solutions to various life challenges. If education does not adopt a problem-oriented approach to curriculum planning, teaching and learning activities will be ineffective [1]. Curriculum developers in the third millennium need to reconsider and revise their approaches. Curricula should be

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designed to build and enhance the necessary competencies that graduates need to solve problems in various personal and professional situations [2]. Analysts studying the history of curriculum development have emphasized that the degree of attention paid to diverse information sources—learners, society, and established academic subjects—at different times is the most crucial factor in these changes. Therefore, schools should aim to bridge the gap between themselves and the broader community, breaking down the barriers that separate schools from society. Teaching problem-solving to learners, especially in mathematics, is one of the most important educational goals [3].

Despite these recognized needs, existing research reveals critical gaps. There is insufficient focus on how teachers' philosophical mindsets and mindfulness influence their problem-solving approaches and information processing styles, particularly within the context of mathematics education. Existing studies have highlighted the importance of these factors, but a comprehensive analysis comparing their effects in different educational settings—regular versus gifted schools—remains underexplored. This study addresses these gaps by examining how philosophical mindset and mindfulness relate to problem-solving and information processing styles among mathematics teachers, offering a novel perspective in this domain.

Experts in problem-based education emphasize the importance of teachers' philosophical mindsets and mindfulness. A philosophical mindset provides teachers with the knowledge and insight needed not only to address scientific issues effectively but also to apply educational principles when tackling everyday educational challenges appropriately [4]. This mindset equips teachers with the ability to self-regulate and guide themselves in problem-solving, as logical thinking is a product of having a philosophical mindset [5]. Teachers must facilitate the most effective learning experiences in the classroom. It is clear that there is no universal method for teaching and learning, and the ability to think critically and skillfully has long been a focal point of modern education. In other words, possessing a philosophical mindset empowers teachers to self-regulate and guide themselves in addressing issues, as logical thinking stems from a philosophical mindset. This mindset enables teachers to tackle both scientific and everyday educational problems effectively. In addition to a philosophical mindset, teachers must also possess a high level of mindfulness. Teachers who are highly mindful prefer to engage in relatively challenging and risky tasks where success is possible and to undertake assignments that allow for performance comparison with others. They demonstrate perseverance in their work and seek out more challenging tasks once they have succeeded. They enjoy working in situations where they have significant control over the outcomes. Therefore, mindfulness plays a crucial role in helping teachers solve problems and is one of the main factors influencing teachers' problem-solving abilities [6].

Given that mindfulness involves non-judgment, non-reactivity, and open feedback to emotions, experiences, and thoughts, it helps teachers avoid self-judgment regarding their educational abilities, accept their feelings, and act without fear of consequences. This enables teachers to focus on themselves and not tie their self-acceptance to achieving certain grades or specific performance outcomes in their educational roles. As a result, they are less likely to engage in unproductive behaviors in the educational and academic domains. Studies indicate that mindfulness has a negative relationship with negative academic behaviors, such as procrastination [7]. In teaching mathematics, instruction should begin with a problem. Ideally, this problem should be a contemporary issue that students can relate to from their own lives. The path of teaching mathematics should start with problem formulation and end with learning. This golden principle applies regardless of the specific content being taught [8]. To achieve these objectives, there is an increasing need to enhance the value, competence, and credibility of the mathematics curriculum.The importance and role of mathematics can be briefly described through several aspects, such as uncovering hidden patterns in the environment to better understand the world, advancing

other sciences, achieving optimal solutions to real-life problems, and developing abstract thinking, hypothesis formation, logical reasoning, and deductive abilities [9]. Problem-solving is a crucial component of mathematics education. In problem-solving programs, various approaches exist for integrating mathematics lessons, including teaching problem-solving, teaching mathematics for problem-solving, and teaching through problem-solving. Selecting an appropriate method in this area requires the development of a suitable model for planning mathematics lessons [10]. A teacher, in guiding students to solve problems, does not offer direct instruction but rather plays a more skillful and precise role. The primary educational responsibility of a teacher in a problem-based curriculum is to ensure that students make satisfactory progress toward understanding and solving problems, especially in mathematics [11].

Building on the discussion of experiential and cognitive capabilities, as well as the complexities of problem-solving in mathematics teaching, this study seeks to examine and compare the abilities of mathematics teachers in two distinct teaching environments—regular and gifted schools—from a philosophical-cognitive-processing perspective. Fostering mental engagement in students and emphasizing mathematical concepts necessitate a focused effort to enhance teachers' skills. This research takes a novel approach, differing from previous studies by offering a fresh perspective on the issue. Several recent studies have also highlighted the problem-based nature of Iran's educational system and learning processes in schools [1], [12], and [13].

Orosz et al.[14] examined the relationship between growth mindset and mindfulness in the context of learning from criticism. Their study revealed that while a growth mindset encourages persistence, it can also lead to over-engagement with criticism, which might hinder learning. In contrast, mindfulness fosters more adaptive responses by promoting constructive engagement with criticism while reducing harmful over-engagement. The findings suggest that mindfulness can serve as a critical balancing factor for those with a growth mindset, ensuring that engagement with criticism remains constructive and beneficial.

Chiesa and Serretti [15] conducted a systematic review exploring the cognitive benefits of mindfulness training. Their findings suggest that mindfulness can enhance various cognitive functions, including attention, memory, and executive functioning. The review highlights how mindfulness may improve problem-solving abilities by promoting greater focus and emotional regulation. These cognitive improvements are particularly relevant in educational contexts, where mindfulness can help teachers maintain attentiveness and reduce stress, thereby enhancing their teaching efficacy and problem-solving skills in challenging situations.

One of the subjects that can be further examined in this context is mathematics. This subject has always been associated with significant challenges for both students (learners) and teachers (educators) [16–19]. Nevertheless, an independent study on the philosophical mindset and mindfulness of teachers specifically in the context of mathematics education has not yet been conducted in the country. In addition to the existing research gap, another critical issue is that teachers, despite facing numerous challenges in teaching mathematics, appear to encounter more issues in regular schools compared to gifted schools. Teachers in regular schools struggle with selecting effective methods for teaching mathematics. In response to these issues, this study aims to address the key question: How do philosophical mindset and mindfulness relate to information processing styles with an emphasis on problem-solving among mathematics teachers in gifted and regular schools?

2. Theoretical foundations and literature review

2.1. *Philosophical mindset*

Based on studies on the philosophical mindset of managers and teachers, notably the

pioneering work by Smith [20], individuals with a high philosophical mindset possess characteristics that can be grouped into three dimensions: comprehensiveness, depth, and flexibility. These individuals consistently strive to broaden their thinking, view issues in relation to a broad context and long-term goals, question self-evident matters, and increase their chances of moving beyond ignorant biases, personal prejudices, and stereotypical distortions. Additionally, they exhibit flexibility, which is associated with innovation, open-mindedness, and creativity, and they examine problems from various angles and perspectives. Therefore, possessing a philosophical mindset can influence all aspects of an individual's personality and behavior [21].

A philosophical mindset is defined as the cognitive abilities and characteristics that assist individuals in sound thinking and habituate them to make accurate judgments. A philosophical mindset is characterized by three dimensions: comprehensiveness, flexibility, and depth. It provides individuals with insight and knowledge, enabling them to remain free from narrow-mindedness, egocentrism, and one-sided perspectives when facing issues. Additionally, it helps individuals make logical decisions based on a thorough understanding and awareness of matters [22].

While insight, vision, and values are relevant in all organizations and for all managers, they are particularly critical in educational organizations and essential for empowering teachers in problem-solving. Therefore, it can be concluded that the philosophical mindset of teachers is crucial for effective problem-solving. Mindfulness is defined as paying attention in a specific way, on purpose, in the present moment, and without judgment. It is a state of inner peace that can be achieved through focusing on the breath, proper meditation, and clearing the mind of external distractions [23]. Mindfulness enables individuals to form a different relationship with internal feelings and external events by fostering moment-to-moment awareness and adopting a behaviorally responsible orientation rather than automatic reactivity. It effectively controls emotional responses by utilizing higher mental functions such as attention, awareness, and a compassionate attitude, while also moderating emotional reactions through inhibition of the limbic system. Mindfulness techniques are effective in increasing muscle relaxation and reducing worry, stress, and anxiety. Although the primary goal of mindfulness is not relaxation, non-judgmental observation of negative internal events or physiological arousal activates areas of the brain associated with positive emotions and beneficial effects on body safety responses [24].

The construct of mindfulness appears to help alleviate emotional fatigue associated with academic enthusiasm. Mindfulness is understood as both a state within a given context and as a trait, which reflects a consistent tendency toward deliberate, aware thinking and behavior. Individuals who possess the trait of mindfulness demonstrate openness to experience, a willingness to engage with challenging topics, continuous re-evaluation of their surroundings, and responsive behavior. This reduces cognitive dissonance and enhances stress management [25]. Therefore, it seems that the construct of mindfulness may also influence information processing styles, particularly in problem-solving among teachers.

2.2. *Problem solving for teachers*

Problem-Based Curriculum is a teaching method in which students take responsibility for their own learning. This type of curriculum represents a research-oriented approach to learning. It begins with students encountering a challenging situation that stimulates their thinking [26]. A fundamental component of a problem-based curriculum is content presented in the form of problems within the context of real-world issues. Collaboration is a key feature of problem-based learning. Students work together in groups to solve problems, often in small groups. Students need to recognize what they know and, more

importantly, identify what they do not know in order to solve the problem [27]. Therefore, the main task for learners is to identify the additional information needed to solve the problem. They must determine where to find this information and combine both new and existing knowledge to address the issue [28].

The use of innovative teaching methods, particularly in elementary mathematics, is of great importance. Contemporary perspectives on classroom assessment focus on employing a wide range of strategies, tools, and methods to provide multiple opportunities for creativity and enhanced student learning. Emphasis is placed on formative and continuous feedback and on student participation in assessment processes [16].

Mathematics is a subject where attention plays a crucial role in learning. Every student needs to understand and grasp this subject, often referred to as the "mother of sciences." However, many students remain indifferent or uninterested in mathematics for various reasons, despite its essential role in human development and progress [29]. Many dedicated, successful, and enthusiastic educators are continually seeking new methods, fresh ideas, and solutions to make learning mathematics more engaging and effective for students. The challenge educators face is how to implement new theories and educational ideas. Thus, having a practical and applicable model for innovative teaching methods in mathematics is crucial [30].

Akbarzadeh et al. [31] examined the relationship between philosophical mindset and the professional maturity of social studies teachers with their teaching styles in middle schools. The study found that there is a relationship between philosophical mindset and specialized or expert style, personal or individual style, facilitating style, and interactive or communicative style of teachers. Esmaeili [32] explored the relationship between philosophical mindset and self-regulated learning in students, with the mediating role of information technology utilization. The results indicated that there is a relationship between philosophical mindset and self-regulated learning, with information technology utilization playing a mediating role.

Karimi et al. [33] investigated the relationship between mindfulness and unproductive academic behaviors, with academic optimism serving as a mediating role. The study found that mindfulness can play a significant role in influencing unproductive academic behaviors, with this relationship being inverse.

Karimi et al. [34] explored the role of mindfulness and emotional regulation in predicting academic motivation among students. The results indicated a significant relationship between mindfulness (specifically, description and non-reactivity) and emotional regulation with academic motivation.

Reviewing existing studies reveals that most domestic research has been theoretical, predominantly focusing on the significance of problem-based curriculum planning. Consequently, there is a compelling need for research that addresses the challenges identified in previous studies and explores the comparative and relational aspects of philosophical mindset, mindfulness, and information processing styles, particularly concerning problem-solving among mathematics teachers in both gifted and regular schools.

For the present study, two main variables are identified in the conceptual model: dependent and independent variables. The dependent variable is the focus of the research, which aims to examine, describe, and predict changes in this variable. Thus, the dependent variable in this study is "information processing styles with an emphasis on problem-solving".

The independent variables are those that the researcher measures, alters, or selects to determine their effect or relationship with the dependent variable. The independent variables in this study are "philosophical mindset" and "mindfulness" of mathematics teachers. This study is applied research aimed at exploring and analysing the comparative

relationships between philosophical mindset, mindfulness, and information processing styles, with a specific focus on problem-solving among mathematics teachers in both gifted and regular schools.

In terms of methodology and data collection period, it is a non-experimental study conducted using a cross-sectional survey approach.

The statistical population of this study includes all girls' and boys' regular and gifted schools in selected districts of Tehran's education system for the 2020-2021 academic year. Given the large size of the population and the existing constraints, between 70 and 100 male and female mathematics teachers employed in regular and gifted schools during the 2020-2021 academic year were randomly selected. The sampling method used in this study is a quasi-cluster sampling approach.

The data collection tools for this study include three standardized questionnaires. This research aims to norm a combined scale based on established tools for measuring and gathering data on philosophical mindset, mindfulness, and information processing styles. Consequently, a new instrument was designed and standardized based on the following two standard tools, and this newly developed scale was distributed among the sample of teachers in the study.

The Philosophical Mindset Questionnaire, developed by Smith [20], is a 42-item self-report scale. The components of this questionnaire include comprehensiveness, depth, and flexibility. It uses a 5-point Likert scale, ranging from 1 (Never) to 5 (Always), to indicate the level of agreement or disagreement with each statement. The total score for each subscale is combined to provide an overall score, with higher scores indicating a greater philosophical mindset. The Cronbach's alpha for Smith's questionnaire was 0.86, and it was estimated to be 0.75 in this study, indicating acceptable reliability for the questionnaire.

The Five Facet Mindfulness Questionnaire was developed by Baer et al. [35]. This tool is a 39-item self-report scale. The components of this questionnaire include Observing, Describing, Acting with Awareness, Non-Judging, and Non-Reactivity. Respondents are required to indicate their level of agreement or disagreement with each statement on a 5-point Likert scale, ranging from 1 (Never) to 5 (Always). The total score range on this scale is 39 to 195. A higher score reflects greater mindfulness. Cronbach's alpha for Baer et al.'s questionnaire was 0.83, and in this study, it was estimated to be 0.72, indicating acceptable reliability for the questionnaire.

The information processing styles questionnaire was developed by Pacini and Epstein [36]. This is a 22-item self-report scale. The components of this questionnaire include Intuition (items 1 to 11), Rationality (items 12 to 22), and Descriptive Questions on Mathematical Problem Solving (items 23 to 27). Respondents are required to indicate their level of agreement or disagreement with each statement on a 5-point Likert scale, ranging from 1 (Never) to 5 (Always). The total score for each subscale provides an overall score, indicating that higher scores reflect a greater capability in the respective information processing style. Cronbach's alpha for the Passini and Epstein questionnaire was 0.81, and in this study, it was estimated to be 0.77, indicating acceptable reliability for the questionnaire. To analyze the collected data, Structural Equation Modeling (SEM) was utilized using AMOS 22 software. Additionally, to compare regular and gifted schools, inferential statistical tests were conducted using SPSS 20 software.

3. Research Findings

In this study, data was collected from 100 mathematics teachers, including 61 from regular schools and 39 from gifted schools. Of the participants, 55 were male and 45 were female. Regarding educational background, 48 teachers held a bachelor's degree, while 52 had advanced degrees. In terms of age, 19 teachers were under 30 years old, 36 were between 30 and 40 years old, 37 were between 40 and 50 years old, and 8 were over 50 years old.

The demographic characteristics of the mathematics teachers are detailed in Table 1, with Figure 2 visually representing the data from Table 1.

The quasi-cluster sampling method was employed to ensure a balanced representation of mathematics teachers across gifted and regular schools. This method was chosen to capture potential differences in educational environments that might influence the study's key variables, particularly in areas such as philosophical mindset and problem-solving approaches. The sample size of 100 individuals was determined based on a power analysis, ensuring the study could detect medium-sized effects in structural equation modeling (SEM) with adequate precision.

SEM was selected as the primary statistical method due to its suitability for examining complex, multivariate relationships between philosophical mindset, mindfulness, and information processing styles. This method allows for the modeling of latent constructs and the analysis of multiple dependent relationships simultaneously, which is essential for exploring the intricate interplay between cognitive and psychological factors. By employing SEM, the study was able to assess both direct and indirect effects, offering a comprehensive understanding of how philosophical mindset and mindfulness influence problem-solving among mathematics teachers in different educational contexts. Additionally, an independent t-test was used to compare the populations, further supporting the robustness of the statistical analysis.

Table 1. Demographic characteristics of mathematics teachers.

Demographic Characteristics		Frequency	Percentage
Gender	Male	55	55%
	Female	45	45%
age	Under 30 years	19	19%
	31 to 40 years	36	36%
	41 to 50 years	37	37%
	Over 50 years	8	8%
Education	Bachelor's Degree	48	48%
	Postgraduate Education	61	61%
Type of School	Regular	39	39%
	Gifted	52	52%
Total		100	100%

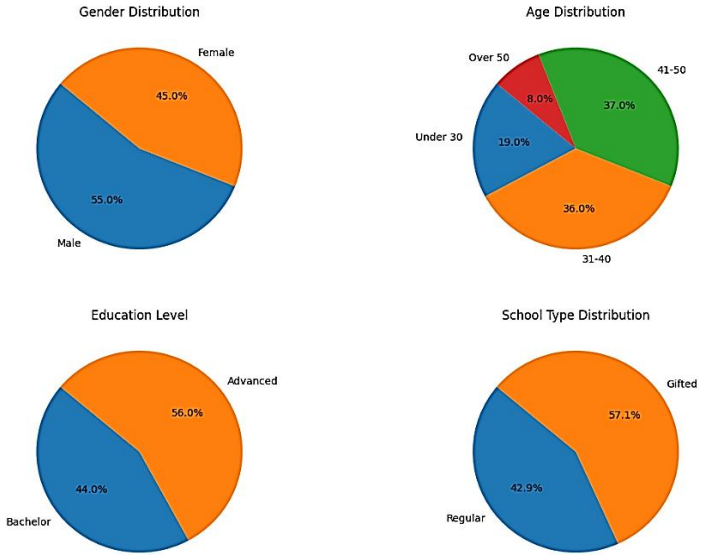

Figure 1. Demographic characteristics of mathematics teachers.

To select the appropriate statistical method, the normality of the data was assessed. For this purpose, the Kolmogorov-Smirnov test was applied. This test was conducted at a 95% confidence level, meaning that if the p-value is greater than the significance level, the data are considered to be normally distributed. The results of the Kolmogorov-Smirnov test are presented in Table 2.

Table 2. Normality of data using the kolmogorov-smirnov test.

Variables	Kolmogorov-Smirnov Test Significance Level	Test Result
Philosophical mindset	0.09	Normal data distribution
Mindfulness	0.16	Normal data distribution
Information processing styles	0.08	Normal data distribution

Based on the results of the above test and the significance levels of all variables, which are reported to be greater than 0.05, it can be inferred that all variables follow a normal distribution. Consequently, parametric tests were employed in this study. The relationships between the main constructs of the model were examined using structural equation modeling with AMOS software. The results of the structural equation modeling are presented in Figure 2.

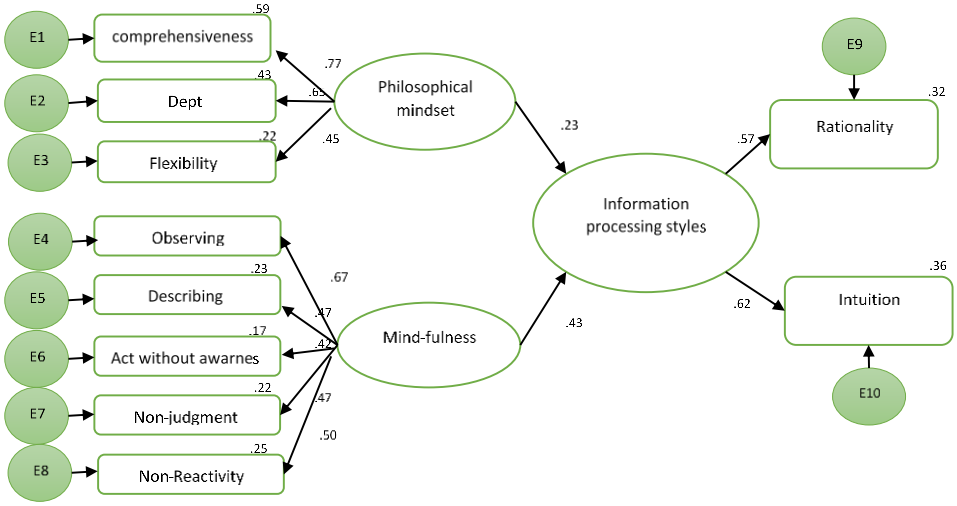

Figure 2. Conceptual model of the research.

Table 3 - Summary of structural equation modeling results for construct relationships.

Constructs	**Path Ccoefficient**	**T-Statistic**	**Significance level**	**Result**
Philosophical Mindset → Information Processing Styles	0.23	2.32	0.003	Positive and Significant
Mindfulness → Information Processing Styles	0.43	5.62	0.001	Positive and Significant

The analysis revealed a path coefficient of 0.23 for the relationship between philosophical. mindset and information processing styles, with a t-value of 2.32, which exceeds the critical value of 1.96. Additionally, the significance level was found to be 0.003, which is below the 5% significance threshold. This indicates a positive and statistically significant relationship between philosophical mindset and information processing styles. Similarly, the path coefficient for the relationship between mindfulness and information processing styles was 0.43, with a t-value of 5.62, surpassing the critical value of 1.96. The significance level was 0.001, also below the 5% threshold. Therefore, mindfulness has a positive and significant impact on information processing styles.

To investigate potential differences between teachers in regular and gifted schools, an independent t-test was conducted. A summary of the results from the independent t-test is provided in Table 4.

Table 4. Summary of independent T-test results.

Constructs	School Teachers	Mean	Standard Deviation	Standard Error
Philosophical Mindset	Mathematics teachers in regular schools	3.75	0.54	0.06
	Mathematics teachers in gifted schools	3.76	0.57	0.09
Mindfulness	Mathematics teachers in regular schools	3.40	0.64	0.08
	Mathematics teachers in gifted schools	3.41	0.71	0.011
Information Processing Styles	Mathematics teachers in regular schools	3.40	0.64	0.08
	Mathematics teachers in gifted schools	3.41	0.71	0.011

According to the results presented in Table 4, the independent t-test revealed that the significance level for the variable of philosophical mindset was 0.99. Since this value is greater than the critical significance level of 0.05, it indicates that there is no statistically significant difference in the mean scores of philosophical mindsets between mathematics teachers in regular schools and those in gifted schools. The mean difference of 0.001 was not statistically significant, leading to the conclusion that the hypothesis is rejected. (Although the philosophical mindset of mathematics teachers in gifted schools was higher than that of their counterparts in regular schools, this difference was not statistically significant).

Similarly, for the variable of mindfulness, the independent t-test showed a significance level of 0.99, which is also greater than the standard significance level of 0.05. This suggests that there is no statistically significant difference in the mean scores of mindfulness between mathematics teachers in regular schools and those in gifted schools. The mean difference of 0.10 was not statistically significant, resulting in the rejection of the hypothesis. (While mindfulness levels were higher among mathematics teachers in gifted schools compared to those in regular schools, this difference was not statistically significant).

In conclusion, the independent t-test results indicated that the significance level for the variable of information processing styles was 0.99, which is greater than the critical significance level of 0.05. This implies that there is no statistically significant difference in the mean scores of information processing styles between mathematics teachers in regular schools and those in gifted schools. The mean difference of 0.0004 was not

statistically significant, leading to the rejection of the hypothesis. (Although information processing styles were higher among mathematics teachers in gifted schools compared to those in regular schools, this difference was not statistically significant).

4. Conclusion and discussion

This study aimed to explore the comparative and relational aspects of philosophical mindset, mindfulness, and information processing styles, with a focus on problem-solving among mathematics teachers in gifted and regular schools. The findings revealed significant relationships between philosophical mindset and information processing styles, as well as between mindfulness and information processing styles, all with an emphasis on problem-solving. However, no significant differences were found in philosophical mindset, mindfulness, or information processing styles between mathematics teachers in regular and gifted schools or between male and female teachers. This suggests that while philosophical mindset and mindfulness are significantly related to information processing styles, these relationships are consistent across different types of schools and genders, indicating a uniform impact of these factors regardless of the educational context or teacher demographics.

A philosophical mindset represents a form of structured thinking that embodies logical reasoning and coherence, offering a significant advantage. It allows an individual to maintain focus, *preventing* a chaotic and excessively emotional life. Without this concentrated and precise thought process, one may struggle with emotional behavior that can hinder effective communication with others. Hence, strengthening one's philosophical mindset is crucial. It fosters compassionate behavior, *as* anger and frustration are often traits of those lacking organized and logical thinking, which is indicative of a less developed mind. In the context of school management, where interactions span students, teachers, staff, parents, and administrators, possessing a robust philosophical mindset is essential for handling various issues successfully. Research by Heravi et al. [9] demonstrated that, apart from the lack of a significant relationship between flexibility (a subscale of philosophical mindset) and the perception of the source of existence (a subscale of spiritual intelligence), other subscales of the two primary variables showed a positive and significant correlation. Thus, cultivating a strong philosophical mindset in students can significantly enhance their spiritual intelligence. These findings are consistent with studies by [1], [4], and [7], further underscoring the crucial role a philosophical mindset plays in developing both cognitive and emotional capacities.

In addition, the present study indicates that there is a significant relationship between mindfulness and information processing styles, with a focus on problem-solving among mathematics teachers. This finding is consistent with the research by [3], which highlighted the role of mindfulness training in enhancing information processing. They demonstrated that mindfulness not only improves the ability to handle automatic responses but also facilitates better information processing. On the other hand, [2] argue that since mindfulness training shifts attention from intrusive thoughts to voluntary focus, individuals become capable of preventing secondary processing of thoughts, emotions, and bodily sensations that arise during schema activation. This allows them to utilize their working memory capacity more effectively to complete tasks.

Thus, in this process, information processing styles encompass personality traits that contribute to individual performance differences. Additionally, information processing styles refer to the ways in which an individual receives, stores, processes, and transmits information. Consequently, information processing styles, like many other abilities, are not innate but result from interactions with the surrounding environment throughout the processes of growth and socialization. Philosophical mindset and mindfulness are two personal attributes, especially relevant in performing tasks, that enable voluntary activities. Hence, many of an individual's prominent beliefs, economic thoughts, social behaviors,

and overall fundamental characteristics are shaped by their inherent nature, interactions with others, society, creativity, and adaptability. The results of this study are also consistent with the research conducted by [8].

Regarding Hypothesis 1: Given that there is a significant relationship between philosophical mindset and information processing styles with an emphasis on problem-solving among mathematics teachers, it is recommended to conduct training sessions aimed at enhancing philosophical mindset among teachers. This could lead to improved effectiveness and efficiency in their teaching practices. Additionally, incorporating information processing styles with a focus on problem-solving should be encouraged.

Regarding Hypothesis 2: Since there is a significant relationship between mindfulness and information processing styles with an emphasis on problem-solving among mathematics teachers, it is recommended that schools implement mindfulness training programs. Such programs can help improve the use of information processing styles with a focus on problem-solving among teachers.

Regarding Hypothesis 3: Given the hypothesis that there is a difference in philosophical mindset between mathematics teachers in regular and gifted schools, it is recommended to create environments that facilitate the free expression of ideas and innovations. Schools should be designed in such a way that ideas and innovations can be easily proposed and implemented. This will help cultivate a more robust philosophical mindset among teachers.

Regarding Hypothesis 4: Since it is hypothesized that mindfulness differs between mathematics teachers in regular and gifted schools, it is suggested that schools adopt mindfulness-based approaches to enhance job satisfaction among teachers. Providing training on mindfulness can contribute to a more fulfilling and effective teaching experience.

Regarding Hypothesis 5: Given the hypothesis that information processing styles differ between mathematics teachers in regular and gifted schools, it is recommended that educational authorities select teachers with greater knowledge, experience, and expertise in mathematics. Such teachers should be capable of employing analytical processing styles when addressing problems, thereby improving their effectiveness in teaching.

Regarding Hypothesis 6: Given the hypothesis that philosophical mindset differs between male and female mathematics teachers, it is recommended to emphasize the components of philosophical mindset during the recruitment and selection of teachers. Developing a comprehensive program that includes indicators of this variable can help in attracting teachers with a strong philosophical mindset. Additionally, creating opportunities for the development and enhancement of philosophical mindset through in-service training programs for both male and female teachers is suggested.

Regarding Hypothesis 7: Since it is hypothesized that mindfulness differs between male and female mathematics teachers, it is advised to create a structured and culturally relevant educational framework for teaching mindfulness. This framework should be based on local and Iranian cultural contexts and should be implemented in in-service training programs for both male and female mathematics teachers.

Regarding Hypothesis 8: In line with the hypothesis that information processing styles differ between male and female mathematics teachers, it is recommended that schools encourage and strengthen individual study among teachers. Regular engagement in acquiring new information promotes active processing of new data. Therefore, fostering habits that facilitate continuous learning can enhance information processing skills.

This study faced the following limitations:

- Geographical Limitation: The results of this study are specific to public and gifted schools in Tehran and may not be generalized to other cities in the country.
- Administrative Constraints: The study faced unnecessary restrictions from the education authorities regarding the distribution of questionnaires among teachers.

- Low Cooperation: There was significant difficulty in obtaining responses from some teachers, requiring considerable effort and convincing explanations to secure their participation.
- Expert Input: The study did not have the opportunity to incorporate the perspectives of other relevant experts in the field of research.

Future research could expand the sample size and demographic scope by conducting similar studies in different cities and rural areas to determine if the findings hold true across various geographic locations and by including a larger and more diverse sample to improve generalizability. Longitudinal studies could examine how philosophical mindset, mindfulness, and information processing styles evolve over time in teachers and assess the long-term impact of philosophical mindset and mindfulness training on teachers' professional development and student outcomes. Additionally, intervention studies could develop and test specific interventions aimed at enhancing philosophical mindset and mindfulness among teachers to see if these lead to improved information processing and problem-solving skills.

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