The Association of Academic Self-actualization, Self-regulation, and Classroom Socio-psychological Climate with Student Academic Motivation Mediated with Achievement Emotions

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Abstract

The present study aimed to investigate the association between academic self-actualization, self-regulation, and classroom socio-psychological climate with students' academic motivation with the mediation of achievement emotions in high school students. The statistical population of this cross-sectional correlational study consisted of all high school students in Tehran in 2019, with 485 students selected using multistage cluster sampling. The research instruments included the Academic Motivation Scale (AMS), Self-Actualization Scale (SAS), Motivated Strategies for Learning Questionnaire (MSLQ), Classroom Socio-psychological climate, and Achievement Emotions Questionnaire (AEQ). Data were analyzed by structural equation modeling (SEM) in SPSS and Lisrel software. The results showed that academic self-actualization, achievement emotions, and classroom socio-psychological climate had a positive association with academic motivation in the high school students (p<0.01). Moreover, there was a significant association between self-regulation and academic motivation among the students (p<0.01). The findings indicated that academic self-actualization, self-regulation, and classroom socio-psychological climate had an effect on students' academic motivation, with achievement emotions acting as a mediator (p<0.01).

Keywords: Achievement, motivation, self-actualization, self-regulation, socio-psychological climate

Introduction

Academic motivation is one of the prerequisites of learning that directs and intensifies behavior and assists the learner in maintaining and sustaining it; motivation, in fact, provides energy to the learner (Urdan & Bruchmann, 2018). Motivation is widely acknowledged to be the primary structure in learning (Beerenwinkel & von Arx, 2017). According to Gutierrez, Foxx, and Kondili (2018), motivation is what drives a person to achieve a specific goal. Academic motivation refers to an individual's acquired beliefs about his or her own values, abilities, and capabilities, as well as goals and expectations for success or failure, and positive and negative feelings resulting from self-evaluation (Fallah, Hafezi, Makvandi, & Bavi, 2020). Academically

motivated students are encouraged to complete homework successfully and achieve goals with a certain level of competency so that they can finally achieve the success required in learning and academic achievement (Shamsnezhad, Hosseininasab, & Livarjani, 2020). In terms of goal type, academic motivation includes the following: Extrinsic academic motivation and intrinsic academic motivation. Extrinsic academic motivation is motivated by extrinsic rewards such as good grades and awards. There may be negative consequences if this is used improperly and overemphasis is placed on it. Fulfilling students' intrinsic needs and acquired beliefs about themselves is what intrinsic academic motivation entails. This type of academic motivation is important in learning, and if it is emphasized, there are positive outcomes (Titrek, Çetin, Kaymak, & Kaşikçi, 2018). In

this regard, Wang, Brinkworth, and Eccles (2013) discovered that students with high academic motivation accept more activities, do more homework, and thus achieve greater success.

Self-regulation is one of the factors that influence students' academic motivation. Self-regulatory skills are one of the aspects that emphasize a person's role in the learning process and include strategies used by students to regulate their cognitions (Aghdar, Allipour, & Shehni Yeilagh, 2020; Alfred, Neyens, & Gramopadhye, 2019). To put it another way, self-regulatory skills refer to students' active participation in individual, behavioral, motivational, and cognitive learning efforts in order to achieve important and valuable academic goals (Garcia, Falkner, & Vivian, 2018). Self-regulation has valuable consequences in the education and learning process, and compatibility and success at school necessitate students developing self-regulation or similar processes to cognition, to develop and strengthen feelings, or to achieve goals (Jafarkhani, Manzari Tavakoli, Manzari Tavakoli, & Razavi, 2019). According to Zimmerman and Kitsantas (2014), self-regulating students actively participate in the learning process in order to achieve their learning objectives. According to research, self-assessment and self-direction are related to better academic performance and greater academic achievement, and learning self-regulation is related to self-efficacy and academic performance (Bondarenko, 2017; Debicki, Kellermanns, Barnett, Pearson, & Pearson, 2016; Lee, Lee, & Bong, 2014). Individuals with low self-regulation have lower self-efficacy, which can cause anxiety and a sense that things are out of control. Using self-regulation strategies improves students' cognitive well-being and academic achievemnt while decreasing homework ignorance.

Academic self-actualization is another variable associated with academic motivation. Academic self-actualization is a representation of a person's optimal mental mode, defined as an intrinsic attempt to maximize a person's abilities, and can be one of the components of self-growth (Akçay & Akyol, 2014). Individuals who have attained self-actualization accept their human nature with all of its flaws, are secure and do not require defensive behavior, and are not easily threatened. Such people are sensitive and aware of their surroundings and stimuli; their control location is mostly intrinsic rather than extrinsic; and as a result, they are autonomous and independent, creating their own value system. They can also form appropriate interpersonal relationships and have acceptance, respect, and sympathy for others (Vittersø, 2004). According to Heidari, Madani, and Rostami (2013), academic self-actualization has a positive association with academic

self-efficacy and classroom socio-psychological climate.

The term "classroom socio-psychological climate" refers to a general pattern of social relationships among classmates as well as relationships with teachers, and also a general type of education and teaching (Bhatia & Kapur, 2018). Classroom socio-psychological climate can both be intrinsic and extrinsic. Its extrinsic dimension refers to the physical resources of the climate, while its intrinsic dimension refers to individuals' differing perceptions of the climate based on their intelligence, education, and past, and it is also one of the variables influencing students' academic performance (Selleri & Carugati, 2018). It is also a valuable learning concept that has piqued the interest of researchers, teachers, school principals, and other school personnel. According to some studies, a quiet classroom climate and high coherence among students play an important role in students' mental balance (Bhatia & Kapur, 2018). The association between classroom climate and incompatibility is not a simple one; rather, it can be influenced by a variety of moderator and mediation variables. According to a review of the literature, cognitive processes play an important role in learning, motivation, and classroom management (Isaichev, Chernorizov, Adamovich, & Isaichev, 2018).

Other factors also influence students' academic motivation, one of the most important of which is achievement emotions, which was considered as mediation variable in the present study. Achievement emotions are defined as emotions that are directly related to achievement activities or achievement outcomes. Previous research on achievement emotions focused on emotions associated with the outcomes of success and failure in achievement activities, such as pride, anxiety, or shame (Vierhaus, Lohaus, & Wild, 2016). The control-value theory investigates not only such consequential emotions, but also emotions associated with activities such as pleasure from learning, exhaustion during education, and rage against homework requirements. Activity emotions are linked to achievement activities, whereas consequential emotions are linked to the outcomes of such activities (Bahadori & Mesrabadi, 2018). Positive achievement emotions promote the use of innovative and adaptable learning strategies such as expansion, organization, critical assessment, and metacognitive monitoring. Negative achievement emotions also facilitate the use of inflexible strategies like simple repetition. The study carried out by Datu and King (2018) indicated that activator positive emotions such as pleasure from learning facilitate the application of creative learning strategies, cognitive acceptance flexibility in the application of cognitive and

metacognitive strategies in accordance with the required goals and homework.

Based on above considerations, the present study aimed to investigate the association between academic self-actualization, self-regulation, and classroom socio-psychological climate with students' academic motivation with the mediation of achievement emotions in high school students.

Methods

Design

The present research was a correlational study in which structural equation modeling was used, which is a multiple correlation method.

Participants

The statistical population consisted of all high school students in Tehran in 2019, with 485 students selected using multistage cluster sampling. The sample size in structural equation modeling can be set between 5 and 15 observations per measured variable: $5Q<=n<=15q$, where q is the number of variables observed or the number of items (questions) of the questionnaire, and n is the sample size. In this study, the sample size was considered for each of the five subjects' questions. In fact, given the number of items in the questionnaire, 470 students were considered, and 550 questionnaires were distributed among students to avoid sample size reduction. Finally, 485 questionnaires were filled out. The inclusion criteria were: consent to participate in research, having no mental disorders, and age range between 16-18 years. The exclusion criteria included failure to completely answer all the questions.

Instruments

The Academic Motivation Scale (AMS): Harter's Academic Motivation Scale (AMS) is a 33-item questionnaire designed to assess students' academic motivation. The Academic Motivation Scale assesses academic motivation through bipolar questions, with one pole representing intrinsic motivation and the other representing extrinsic motivation, and the subject's answer to each question can only have either intrinsic or extrinsic motivation. This scale includes the following items based on the Likert scale: Never: 1; Rarely: 2; Sometimes: 3; Mostly: 4; Almost always: 5. Bahrani (2009) reported the reliability of this scale equal to 0.78 based on Cronbach's alpha coefficient. The Cronbach's alpha coefficient was 0.81 in the present study.

Self-Actualization Scale (SAS): This tool consists of 15 sentences on a Likert scale in which the subject must select one of six options ranging from Strongly disagree (1) to Strongly agree (1). (6). This questionnaire has an overall score that indicates the individual's perceived level of self-actualization. Hosseini Dowlatabadi, Sadeghi, Saadat, and Khodayari, (2014) reported a Cronbach's alpha of 0.75 for the scale. In the current study, the Cronbach's Alpha coefficient for the scale was obtained as 0.79.

Motivated Strategies for Learning Questionnaire (MSLQ): Pintrich, in 1991 developed this questionnaire to assess motivational beliefs and learning strategies. The subscale of self-regulated learning strategies consists of 47 sentences, each of which is a subcomponent of cognitive and metacognitive strategies. Cognitive strategy subscales include repetition and review, note-taking expansion, summarizing, organizing, and comprehension. Furthermore, subscales of metacognitive strategies include the following: planning, monitoring and control, regulation including effort and perseverance and regulation activity that ranges from 1 (strongly agree) to 5 (strongly disagree). Higher subscale scores indicate a higher level of cognitive and metacognitive strategies, while lower scores indicate a lower level of cognitive and metacognitive strategies. Pourmohammad and Esmaeilpour (2016) reported the reliability of this questionnaire equal to 0.86 based on Cronbach's alpha coefficient. In the present study, Cronbach's alpha coefficient was 0.83 for the questionnaire.

Classroom Socio-psychological Climate: The Classroom Socio-psychological Climate Questionnaire has 20 items on four subscales based on a three-score Likert scale as never, sometimes, and always. This scale is divided into four subscales, which are as follows: A. Friction, which denotes the degree of inconsistency or unfriendly behavior among students. B. Union (integration), which demonstrates the degree to which students rely on one another and the class; C. Discipline (task orientation), which indicates how well students complete their classwork and homework on time and completely; D. Competition, which indicates the level of competition among students. The minimum and maximum scores are 20 and 60, respectively. Lower scores indicate a disturbed socio-psychological climate, while higher scores indicate an adequate socio-psychological climate. Karbalaeihasani (2021) reported the reliability of this scale equal to 0.79 based on Cronbach's alpha coefficient. In the current study, the Cronbach's Alpha coefficient for the questionnaire was obtained as 0.82.

Achievement Emotions Questionnaire (AEQ): The Achievement Emotions Questionnaire (AEQ) was developed by Pekrun, Goetz, and Perry (2005) as a multidimensional self-report tool to measure

achievement emotions. This questionnaire assesses various achievement emotions in three areas of academic achievement: classroom, studying, and exams. Thus, the Achievement Emotions Questionnaire (AEQ) assesses eight different types of emotions in the classroom, while studying, and during exams. Participants in the Achievement Emotions Questionnaire (AEQ) rate each item on a five-point scale ranging from strongly disagree (1) to strongly agree (5). The classroom emotion scale has 80 items, while the learning and exam emotion scales have 75 and 77 items, respectively, and measure a similar set of eight types of emotion (pleasure, hope, relief, anger, anxiety, shame, frustration, and exhaustion). Kadivar, Farzad, Kavousian, and Nikdel, (2009) reported a Cronbach's alpha of 0.86 for the questionnaire. In the present study, Cronbach's alpha coefficient was 0.81 for the questionnaire.

Procedure

Five districts were selected from a total of 22 districts in Tehran, four schools were selected from each district, three classes were selected from each school, and finally, questionnaires were administered to selected students in the selected schools. A total of 550 questionnaires were distributed among students. Ultimately, 213 questionnaires filled out by qualified participants were analyzed. In terms of ethical considerations, the participants gave their informed consent in which information confidentiality was ensured. It should be noted that throughout the data collection process, students were informed about the study objectives, voluntary participation, observing privacy, keeping identification information confidential, and the right to withdraw from the study, and their consent was obtained.

Statistical Analyses

Data were analyzed by structural equation modeling (SEM) in SPSS version 23.0 and Lisrel version 8.8 software.

Findings

In this study, structural equation modeling was first used to evaluate and confirm the assumptions of multivariate normal distribution, multi-linearity, linearity, and error independence. Skewness and Kurtosis tests were used to assess the data's normal distribution. according to the results, the data normal distribution was confirmed. Multi-linearity was checked by tolerance statistics and variance inflation factor. All the variables had variance inflation factor<10 and tolerance statistics >0.1; therefore, the assumption indicating non- multi-linearity was met. Confirmatory structural equation was used to answer the above hypotheses. To this end, after designing the structure, the model constraints were added, and the maximum likelihood method was run. Figure 1 depicts the model parameters, as well as the factor loading and path coefficients. Given the obtained values of standard coefficients and t-value, it can be concluded that the variables had a direct association. The model fit well, as indicated by the Chi-squared test and RMSEA. As shown in Table 1, model outputs were examined. According to Table 1, the model indicators had a good fit.

Table 1.
Proposed Model Fit Indicators

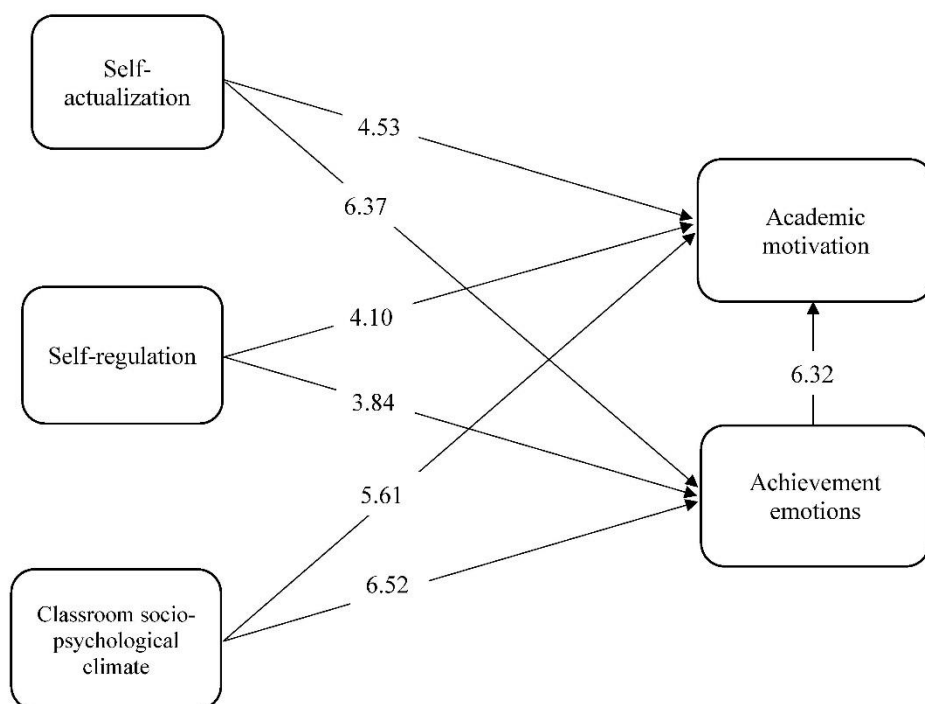| Fit indicators	χ^2	df	(χ^2/df)	GFI	AGFI	CFI	NFI		RMSEA
Proposed model	758.37	289	2.62	0.94	0.92	0.96	0.95	0.062	

Figure 1.
Structural Model of The Research with Standard Coefficients

The path coefficients and significant values are shown in Table 2. All paths were approved based on the results. According to the results, there was a significant association between students' self-regulation and academic motivation. The classroom socio-psychological climate had a positive and significant effect on high school students' academic motivation. The results also showed that there was an association between students' achievement emotions and academic motivation (p<0.01). Moreover, the results indicated that academic self-actualization, self-regulation, and classroom socio-psychological climate had an effect on high school students' academic motivation, with achievement emotions acting as a mediator (p<0.01).

Table 2.
Path Coefficients of Direct and Indirect Effects Between the Variables in the Model.

Path	Path type	β	p
Academic self-actualization to academic motivation	Direct	0.56	0.01
Self-regulation to academic motivation	Direct	0.52	0.01
Classroom socio-psychological climate to academic motivation	Direct	0.64	0.01
Academic self-actualization to achievement emotions	Direct	0.68	0.01
Self-regulation to achievement emotions	Direct	0.52	0.01
Classroom socio-psychological climate to achievement emotions	Direct	0.68	0.01
Achievement emotions to academic motivation	Direct	0.67	0.01
Academic self-actualization to academic motivation	Indirect	0.45	0.01
Self-regulation to academic motivation	Indirect	0.35	0.01
Classroom socio-psychological climate to academic motivation	Indirect	0.46	0.01

Discussion

The present study aimed to investigate the association between academic self-actualization, self-regulation, and classroom socio-psychological climate with

students' academic motivation with the mediation of achievement emotions in high school students in Tehran. The findings indicated that academic self-actualization, self-regulation, and classroom socio-psychological climate had an effect on high school students' academic motivation, with achievement emotions acting as a mediator.

The results indicated that there was a significant association between self-regulation and academic motivation. This finding is consistent with the research results of Yavari, Garrusi, Safizadeh, and Abbaszadeh (2015), and Baars, Wijnia, and Paas (2017). Many researchers have found that students with higher achievement are often self-regulator learners who, when compared to students with lower achievement, regulate their learning goals more specifically, use more learning strategies, and assess their achievement toward the goals more routinely. Self-regulation is a deep and intrinsic mechanism formed by an individual's conscious, intentional, and thoughtful behaviors that allows them to stop or do an activity (Garcia et al., 2018). In fact, self-regulated students are spontaneous, independent participants during the learning process, and metacognitively, they are active, with a large set of cognitive and metacognitive strategies they use while doing homework. Such students also have appropriate learning goals and the perseverance required to achieve them (Aghdar et al., 2020). Furthermore, students who have higher self-regulation have stronger beliefs about their abilities to succeed than those who have doubts about their abilities. Students who use higher levels of self-regulation during the learning process, attempt to connect new information to previous information, and make it meaningful in order to learn better. Furthermore, such students are engaged in the learning process and review their academic activities on a regular basis, which can lead to greater success and academic motivation.

The use of superficial learning strategies by students is related to positive and negative emotions as well as motivational factors. Negative emotions play no role in learning strategies, and such strategies are only influenced by positive and motivating factors (Bondarenko, 2017). The model proposed in this study is consistent with the control-value theory, which is based on an individual's assessment of control and value. Positive emotions promote deep learning, whereas negative emotions promote superficial learning. Thus, if students have sufficient motivational beliefs, they can deal with challenging issues and overcome frustration and despair, and if they are committed to academic activities, they can have an impact on their desired academic self-actualization. Students with higher levels of academic motivation can determine appropriate levels of self-actualization and self-regulation for themselves.

Such structures are beliefs that extend beyond the circumstances and direct their choices (Bahadori & Mesrabadi, 2018). In terms of academic activities, self-actualization and self-regulation have a stronger association with task consistency. When a student believes an activity is important, they will pursue it further. Furthermore, if students are positively motivated, they will be able to complete a task or achieve a goal.

Additionally, students who are more motivated during the learning process form a logical association with information, control the learning process, and while paving the ground for learning, can learn the courses better. Such students accept responsibility for their own learning (Urdan & Bruchmann, 2018). Knowing the importance of the teaching-learning process in their future careers and the efficient and effective performance of their academic responsibilities, such students gain a thorough understanding of their learning abilities and make effective use of all educational elements. Moreover, the finding showed that the classroom climate has a significant impact on students' learning and motivation. When students have a positive perception of their classroom climate, they perform better and have a positive perception of their learning; this can lead to increased positive motivation and emotions toward their learning.

Given that interaction between students and the educational process takes place at school and in the classroom, the classroom climate has a significant impact on increasing or decreasing learning level, motivation, and positive emotions. What distinguishes a favorable and unfavorable classroom climate is the student's understanding and perception of the classroom and climate (Alfred et al., 2019). A supportive classroom climate, classmates, and family climate all help to improve a student's perception, which in turn improves academic motivation. However, in a classroom climate where students feel unsupported, this creates a sense of non-involvement and reluctance in the students. As a result, when the classroom climate is supportive, students' academic motivation and positive emotions rise. The classroom is a social climate, and when students interact with other students their age, their talents, problems, and weaknesses are revealed, increased, or decreased.

One of the most important societal tasks of the educational system is to foster self-actualization in students. Self-actualization is defined as expressing oneself as a distinct individual (Akçay & Akyol, 2014). Self-awareness is required for self-actualization. Students should be educated about their abilities and talents in schools, high schools, and universities. They should know this important fact from the start of their

education that they can become a unique person and create a unique future for themselves. Given the significance of self-actualization, policymakers, planners, and educators should place a special emphasis on it and the factors that influence it. Teachers and instructors should develop and implement curricula, teaching methods, and evaluation methods based on the characteristics and behaviors of self-actualization. Curriculum planning should include converting students' potential abilities into qualitative, personal actions based on cognitive and emotional needs, and finally achieving self-actualization and independence of action, as well as facilitating comprehensive growth and achieving the ability of self-assessment and self-regulation.

The following were some of the study's limitations: The tool's limitations for measuring variables, which only included the use of self-report questionnaires. Given that the study was conducted in a small community when extrapolating the findings to other communities, caution is advised.

Conclusion

According to the results of the current study, academic self-actualization, classroom socio-psychological climate, and self-regulation had a positive effect on student academic motivation in the students. It is recommended that students' emotions in the learning climate, such as anxiety, pleasure, and anger, be underlined because when students are anxious, their learning quality suffers and they are unable to demonstrate their abilities effectively. Hence, the learning climate should minimize and control students' negative emotions such as anger, shame, and anxiety, while also encouraging students to experience positive emotions such as pleasure and hope. As a result, students' intrinsic motivation increases, and according to the findings, they experience positive emotions, rate the classroom climate as entertaining and desirable, and learn more pleasurably, resulting in increased academic motivation and academic significance.

Conflicts of Interest

No conflicts of interest declared.

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