

The Effectiveness of Moral Intelligence Training on Students' Academic Conscience and Academic Competence

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ABSTRACT

This study examined the effect of moral intelligence training on the academic conscience and academic competence of female students in Zahedan. A quasi-experimental study was conducted using a pretest-posttest design and a control group. The statistical population consisted of all eleventh-grade female students of empirical science in Zahedan during the 2024-2025 academic year. Sixty students were picked via purposive sampling and subsequently assigned to either a control group or an experimental group at random. Data collection tools included the Moral Intelligence Training Program (Borba, 2005), the Academic Conscientiousness Questionnaire (McIlroy & Bunting, 2002), and the Academic Competence Evaluation Scale (DiPerna & Elliott, 1999). This study established content validity and estimated reliability using Cronbach's alpha coefficient, resulting in values of 0.83 for the Academic Conscientiousness Questionnaire and 0.88 for the Academic Competence Evaluation Scale. Statistical analysis of the data was conducted using univariate and multivariate analysis of covariance. The results demonstrated that moral intelligence training significantly improved the academic conscience of eleventh-grade female students in empirical science, explaining 51% of the variance and indicating its potential for enhancement. Moral intelligence training positively and significantly enhanced the academic competence of students. The results demonstrated that moral intelligence training significantly enhanced the academic conscience of the students, explaining 51% of the variance. Lastly, the findings demonstrated that moral intelligence training significantly enhanced academic conscience by 55% and academic competence by 64%.

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Introduction

The Education Department is a prominent public institution with a crucial responsibility in educating and training students who serve as the young generation and the nation's future builders. School is a place where students' aptitudes and capabilities are identified or realized. Individuals prepare for life, perfection, and academic growth through teachers' pedagogical expertise, the instillation of desirable values, and the development of essential skills. This process fosters a sense of commitment and academic conscience in students. This cultivation will lead to increased efficiency and, ultimately, to a personal and institutionalized trait characterized by a sense of internal motivation, high control, and enjoyment. This outcome is essential for revitalizing and enhancing school productivity, as well as fostering social responsibility within the broader community ([Fatin et al., 2018](#)).

Academic conscience is an internal factor that governs a student's actions and thoughts. It serves as a motivating force, compelling students to engage in a series of goal-oriented behaviors within the educational context. Additionally, it harmonizes various thoughts and preferences to foster constructive behavior ([Ahmadpour et al., 2021](#)). Conscientious individuals exhibit organization, reliability, and a tendency to avoid risks. They typically perform well, emphasizing the thorough and accurate completion of tasks. Moreover, they are distinguished by their exceptional perseverance, a strong desire for success, and exceptional diligence. Conscientious students consistently show a readiness to take all required steps to fulfill their assignments and responsibilities. The academic conscience plays a crucial role in shaping an individual's sense of responsibility, commitment, and adherence to assigned duties. This influence allows them to carry out their work thoroughly, both in terms of quantity and quality, even without direct or indirect external supervision ([Kiani, 2018](#)).

According to [Komar et al. \(2008\)](#), students with a strong academic conscience tend to complete school assignments more thoroughly and with greater seriousness—a trait that is associated with academic success. Conscience is the best personality variable for predicting academic and career performance ([Ahmadpour et al., 2021](#)).

Behaviorists suggest a relationship between conscience and the reinforcement of values and norms. Conversely, trait theorists argue that these behaviors stem from an underlying, pervasive, and hidden source ([Noroozi et al., 2016](#)). Both perspectives agree that conscience influences performance, as well as the reinforcement of beliefs, cognition, and expectations ([Fatin et al., 2018](#)). Costa and McGrae (1999) identify several sub-components of conscience, including adequacy, order, conscientiousness, self-control, sobriety, achievement orientation, and contemplation. Conscientious people exhibit productivity, commitment, ethical behavior, elevated enthusiasm, independence, and responsibility (Carr and Roberts, 2014, cited in [Kabini Moghadam et al., 2018](#)). Croitoru and Munteanu (2014) demonstrated that individuals with a high conscience and strong work ethic achieve higher academic grades and maintain more positive and committed social relationships, whereas those with a low conscience exhibit poor performance in both academic and professional contexts ([Kabini Moghadam et al., 2018](#)). Kim et al. (2019) established through their study that students exhibiting low conscience tend to perform poorly in both academic and professional settings. They demonstrated that academic conscience serves as a predictor of academic success ([Kim et al., 2019](#)).

In addition to academic conscience, this study examines academic competence (AC) as a significant determinant of student performance. AC encompasses behaviors linked to self-regulation, positive mood, initiative, perseverance, and mental engagement with homework, all of which contribute to academic achievement. Consequently, the identification of AC-associated behaviors in the context of students' learning and academic achievement presents a pertinent inquiry for researchers ([Anthony and DiPerna, 2018](#)). The framework encompasses the skills, attitudes, and behaviors that allow teachers to assess student performance and academic achievement in the classroom. It also includes students' subjective evaluations of their abilities to complete academic tasks and their beliefs regarding the adequacy of resources for optimal performance within the educational system, all aimed at enhancing teaching and facilitating student learning ([Jiménez et al., 2021](#)).

AC is further conceptualized as a composite of skills, including initiative, problem-solving, enthusiasm, social skills, and coping and developmental proficiencies. This construct integrates intrinsic and extrinsic cognitive resources, which reduce behavioral and social challenges, decrease adverse outcomes, and promote positive results ([Akbari, 2022](#)).

AC is a critical criterion for assessing the effectiveness of the educational system and its underlying factors. The measurement scale is a self-assessment tool that enables learners to evaluate their performance and beliefs regarding the resources necessary for optimal performance ([Ansary, McMahon, and Luthar, 2017](#)). When teachers assess students' academic skills, they evaluate various components of AC, including intrapersonal skills, study skills, motivation, and academic engagement. Competence encompasses knowledge, behavior, and both explicit and implicit skills, which enable individuals to perform their tasks effectively ([Eshghi, 2021](#)).

AC is reflected in students' skills to accomplish academic tasks effectively; it is regarded as a critical factor for success in the academic setting, enhancing their capacity to endure academic failures and challenges ([Tuononen and Parpala, 2021](#)). Thus, a deeper understanding of the factors that disrupt AC—those that create a gap between students and the educational system's overarching goals—may facilitate the development of preventative or interventional solutions to address this disparity ([Raby et al., 2019](#)). Maltais et al. (2017) demonstrated that multiple factors influence students' AC, including feelings of shame and self-esteem, cultural and economic factors, social and emotional connections within the school environment, parental training, and teacher expectations ([Maltais et al., 2017](#)).

[Mah and Ifenthaler \(2018\)](#) argued that higher education institutions must address the diverse needs of their students and offer appropriate support. This challenge is especially significant in the first year of university enrollment, as it represents a crucial phase for enhancing students' AC. Their research demonstrated a significant positive correlation between AC, academic resilience, and mastery goal orientation in female students. [Demaray \(2018\)](#) identified that diminished AC and increased anxiety levels among students lead to reductions in motivational engagement and overall academic performance.

On the other hand, moral intelligence (MI) can provide a framework for effective human functioning. Indeed, MI is characterized by the ability to distinguish right from wrong, maintain strong ethical convictions, act appropriately, show respect for life and nature, promote economic and social well-being, engage in transparent communication, and uphold civil rights. It functions as a crucial predictor of human behavior and includes a form of adaptation and problem-solving that reflects advanced development across multiple cognitive, spiritual, and emotional domains ([Rahimi, 2019](#)). MI provides individuals with a comprehensive perspective on life and all experiences and events, allowing them to frame and reinterpret their experiences while deepening their knowledge and understanding ([Narimani and Keramati, 2019](#)).

It pertains to the capacity to differentiate between right and wrong, along with robust moral convictions and the dedication to act accordingly. This entails acting correctly and suitably, indicating a commitment to deeply held beliefs in a way that promotes proper and respectful conduct ([Cheng and Cheng, 2015](#)). MI has several important characteristics, including the ability to recognize the pain and suffering of others, control one's own cruelty, and manage personal temptations and destructive instincts. It emphasizes respectful listening, non-judgmental acceptance, free from prejudices, and a humanistic attitude, all of which foster an understanding of human differences. Additionally, it involves refraining from immoral behavior, understanding and empathizing with others, and rejecting injustice for oneself and others. These qualities contribute to the development of a healthy individual in both personal and social aspects ([Rahimi, 2019](#)). According to Martin, Rao, and Sloane (2009), MI encompasses profound beliefs and values that can steer an individual's thoughts and behaviors. This form of intelligence serves as a guide for making informed decisions and encompasses the capacity to apply ethical principles in interactions with others ([Jalaei et al., 2019](#)).

MI refers to the notion that moral principles are not innate; instead, individuals learn how to be good. MI serves as a guide for conduct, helping us make informed and optimal choices. Numerous human behaviors are grounded in moral values. Morally intelligent people consistently connect their work to moral values, which boosts personal commitment and accountability, and consequently enhances both individual and team performance. Individuals with high MI exhibit commendable social behaviors, such as altruism ([Dehghan Manshadi, 2017](#)).

Alhadabi et al. (2019) demonstrated that MI is directly and positively correlated with students' academic self-efficacy and learning motivation ([Alhadabi et al., 2019](#)). Altan (2019) noted that the integration and practice of MI activities in the curriculum are more significant than any other topic ([Altan, 2019](#)). [Cheng and Cheng \(2015\)](#) recommended that educational centers regard the promotion of MI and child development as fundamental principles of education.

It is essential to acknowledge that numerous factors affect students' academic performance. A crucial factor is MI, which entails the capacity to differentiate between right and wrong, maintain strong ethical beliefs, and act in accordance with those principles. This capacity serves as the essential foundation for fostering true and enduring academic integrity and competence. Furthermore, MI is a vital component of human life, significantly impacting the educational experiences of students. Previous studies have demonstrated the independent effectiveness of MI training on students' AC and conscience.

Nevertheless, the interactive effects of these two domains and their simultaneous modulation by MI have yet to be thoroughly examined in the academic literature. This study fills this gap, highlighting its novelty and significance. The empirical outcomes of this study are expected to inform educational policy and practice within public education organizations, teacher preparation programs, and among educators and students. This research quantitatively enhances the existing theoretical framework related to MI, academic conscience, and AC among educational populations. The primary goal of this study is to assess the effect of MI training on the academic conscience and AC of 11th-grade female students in Zahedan, studying empirical science, during the 2024-2025 academic year.

Method

Sample and Sampling Method

This research used a quasi-experimental, pretest-posttest design with two groups: an experimental group and a control group. The study is applied in terms of its purpose. The statistical population consisted of 568 female eleventh-grade empirical science students in Zahedan during the 2024-2025 academic year. Sixty students were purposively selected from the population and randomly assigned to either the experimental or control group. The experimental group underwent MI training.

Tools Used

Academic Conscientiousness Questionnaire (ACQ): Developed by McIlroy and Bunting (2002), the ACQ comprises nine items. Items are evaluated using a seven-point Likert scale, with responses ranging from "strongly disagree" (score 1) to "strongly agree" (score 7). The questionnaire has a minimum score of 9 and a maximum score of 63, with a designated cutoff point of 36. Items 1, 2, 3, 4, 6, 7, and 8 are scored in reverse. McIlroy and Bunting (2002) determined the internal consistency reliability of the ACQ through Cronbach's alpha, yielding a coefficient of 0.89. A concurrent validity coefficient of 0.35 was also reported ([Rostamogli & Khoshnoodnia Chamachaei, 2013](#)). [Fatin et al. \(2017\)](#) assessed the reliability of the questionnaire, obtaining a Cronbach's alpha of 0.73. Additionally, [Noroozi et al. \(2016\)](#) reported an internal consistency of 0.78 for the instrument, determined through Cronbach's alpha.

Academic Competence Evaluation Scale (ACES): ACES, developed by DiPerna and Elliott (1999), is a 67-item instrument organized into two main dimensions: academic skills, which include reading, language, mathematics, and critical thinking abilities, and academic enablers, comprising interpersonal skills, classroom engagement, academic motivation, and study skills. All items are assessed using a five-point Likert scale, with values ranging from 1 ("never") to 7 ("almost always"). DiPerna and Elliott (1999) demonstrated the validity and reliability of the questionnaire via factor analysis, resulting in a five-factor model that includes subscales for academic skills, interpersonal skills, motivation, engagement, and study skills. The internal consistency, as evidenced by Cronbach's alpha coefficients reported by DiPerna and Elliott (1999), was 0.98 for academic skills, 0.97 for motivation, 0.95 for interpersonal skills, 0.94 for study skills, and 0.92 for engagement.

MI Training Program: This study utilized a quasi-experimental pretest-posttest design with a control group. Participants were randomly allocated to either the experimental group or the control group. Before the intervention, both groups underwent pretests to evaluate their AC and academic conscience. The experimental group subsequently went through an MI training program, grounded in Borba's (2005) theory, consisting of eleven 60-minute sessions conducted biweekly in a group format. One month after the intervention, both groups completed posttests assessing AC and academic conscience. Table 1 presents a summary of the MI training sessions.

Table 1. Summary of moral intelligence training sessions based on Borba's theory (2005)

<i>Session</i>	<i>Title</i>	<i>Content</i>
1	Familiarity and briefing	The first phase involved explaining the program's objectives and obtaining a commitment from participants to attend the sessions. Respect, active listening, and confidentiality were among the guidelines established for the session. Next, MI was introduced and discussed, with a focus on universal class participation. Description: An example was given through which one ethically compliant and one ethically noncompliant student were compared. Participants were asked to describe ethically exemplary individuals they knew, and their responses were analyzed.
2	Empathy defined	Key topics included defining empathy, explaining its importance and necessity, and examining its impact on interpersonal relationships. The session focused on identifying empathic behaviors in relational contexts, as well as assessing and modifying non-empathic interaction patterns. Active listening training was also a key component. Description: The session included an illustration of misinterpreting behavior based on superficial observations, concrete examples of empathic responses, and an emphasis on accurate reception of others' verbal communications. A critical goal was to develop an understanding of peers' life circumstances and interpret their behaviors through the lens of these contextual factors.
3	Conscience defined	The session addressed the definition, significance, and necessity of the virtue of conscience, as well as its effects on interpersonal relationships. Instances of conscience in real life were examined, along with the consequences of actions taken without it. Description: Examples of conscientious behaviors were presented. The illustrations involved evaluating whether individuals possessed reasonable expectations of their peers and how they conducted themselves with moral consideration towards them. Also discussed were responsibility and accountability for one's own and others' behaviors. They were asked to cite examples of remorse and instances where they listened to the voice of their conscience.
4	Self-control defined	This session defined self-control, highlighted its importance and necessity, and examined its direct impact on relationships. Participants encountered examples of self-control in daily life and learned to classify self-disciplined behaviors. The session also emphasized the benefits of self-control and offered ways to resist temptation. Description: The session demonstrated self-control in various situations. Calmness and relaxing physical activities were highlighted. The session focused on anger management and how self-control impacted friendships. Also highlighted was the role of positive self-talk in self-control under challenging situations.
5	Respect defined	This session defined respect as a virtue and explained its importance. It examined how respect deficits affect society and emphasized the Golden Rule: "Reciprocate conduct with others as desired for oneself." It also evaluated and characterized disrespectful behavioral typologies and cognitive frameworks for resolving interpersonal conflict and addressing disrespect. Description: One respectful and one disrespectful behavior were illustrated. A critical self-assessment question was posed: "What behaviors today evidence respect or disrespect?" Discussing filial and elder respect and its effects. Additionally, the session described a child's respectful lexical and phrasal patterns in social interactions.
6	Kindness defined	The session covered several key issues: the definition of kindness, kindness in interpersonal relationships, the consequences of a lack of kindness in interpersonal relationships, the stages and implications of the unkindness crisis and the erosion of civility, and identifying and addressing cognitive biases that influence unkindness in interpersonal interactions. Description: Participants were asked to identify and document positive and negative behaviors among students during weekly interactions. They were also asked to identify their unkind behaviors directed at peers. They discussed the benefits of kind behavior and the negative consequences of unkind behavior. The thought patterns that lead to unkindness in peer interactions were examined.

7	Fairness defined	This session explored the concept of fairness as a virtue and its impact. It demonstrated fairness in daily life and suggested ways to establish and reinforce it. Positive imagery techniques were practiced and trained, focusing on classmates' good memories and behaviors. The session included exercises that promoted diversity and addressed prejudice. Description: The session illustrated fair and unfair behavior. Participants tracked their fairness to classmates during the past week. The participants assessed how fair an individual's judgments about others' behaviors were and which personal behaviors demonstrated fairness. The program also discussed misjudgments and encouraged participants to evaluate their classmates' fairness.
8	Tolerance defined	Definition, significance, and relational impact of tolerance were discussed. Tolerance examples, including passive, aggressive, and assertive behavioral profiles, as well as anger-eliciting stimulus responses, were examined. Specifically, anger management skills were emphasized. Anger control was taught behaviorally, not dispositionally. Practice included weekly recording of tolerant behaviors, anger inhibition, and categorization of anger-provoking responses. The session emphasized the importance of managing anger positively and delaying gratification to achieve long-term goals. Additionally, it examined impulsive personality traits and their adverse behavioral consequences. This session concluded by identifying contexts that required individual patience.
9	Integrity defined	Definition and behavioral salience of integrity dominated the session's content. This included defining truth and untruth, forbidding dishonesty and its consequences, and investigating the origins of "maslahati" (expedient) lies. A key principle was doing the right thing regardless of personal gain. The session illustrated ethical people who did not benefit themselves. The practical application involved recording students' expedient untruths over a week and analyzing their candid responses. The session also evaluated student integrity and dishonest behavior during the past week, including their positive and negative effects.
10	Forgiveness defined	This session examined forgiveness and its benefits. It also examined the role of forgiveness in reducing conflict escalation and the dynamics of forgiveness from a position of power, including the experience of perceived superiority. Also examined were student-provided examples of personal forgiveness, the behavioral outcomes in a scenario where a student chose not to forgive, and forgiveness as an altruistic act toward younger people.
11	Summary, conclusion, and review of preceding stages	The session covered ways to identify when to employ ethical intelligence. Identifying ethical intelligence situations and cultivating the above virtues were key. Students were acknowledged for their attendance. A thorough review of previous instructional content in the session design encouraged group discussion and feedback. The focus was on transferring learned concepts to individual and societal domains, including family and peer networks. A structured discussion clarified the recognition of ethical context. Rotational questioning collected participant feedback and addressed ambiguities in the learning process. After eliciting affective responses and experiential accounts, the session assessed the efficacy of the training.

Result

Table 2 presents the descriptive findings regarding the mean and standard deviation results of the pretest and posttest for students in experimental and control groups

Table 2. Pretest and posttest results per group

Group	Variable	pretest		Posttest	
		Mean	S.D.	Mean	S.D.
Experimental	Academic conscience	36.83	4.01	49.93	3.92
	Academic competence	204.13	26.04	248.60	23.14
	Academic skills	59.26	6.15	84.20	6.93
	Academic enablers	86.00	7.01	118.13	6.60
	Academic competence	145.26	12.84	202.33	12.60
Control	Academic conscience	37.86	4.03	41.20	4.88
	Academic competence	152.13	9.43	169.30	12.71
	Academic skills	62.23	4.58	69.36	5.79
	Academic enablers	89.90	5.18	99.93	7.26
	Academic competence	152.13	9.43	169.30	12.71

Table 3. Results from the test for homogeneity of regression slopes, a foundational assumption for the analysis of covariance (ANCOVA), for the variables of academic conscience and academic competence

Source of variation	Component	Sum of Squares	Degrees of freedom	Mean Squares	F-value	Significance level
Pretest	Academic conscience	23.931	1	11.966	0.732	0.48
	Academic competence	164.620	1	82.310	2.798	0.071
Results of Levine's test for homogeneity of variances						
Variable	F	Degrees of freedom	Degrees of freedom	Significance level		
Academic conscience	2.676	1	58	0.107		
Academic competence	0.294	1	58	0.590		
Academic skills	0.114	1	58	0.737		
Academic enablers	1.637	1	58	0.206		

Table 3 presents the results of the analysis evaluating the homogeneity of regression slopes, a critical assumption for performing analysis of covariance (ANCOVA). The interaction term between group and pretest exhibits a significance level exceeding 0.05. The assumption of homogeneity of regression for academic conscience and AC among female students is thus supported. Additionally, as shown in Table 3, the results of Levene's test are not statistically significant at the 95% confidence level ($P > 0.05$). This result suggests that the assumption of homogeneity of variances for academic conscience, AC, and their corresponding sub-components is valid for the students.

Table 4. Results of multivariate analysis of covariance for academic competence components

Effect	Test	Value	F	Effect freedom	degrees of Error freedom	degrees of	Significance level	Effect size
Group	Pillais Trace	0.641	49.152	2	55		0.001	0.641
	Wilks Lambda	0.359	49.152	2	55		0.001	0.641
Box's M-test results for covariance matrix homogeneity with respect to the academic competency components								
		Box's	F	df1		df2	Significance level	
		3.211	1.030	3		605520.00	0.378	

Table 4 indicates that Box's Test statistic (3.211) did not achieve statistical significance at the 95% confidence level ($P > 0.05$). The homogeneity of covariance matrices for the AC components among 11th-grade female empirical science students is thus confirmed. The results in Table 4 demonstrate that both Pillai's Trace (0.641) and Wilks' Lambda (0.359) statistics are statistically significant at the 99% confidence level ($P < 0.01$). The effect size of MI on the AC components in the students was 64%. A significant difference is present in at least one component of AC among 11th-grade female students.

Table 5. Results of analysis of covariance to compare academic conscience and academic competence in experimental and control groups

Variable	Source	Sum of Squares	Degrees of freedom	Mean Squares	F-value	Significance level	Effect size
-----	Pretest	19.530	1	19.530	0.995	0.323	0.017
	Academic conscience	1163.597	1	1163.597	59.264	0.001	0.510
	Error	1119.136	57	19.634			
	Total	126862.00	60				
-----	Pretest	54.224	1	54.224	0.334	0.565	0.006
	Academic competence	15472.018	1	15472.018	95.395	0.001	0.626
	Error	9244.743	57	162.188			
	Total	2097337.00	60				
Academic skills	Between-group	2978.681	1	2987.681	70.509	0.001	0.557
	Within-group	2365.734	56	42.245			

	Total sum	359411.00	60				
	Between-group	4859.805	1	4859.805	99.902	0.001	0.641
Academic enablers	Within-group	2724.167	56	48.646			
	Total sum	721062.00	60				

The findings presented in Table 5 demonstrate a significant difference between the experimental and control groups regarding academic conscience ($F = 264.59$, $P = 0.001$), suggesting that MI training was effective for the experimental group in this domain. The effect size (eta coefficient) for academic conscience was 0.510, indicating that 51 percent of the changes in academic conscience within the experimental group were attributable to MI training. Consequently, it can be concluded that MI training had a positive and significant impact on the academic conscience of female eleventh-grade students in Zahedan.

The results presented in Table 5 indicate a significant difference in AC between the experimental and control groups of female students ($F = 395.95$, $P < 0.001$), suggesting that MI training was effective in enhancing AC for the experimental group. The effect size (eta coefficient) for the AC variable was 0.626, indicating that 62 percent of the changes in the AC of female students in the experimental group were attributable to MI training. Thus, it can be concluded that MI training had a positive and significant effect on the AC of the students.

Furthermore, Table 5 presents the results of the multivariate analysis of covariance concerning AC components. The analysis revealed significant differences between the experimental and control groups in both the academic skills component ($F = 70.509$, $P = 0.001$) and the academic enablers component ($F = 99.902$, $P = 0.001$), indicating that MI training was effective for the experimental group. The effect size (eta coefficient) for the academic skills component and the academic enablers component indicated that 55% and 64% of the changes in the academic skills and academic enablers components, respectively, were attributable to MI training. In conclusion, MI training has had a positive and significant impact on the components of academic skills and academic enablers among eleventh-grade female students in Zahedan, resulting in enhanced academic skills and academic enablers for these students.

Discussion & Conclusion

This research investigated the impact of MI training on the academic conscience and AC of eleventh-grade female students of empirical science in Zahedan. The findings from the first question indicated that 51 percent of the variations in the academic conscience of female students are attributable to MI training. Consequently, it can be inferred that MI training has exerted a positive and significant influence on the academic conscience of eleventh-grade female students in Zahedan. This finding aligns with the results of [Ghaderi \(2023\)](#), [Jalaei et al. \(2019\)](#), [Kabini Moghadam et al. \(2019\)](#), [Chan \(2023\)](#). [Ghaderi \(2023\)](#) demonstrated a positive and significant impact of mindfulness skills on students' academic conscience and academic meaning. [Jalaei et al. \(2019\)](#) found that games designed around MI positively and significantly influenced children's academic conscience, self-control, and social responsibility. [Kabini Moghadam et al. \(2019\)](#) demonstrated that instructing students in self-directed learning strategies and promoting help-seeking behaviors enhances the academic engagement of students who procrastinate. [Chan \(2023\)](#) demonstrated that individuals possessing MI align their objectives and behaviors with universal principles and an academic conscience. the perceived responsibilities of academics are shaped by both their identity and the moral and normative obligations stemming from their academic conscience. Furthermore, it was observed that the responsibilities associated with the academic role are closely tied to one's personal sense of duty, and this relationship significantly enhances the efficacy of MI education in fostering accountability.

Academic conscience refers to the collection of academic motivations, conceptualizations, perspectives, and convictions that guide an individual's self-direction and identification of academic behaviors, emotions, and goals. AC requires students to engage in goal-directed behaviors within educational settings and integrate disparate thoughts and inclinations to foster adaptive behavior ([Kiani, 2018](#)). According to [Komar et al. \(2008\)](#), students who possess a high academic conscience are more likely to complete their school assignments with greater seriousness and thoroughness, which is correlated with higher academic

achievement. Intelligence has a significant influence on various aspects of life. Researchers define intelligence as the capacity to acquire knowledge, the ability for abstract reasoning, and the capability to solve problems. MI is closely linked to the enhancement of societal scientific intelligence and significantly influences the future of students ([Ramezanzadeh and Mosleh, 2010](#)). MI training serves as a framework for behavior, facilitating intelligent and optimal decision-making. Consequently, the findings of this study indicate that MI training is an effective means for enhancing students' academic conscience.

The findings associated with the second question indicated that 62 percent of the changes and enhancements in the AC of female students in the experimental group were attributable to MI training. As a result, it can be concluded that MI training exerted a positive and significant effect on the AC of eleventh-grade female students in empirical science in Zahedan.

This finding aligns with the results of [Rostamnezhad and Sardari \(2021\)](#), [Abdellatif et al. \(2024\)](#), [Lozano-Blasco et al. \(2022\)](#), and [López-Varas et al. \(2021\)](#). [Rostamnezhad and Sardari \(2021\)](#) found that education using Bybee's five-stage teaching model positively and significantly impacted students' AC and enthusiasm. Saburi (2021) demonstrated that enhancing MI can effectively improve students' social skills and moral competencies. [Lozano-Blasco et al. \(2022\)](#) established the impact of MI on AC. Their findings suggest that intelligence is a strong predictor of AC; however, its predictive validity depends on the specific conceptualization of intelligence, the theoretical framework used, and the cultural and national context from which it originates. [López-Varas et al. \(2021\)](#) demonstrated that senior students exhibited superior general and specific academic competencies compared to first-year students, with no significant differences observed in intelligence or academic achievement. Female students demonstrated superior academic achievement and higher scores in certain general and specific academic competencies, although not in intelligence.

AC encompasses knowledge, skills, abilities, and motivation, enabling individuals to execute their activities and tasks accurately and attain success ([Akbari, 2022](#)). According to Bandura (2001), competence is defined as an individual's assessment and evaluation of their skills and abilities necessary for task performance in particular contexts. A sense of competence allows individuals to effectively navigate obstacles, making it a crucial factor for successful performance and the foundational skills required for task execution. Competence influences the effort necessary to accomplish a task. Individuals who possess a strong belief in their efficacy exert additional effort to surmount challenges and difficulties ([Rezaee Nasab, 2019](#)). MI enables students to respond rationally and ethically to the inevitable moral pressures and challenges encountered in life. Students lacking MI face significant risks. They may experience significant academic regression as a result of superficial conscience, difficulty in managing desires, insufficient moral sensitivity, and misguided beliefs ([Narimani and Keramati, 2020](#)). Hence, MI training can enhance students' AC.

The results of the third question indicated that 55% of the enhancement in academic skills and 64% of the improvement in academic enablers among eleventh-grade female students were attributable to MI training. Reasonably, therefore, MI training has positively and significantly impacted the components of academic skills and academic enablers among the students, enhancing their academic skills and enablers.

This finding aligns with the results reported by [Rostamnezhad and Sardari \(2021\)](#), [Abdellatif et al. \(2024\)](#), [Lozano-Blasco et al. \(2022\)](#), and [López-Varas et al. \(2021\)](#). The findings of [AbdulLatif et al. \(2024\)](#) indicate that MI training fosters values such as AC and academic conscience, which are crucial for academic success and personal development. Focusing on the educational and personality development of students within any society fosters individuals capable of undertaking diverse responsibilities and effectively leading and guiding their communities. Students, however, constitute more than simply one demographic in society. They must have access to suitable facilities. One viable option is possessing high academic competencies. MI training can enhance students' academic skills and facilitate academic enablers.

This study was conducted with a sample of female eleventh-grade empirical science students in Zahedan. Generalizing the results to students from varying grades, cities, and cultures requires caution. The results of this study are subject to the limitations inherent in questionnaire-based survey research due to the reliance on questionnaires. As intellectual congruence with a role model is the primary determinant in students' selection of behavioral models, it is recommended that schools organize meetings to develop strategies that enhance the appropriateness and rationale behind students' choices of behavioral models. Teachers and instructors are advised to adopt an educational approach that emphasizes discussion and challenges the traditional hierarchical relationship with students. By allocating adequate time for engagement and ensuring

equal opportunities for all, educators can transition from authoritative figures to roles of assistance, facilitation, and support. This shift is expected to enhance students' AC and, consequently, their academic conscience.

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