

Research Article

Understanding Socioeconomic Differences in Academic Motivation: Future Time Perspective, Self-Regulation, and Instrumentality Beliefs

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The primary objective of this research is to examine the mediating roles of long-term self-regulation and perceptions of instrumentality in the relationship between Future Time Perspective (FTP) and academic achievement. The study also investigates the moderating effect of Socio-Economic Status (SES). The sample consisted of 572 third-year high school science majors selected through stratified sampling. Participants completed a comprehensive questionnaire that included the Future Time Perspective Scale (FTPS), the Adolescent Self-Regulatory Inventory (ASRI), and the Perceptions of Instrumentality (PI) Scale. SES was assessed using parental education and household income indices, and academic achievement was measured using mean scores in three core courses: physics, chemistry, and biology. The conceptual model, evaluated through structural equation modeling, demonstrated a good fit for both high- and low-SES groups. However, a Chi-square test of model fit indicated significant differences between the two groups, suggesting that their structural relationships were not identical. In both groups, value and speed were associated with academic achievement, while the effect of connectedness differed across groups. The findings showed that academic achievement in both groups was influenced by value through PI and by speed through long-term self-regulation. Connectedness also affected academic achievement in both groups, but only indirectly through long-term self-regulation. In the high-SES group, connectedness additionally had a direct effect on academic achievement and an indirect effect through PI. Notably, these direct and indirect effects were not statistically significant in the low-SES group.

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Introduction

There is broad agreement across several areas of psychology that adolescence is a pivotal period for the development of identity and for shaping students' futures. Research shows that variables related to time perception are associated with negative developmental outcomes, including delinquency, substance use, and unhealthy behaviors. Consequently, studies on students' perception of time have become a central focus in research on student motivation. In this context, scholars have found that adolescents' mental representations of the future are linked to more positive psychological and educational outcomes^{[1][2][3][4]}.

A number of studies^{[5][6]} support the motivational importance of future-oriented goals in educational settings. High school students differ markedly in their future time perspectives. FTP is a motivational–cognitive characteristic shaped through learning experiences in the family, school, and broader community^[7], and it carries meaningful motivational, cognitive, and behavioral consequences^[8].

Clear differences also appear in how students perceive the role of education in shaping their futures^{[9][10]}. Some students have a clear sense of how education influences their future lives and achievements, whereas others seem to overlook the significance of current educational efforts. This neglect may arise from placing greater psychological or temporal emphasis on the present—or even the past—rather than the future^[11].

Researchers have proposed several dimensions of FTP. De Volder and Lens^[12] argued that FTP includes cognitive and dynamic components. In a study of high school students, Husman and Shell^[13] identified four FTP dimensions: connectedness, speed, value, and extension. Reflecting the cognitive aspect of FTP, extension and connectedness concern individuals' preference for delays or intervals and their awareness of how present behaviors relate to future goals. Reflecting the dynamic aspect of FTP, value and speed refer to the importance assigned to goals and the way upcoming events are organized to achieve them.

Connectedness involves linking current activities to future objectives. Students with long-term FTP can more easily anticipate indicators of distant future outcomes and adjust their intentions and plans; they also seek information that helps them evaluate the significance of different time periods^[14]. Speed, first introduced by Gjesme^[15], refers to the perceived pace of imagined future events and one's perceived ability to manage them. Individuals with short-term FTP may struggle to organize future activities, leaving them feeling short on time and pressured by deadlines. Extension concerns the likelihood that

one's future plans and schemes will actually materialize; goals within an individual's time horizon tend to feel closer, clearer, and more important than those outside it^[16]. Valence refers to the importance placed on long-term goals and has also been described as delay discounting. The term valence was later replaced with value to better reflect the idea of prioritizing the future—particularly the willingness to sacrifice present rewards for future outcomes.

Several researchers have shown that significant differences in adolescents' time-attitude profiles across countries can predict variations in educational constructs^{[2][3][17]}. The literature widely agrees that FTP is not independent of community culture or the socialization process; rather, it assumes different forms across cultural contexts. For instance, Eren (2010), using a large sample of Turkish undergraduate students, examined the factor structure of FTP through exploratory and confirmatory factor analyses. He found that, instead of the four factors and 27 indicators commonly reported, only two factors—connectedness and value—with 14 indicators emerged in this population. He concluded that social, cultural, and socio-economic differences between North American and Turkish students may explain the observed differences in FTP structure. Afshari^[18] reported that among Iranian students, FTP is represented by only three components: speed, value, and connectedness. Similar findings across various countries indicate that substantial differences in adolescents' time-attitude profiles help account for differences in educational constructs^{[1][2][3]}.

Husman and Jonathan^[5] argue that FTP-related concepts follow a nested structure: broad, domain-general traits such as time perspective shape individuals' time perspectives within specific life domains (e.g., career, family, education), which then influence how they perceive the connection between future goals and present activities or learning content. This latter process is conceptualized in the literature as perceptions of instrumentality (PI). PI is a future-oriented evaluation of academic tasks, grounded in expectancy–value motivational models. These models suggest that greater foresight into the future enhances the motivational power of PI to pursue long-term goals through ongoing actions. Hilpert and Husman^[19] define PI as “the relationship between the successful accomplishment of current assignments and reaching a long-term future goal.” Students with long-term FTP can more readily recognize the link between current classroom activities and their distant goals, which in turn strengthens the perceived instrumentality of school tasks^{[20][21]}. Students' PI regarding a given task depends on both the task's characteristics and their mental representation of the future; their beliefs about how to complete a task or approximate a goal can act as tools for achieving future outcomes. The

better individuals can perceive the future consequences of their behavior, the more likely they are to see current actions as instrumental for attaining future goals.

To extend inquiry into how FTP exerts its influence, a key question must be addressed: How does FTP affect the adoption of adaptive learning strategies? The development of Theory of Mind, the emergence of future foresight, and the formation of personal future goals during adolescence shape how adaptive strategies are applied in the present. Numerous studies have shown that students who place greater importance on their future careers and education use more adaptive strategies and demonstrate stronger motivation to engage in academic tasks^{[11][22]}. Recent research suggests that self-regulation is a key mediator of academic achievement^[20]. Avci^[23] found that FTP can support delay of gratification and encourage the adoption of self-regulatory strategies aimed at future goals. Fryer, Ginns, and Walker^[22] argue that FTP has a strong direct effect on internal regulation and an indirect effect on learning behaviors—such as deep learning strategies—when mediated by progressive goals. Students' mental representations of the future may influence their academic achievement and their responses to learning challenges through self-regulation^[24]. Seginer^[25] conceptualizes FTP as composed of thinking, assessment, and action. Difficulty in sustaining focus on goal-directed activities and preference for immediate gratification may weaken self-regulation^[25].

Although goal orientation is central in all definitions of self-regulation^[26], most definitions do not incorporate the temporal dimension of goals and instead emphasize immediate or short-term aims. In childhood, self-regulation is largely tied to short-term goals; however, it grows increasingly oriented toward long-term conditions as individuals develop Theory of Mind, improve their understanding of organization, and learn to adapt their thoughts and behaviors to personal goals, norms, and contextual demands^[27]. Long-term self-regulation involves controlling impulses and directing efforts toward goals that unfold over extended periods, from weeks to years^[28]. Moilanen^[29] argues that most self-regulation research has focused on short-term forms and has overlooked essential elements of long-term self-regulation during adolescence. De Bilde, Vansteenkiste, and Lens^[8] have shown that FTP and self-regulation are correlated and that students who are more future-oriented can better guide their behavior to reach long-term goals. Because long-term self-regulation requires monitoring goals over extended time periods, it is expected that a long-term FTP will align with the use of long-term regulatory strategies.

FTP varies across individuals because people grow and learn in different contexts—families, schools, and communities. The relationship between SES and FTP can be examined from both thematic and non-thematic perspectives. SES shapes expectations that lead students to adopt different future goals, which, in turn, influence their perceptions of the instrumentality of academic assignments. It is also possible that students with high and low SES differ psychologically in FTP and future extension. Several researchers^{[27][29][30]} have shown that higher social and economic status enhances goal regulation (including motivation for success and willingness to extend goals into the future), as well as planning and structuring future time periods, and behavioral outcomes related to orientation, such as the tendency to delay gratification. For example, Mello and Swanson^[31] found that adolescents' expectations about the future vary according to the SES of their living environment. Some studies—but not all—have reported that individuals with higher SES outperform those with lower SES in future-oriented thinking^[32] (D'Alessio et al., 2003). Schmidt, Lahm, and Tremsdorf found that middle-class individuals, compared to lower-class peers, displayed a more extensive future orientation, a more optimistic view of the future, and stronger beliefs that realizing their hopes and fears depended on their own actions. Singh-Manoux & Marmot and Fuchs have shown that time perspective may serve as a mediator between SES and health. Heinonen et al. (2006) suggest that parents' educational level is associated with a present-fatalistic time perspective.

The present study aims to examine the relationships among these variables within a causal model. Its primary purpose is to investigate the mediating roles of perceptions of the instrumentality of learning assignments and long-term self-regulation in the relationships between FTP dimensions and academic achievement, and to determine the role of SES in the assumed relationships among variables (Fig. 1).

Based on the proposed conceptual model, which draws from foundational theories and empirical findings, the following hypotheses are proposed:

1. The model proposed for the relationships among FTP components demonstrates a good fit with academic achievement.
2. FTP influences academic achievement when mediated by long-term self-regulation.
3. FTP influences academic achievement when mediated by perceptions of the instrumentality of learning assignments.
4. High and low SES moderate the relationships among the variables.

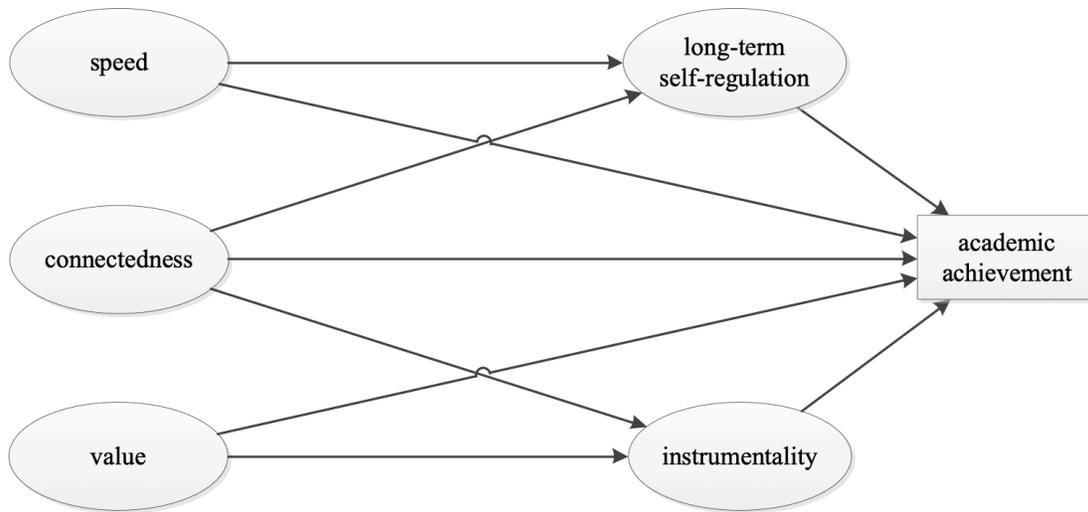


Figure 1. Conceptual model of research

Methodology

This is a non-experimental correlational research based on a structural model. Population is consisted of all third year high school students majoring in science in high schools of Karaj city. Sample population, selected through proportional allocation in stratified sampling, includes 572 (356 female and 216 male) students; our sample was selected according to the size of each of the four school districts in Karaj and the questionnaires were distributed accordingly. Karaj was meticulously chosen because it is known as the ‘little Iran’ and it represent a plethora of different ethnicities and social groups. And, Iran is a country which is grappling with issues like migration of educated people^[33], academic misconduct^{[34][35]} and a high rate of unemployment among educated people^[36]. All these can negatively affect a young student’s perception of FTP.

Instruments

Husman and Shell’s^[13] Future Time Perspective Scale (FTPS) includes 27 items which measure four dimensions, namely speed, value, connectedness, and extension. The questionnaire was scored by a 5-point Likert scale ranging from (1) highly disagree to (5) highly agree. A higher score in this scale denotes having a longer term FTP. Some questionnaire items are negative and coded reversely. Husman and

Shell^[13] have reported Cronbach's alpha 0.72, 0.72, 0.82, and 0.74 for internal consistency of speed, value, connectedness, and extension sub-scales, respectively.

Second order confirmatory factor analysis was performed according to the data collected through questionnaires which had two additional items in order to identify and verify FTP dimensions. The model produced goodness-of-fit indicated by GFI=0.91, AGFI=0.87, and RMSEA=0.04 which suggest good correlation of all items at first order but the extension component did not reach a significant level on FTP construct at second order analysis of factor loadings which, in turn, indicates FTP is recognized with only three dimensions of value, connectedness, and speed for Iranian students and thus extension was removed from analyses of the final model. Cronbach's alpha for internal consistency of speed, value, connectedness, and extension sub-scales was, respectively, 0.79, 0.54, 0.67, and 0.78.

Perceptions of Instrumentality (PI) Scale is a five item self-reporting scale developed by Miller, DeBacker, and Greene^[37] for measuring perceptions of instrumentality. Having performed explanatory factor analysis, Malka and Covington^[38] removed one item and reduced it to a four-item scale which we found useful and employed here. Participants' responses to each item were scored by a five point Likert scale ranging from (1) "not at all true of me" to (5) "very true of me". All items of this scale are positively scored. Miller, DeBacker, and Greene^[37] reported Cronbach's alpha=0.9 for this scale. Cronbach's alpha of this scale was 0.82 in this paper. Confirmatory factor analysis was performed to identify and verify measurement factors of PI construct and GFI=0.99, AGFI=0.97, and RMSEA=0.05 indices indicated model's goodness of fit.

Moilanen's Adolescent Self-Regulatory Inventory (ASRI) is a 36 item measure that evaluates self-regulation in five aspects (activate, monitor, maintain, inhibit, and adapt) and four dimensions (emotions, thoughts, attention, and behavior) and two time spaces (short term and long term). Scoring is based on a five point Likert scale ranging from (1) "not at all true of me" to (5) "very true of me". A higher score in this inventory denotes higher self-regulatory ability. Some items are negative and coded reversely. The highest limit of the age range in this inventory is 20 (adolescence). This inventory measures long term and short term self-regulation. Moilanen^[29] has reported Cronbach's alpha 0.75 and 0.80 and Dias, Castillo, and Moilanen^[39] reported 0.84 and 0.72 for short term and long term dimensions, respectively. Cronbach's alpha for short term and long term self-regulation subscales in this study was 0.87 and 0.84, respectively. Confirmatory factor analysis was conducted to identify and verify measurement factors of self-regulation construct and GFI=0.90, AGFI=0.84 and RMSEA=0.04 indices indicated model's goodness of fit with the two factor model.

Socio-Economic Status (SES) questionnaire: SES refers to the position of an individual within the economic stratified system and unequal distribution of wealth. By this way, each stratum is defined based on financial standards of living and usually by the level of income and wealth. SES was operationalized in a subjective method by measuring the indices for parents' level of education and family income. Family income was scored from 1 to 10 based on students' self-reports in 500K intervals. That is, the answers ranged from "1- Between 500K to 1 million Tomans" to "10- More than 5.5 Million Tomans" and Parents' average level of education was scored based on the number of years studied, and then students were divided into high and low SES groups according to the median cutoff point.

Academic achievement: Actual performance of an individual must be taken into account when measuring academic achievement, says Bandura, and actual performance occurs only if doing an assignment is of high value for the subjects and if they are highly motivated. Therefore, average scores of three main courses, namely physics, chemistry, and biology in the final exam of the year were taken to measure academic achievement of students.

Results

This paper examined the relationships between academic achievement and FTP, long term self-regulation, and perceptions of instrumentality (PI), and compared these relationships between high and low SES groups. In order to measure direct and indirect effects of FTP construct, PI, and long term self-regulation on academic achievement, a model was proposed based on existing theory and practice which included FTP components based on second order confirmatory factor analysis of FTP for our sample of Iranian students. The proposed model was tested by structural equation modeling for both high and low SES student groups.

To determine whether the data support the proposed model, different indices of fitness were utilized. Fitness indices for the proposed model, as shown in table 1, reveals that they are all within the acceptable range for both high and low SES student groups.

indices	Low SES	High SES
χ^2	281.12	303.45
df	112	105
p	P<0.01	P<0.01
χ^2/df	2.51	2.89
CFI	0.99	0.99
GFI	0.99	0.99
AGFI	0.96	0.96
RMSEA	0.04	0.06

Table 1. Fit indices of two models (low and high SES)

Although the rations of direct effect of connectedness on academic achievement and PI are not significant for the low SES student group, the proposed model of the study is acceptable if we examine the value of each index separately.

path	direct	indirect	total	Squared r
On academic achievement from:				0.29
value	0.23 [*]	0.06 ^{**}	0.29 ^{**}	
connectedness	0.14 [*]	0.09 ^{**}	0.22 ^{**}	
speed	-0.12 [*]	-0.09 ^{**}	-0.21 ^{**}	
instrumentality	0.13 [*]	-	0.13 [*]	
Long-term self-regulation	0.20 [*]	-	0.20 [*]	
On Long-term self-regulation from:				0.35
connectedness	0.28 [*]	-	0.28 [*]	
Speed	-0.44 [*]	-	-0.44 [*]	
On instrumentality from:				0.27
value	0.42 [*]	-	0.42 [*]	
connectedness	0.21 [*]	-	0.21 [*]	

Table 2. Squared r, standardized direct, indirect, and total effect on endogenous variables in high SES model

* $p < 0.05$, ** $p < 0.01$

As depicted in table 2, we can generally conclude that all regression weights of direct effect in high SES group are significant at $p < 0.05$. Direct effect of value is 0.42 on PI and 0.23 on academic achievement (both significant at $p < 0.05$). Direct effect of connectedness is 0.21 on PI, 0.28 on long term self-regulation, and 0.14 on academic achievement and significant at $p < 0.05$. Direct effect of speed is -0.44 on long term self-regulation and -0.12 on academic achievement and significant at $p < 0.05$. Direct effect of PI on academic achievement is 0.13 and significant at $p < 0.05$. Direct effect of long term self-regulation on academic achievement is 0.20 and significant at $p < 0.05$.

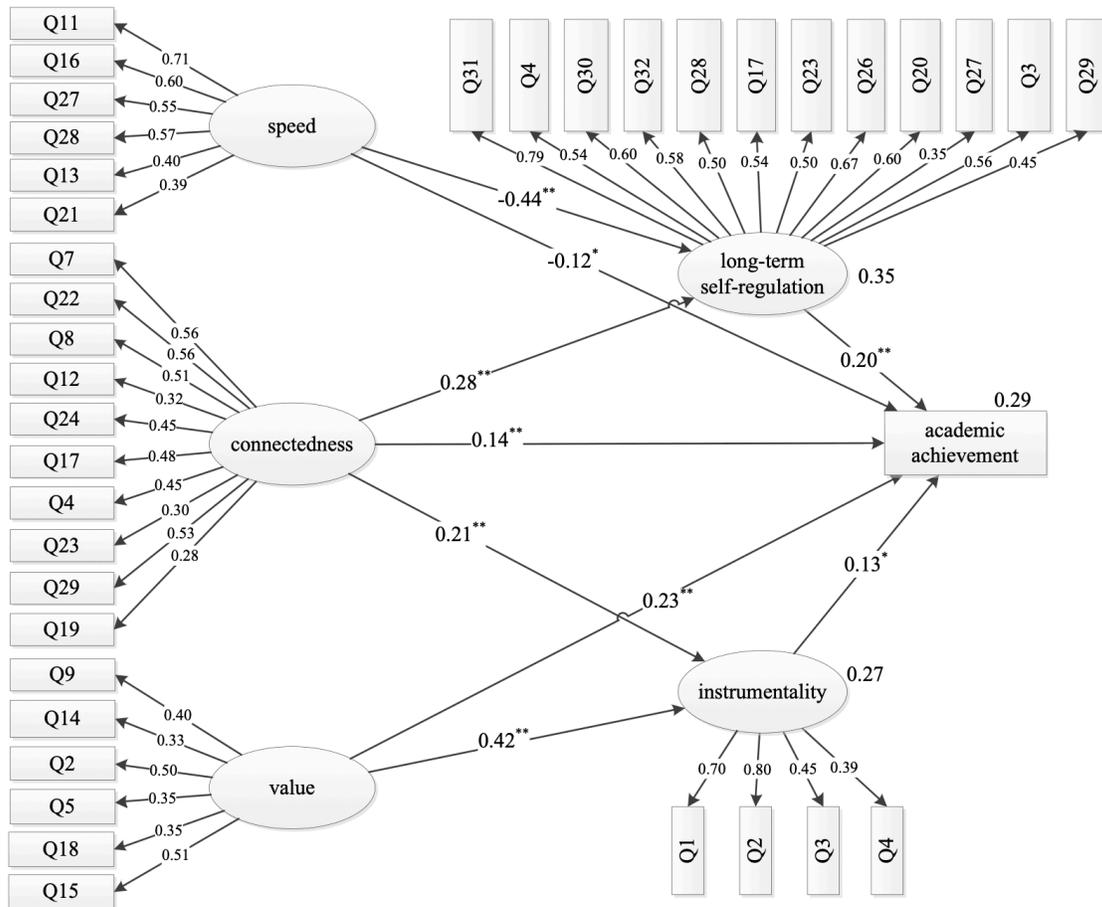


Figure 2. Output model in high SES group

Indirect effect of value on academic achievement for high SES group was 0.06 and significant at $p < 0.01$. As indirect effect of value is mediated through PI, one can say PI of learning assignments acts as a mediator between value component of FTP and academic achievement. Indirect effect of connectedness on academic achievement is 0.09 and significant at $p < 0.01$. As such indirect effect is mediated through long term self-regulation and PI, one can say long term self-regulation and PI act as mediator between connectedness component of FTP and academic achievement. Table 2 also shows that indirect effect of speed on academic achievement is 0.09 and significant at $p < 0.01$. As such indirect effect is mediated through long term self-regulation, one can say long term self-regulation acts as a mediator between speed component of FTP and academic achievement. Variable variance for academic achievement, long term self-regulation, and PI was 29%, 35%, and 27%, respectively, in high SES group.

path	direct	indirect	total	Squared r
On academic achievement from:				0.26
value	0.28*	0.06*	0.34*	
connectedness	-0.06	0.05*	-0.01	
speed	-0.23*	-0.05*	-0.28*	
instrumentality	0.17*	-	0.17*	
Long-term self-regulation	0.14*	-	0.14*	
On Long-term self-regulation from:				0.25
connectedness	0.28*	-	0.28*	
Speed	-0.38*	-	-0.38*	
On instrumentality from:				0.12
value	0.35*	-	0.35*	
connectedness	0.05	-	0.05	

Table 3. Squared r, standardized direct, indirect, and total effect on endogenous variables in low SES model

* $p < 0.05$, ** $p < 0.01$

All direct effect ratios in low SES group were significant at $p < 0.05$ except for direct effect of value on academic achievement and PI. Direct effect of value was 0.35 on PI and 0.28 on academic achievement and significant at $p < 0.05$. Direct effect of connectedness on long term self-regulation was 0.28 and significant at $p < 0.05$, but direct effect of connectedness was 0.05 on PI and -0.06 on academic achievement which did not reach a significant level. Direct effect of speed on was -0.38 on long term self-regulation and -0.23 on academic achievement and significant at $p < 0.05$. Direct effect of PI on academic achievement was 0.17 and significant at $p < 0.05$. Direct effect of long term self-regulation on academic achievement was 0.14 and significant at $p < 0.05$.

Conclusion

The effect of FTP on academic achievement can be compared to two edges of the same sword. As predicting current and future goals depends on the cultural, social, and SES contexts of an individual's life, long term FTP may not result in lower motivation for learning activities or even giving up school in low SES students who do not find any relationships between their future goals and instrumentality of learning assignments.

Results of this paper also indicate that all fit indices of the proposed model were acceptable in both high and low SES groups. Goodness-of-fit of the proposed model is confirmed despite the fact that the path of the direct effect of connectedness on PI and academic achievement in low SES group was not significant. Results indicated that academic achievement in both high and low SES groups is affected by speed component of FTP directly and also indirectly, if mediated through self-regulation, and it is also affected by value component of FTP directly and also indirectly, if mediated through PI. Although in high SES group the connectedness component of FTP directly affects long term self-regulation, PI and academic achievement, and indirectly affects academic achievement if mediated through long term self-regulation and PI, this component in low SES group only directly affects long term self-regulation and its direct effects on PI, and academic achievement were not significant. Considering the insignificant direct effect of connectedness on academic achievement and PI in low SES group, we can conclude that the effect of connectedness on academic achievement in this group is only possible if mediated through long term self-regulation.

In line with the findings of this paper, many other studies^{[40][17][41][2]} have shown that there is a significant relationship between FTP and academic achievement, and having a deeper understanding of future time is associated with academic achievement. Beneficial effects of long term FTP on learning and academic achievement is based on a quantitative viewpoint to motivation in expectancy-value theories. In such theories, it is assumed that higher motivation of students with lengthier FTP is explained by the fact that they perceive higher instrumentality for current assignments with regard to achieving future goals (cognitive dimension) and believe that doing current assignments leads them to more valuable future goals (dynamic dimension). But Simons, Dewitte, and Lens^[24] state that FTP may not only increase motivation and perseverance of students in doing their assignments, but also may affect how they engage in current activities and how it leads to using more adaptive strategies. The model proposed in this paper supports both assumptions and shows that, in addition to PI of learning assignments, FTP

affects the quality of student behaviors and long term self-regulatory strategies taken to achieve future goals. Proposed model of the study indicates that long term FTP affects PI of learning assignments, increases motivation in terms of quantity, and provides enough motivational energy to accomplish learning assignments through providing the possibility and tendency to understand the relationships between current assignments and valuable future goals, and also through preventing reduction of future goal value. Moreover, the speed component of FTP allows learners to plan and use long term self-regulatory strategies by providing the opportunity to look into future and predict the requirements for achieving future goals and moderate intermediary goals; by providing the ground for distinguishing how current actions are related to future goals, the connectedness component of FTP allows students to set their priorities, choose appropriate behaviors, and delay gratification to achieve future goals. The proposed model, in general, shows that FTP, whether quantitatively or through PI and whether qualitatively or through long term self-regulation, affects academic achievement of students.

According to Carver and Scheier^[42] and Hall and Fong^[43], time and control are nuclear concepts of understanding self-regulation. Barkley^[28] suggests that perception of time is a key component of self-regulation. The ability to predict and plan for upcoming events is a key component of speed and self-regulation concepts. Self-regulation inability is the result of lower ability to monitor orientation of current actions toward future goals and it seems that the structure of psychological time and the ability to look into far future are the basis of perceived speed and long term self-regulation. The more a person can look into future, the better he will be able to predict the requirements of future goals and assignments and prepare for dealing with them. Children are constrained to facts which are close in time but adolescents can plan for near and far events and take action on that basis. If we compare FTP to old fashioned Tetris video games, lengthier FTP will look like a longer game screen and the time for rotating the shapes into an appropriate position will be more at hand. People with short term FTP will have little time to manage when they encounter events and assignment requirements and hence their long term self-regulatory ability is undermined.

One of the most common concepts in self-regulation definitions is the existence of one or several feedback loops in learning^[42] by which the students may review the effectiveness of teaching methodologies or their own strategies, and respond to that feedback by making concealed changes in perceptions of themselves or in their behavior. These actions, with regard to long term self-regulation, require that the students would be able to break up their ultimate goals into sub-goals and understand the relationships among actions and requirements of assignments and the final goal.

Bandura (1997) states that most human behaviors, especially goal-oriented ones, are adjusted by means of intentionality for achieving valuable goals. Goals associated with higher education usually rest in a further future. Far goals usually have less valence and the farther a goal is placed, the less its motivational effect will be. Even when all conditions are appropriate, a high school student aimed to become a physician should at least wait and work hard for seven years to reach that goal and this far distance is usually an inhibitive factor in choosing educational goals. In line with the findings of this study, Hilpert et al.^[20] showed that students with long term FTP can easily understand the relationship between their current classroom activities and farther future (instrumentality) and, thus, instrumentality of current learning and academic achievement is increased. Malka and Covington^[38] and Tabachnik, Miller and Relyea^[30] also showed that students' positive understanding of instrumentality is related with achievements in classroom learning.

Furthermore, we can consider FTP as expectancies and future-related actions as a transformational capital of adolescence. Lerner et al. (2010) and Scales et al. (2006) have identified a wide range of capitals which are positively related to academic performance; personal values and beliefs about education and future are examples of such capitals. Nurmi (2005) states that future-oriented adolescents believe they have enough agency in their life path and they can take decisions which maximize the chances to achieve the goals they have set for themselves. Still, we must remember that perceptions of instrumentality at the same time requires to understand how long term goals are related to current progressive assignments. Therefore, we can suggest despite the fact that the student values future which are also desirable enough to motivate him, he or she may not be able to understand how current assignments are related to such goals. It seems that how long term goals are related to current assignments is more a matter of instructions and verbal persuasions used by teachers in the classroom and parents too.

Statements and Declarations

Funding

There was no funding.

Conflict of Interests

There are no conflict of interests/competing interests in this study.

Ethics Approval and Consent to Participate

This study was conducted in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments. Ethical approval was obtained from the Research Ethics Committee of the University of Tehran prior to data collection. Participation in the study was voluntary, and informed consent was obtained from all participants. For participants under the age of 18, written informed consent was also obtained from their parents or legal guardians. Confidentiality and anonymity of responses were assured, and participants were informed of their right to withdraw from the study at any time without penalty.

Clinical trial number

Not applicable.

Consent for Publication

All authors consent to the publication of this manuscript. No identifiable personal data of participants are presented in this paper.

Data Availability

The data that support the findings of this study are available from Karaj Education Bureau but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of Karaj Education Bureau.

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