Future Time Perspective, Beliefs, Strategies and Academic Achievement: Examining the Role of Socioeconomic Status

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Abstract

The primary objective of this research is to investigate the intermediary function of long-term self-regulation and perceptions of instrumentality in the correlation between Future Time Perspective (FTP) and academic achievement. Additionally, the study aims to explore the moderating impact of Socio-Economic Status (SES). The sample comprised 572 third-year high school students majoring in Science, selected through a meticulous stratified sampling process. Participants completed a comprehensive questionnaire encompassing the Future Time Perspective Scale (FTPS), Adolescent Self-Regulatory Inventory (ASRI), and Perceptions of Instrumentality (PI) Scale. SES was assessed in relation to parental education and household income indices, while academic achievement was gauged based on mean scores in three core courses: physics, chemistry, and biology. The study's conceptual model, as assessed through structural equation modeling, demonstrated a good fit for both high and low SES in the student cohorts. However, an analysis of the Chi-square for model fit revealed significant differences between the two groups, indicating non-identical structural relationships. Notably, in both groups, value and speed exhibited impacts on academic achievement, while the influence of connectedness varied between the groups. The research findings revealed that academic achievement in both groups was influenced by value through PI and by speed through long-term self-regulation. Connectedness affected academic achievement in both groups, but its impact was indirect through long-term self-regulation. Furthermore, in the high SES group, connectedness had a direct effect on academic achievement and also an indirect effect through PI. Interestingly, these direct and indirect effects were not statistically significant in the low SES group.

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Introduction

There is a widespread consensus in various domains of psychology that adolescence represents a critical turning point for the evolution of existing identity and the future of students. Research indicates variables related to the perception of time are correlated with negative evolutionary outcomes, such as delinquency, alcohol and drug use, and health-related behaviors. Studies on students' perception of time have now become one of the major constructs of research on student motivation, and, in this sense, researchers have shown that students' mental representation of the future in late adolescence is correlated with more desirable psychological and educational outcomes (Carvalho, 2015; Andretta, Worrell, & Mello, 2014; Alansari, et al., 2013; Lee, et al., 2012).

Several studies (Husman & Jonathan, 2016; Mello et al., 2009) substantiate the motivational significance of future goals in educational contexts. Notably, high school students exhibit variations concerning their future time perspectives. Future time perspective (FTP) is a motivational-cognitive attribute cultivated through learning experiences in diverse settings, including family, school, and community (Mello & Worrell, 2015), with consequential motivational, cognitive, and behavioral outcomes (De Bilde, Vansteenkiste, & Lens, 2011).

Distinct differences emerge among students in their perception of the role of education in shaping their future and achievements (Shirzadifard et al., 2018; Shirzadifard et al., 2020). While some students possess a lucid understanding of the impact of education on their future lives and accomplishments, others seem to disregard any consequential role for current educational endeavors in their future. This disregard may stem from an overemphasis on the present (or even the past) in terms of their psychological and temporal perspectives (Peetsma & Van der Veen, 2011).

Researchers have proposed various dimensions for future time perspective. De Volder and Lens (1982) believe that FTP has cognitive and dynamic dimensions. In a study on high school students, Husman and Shell (2008) characterized four FTP dimensions, namely connectedness, speed, value, and extension. In line with the cognitive aspect of FTP, extension and connectedness are determined by the tendency of the individual toward respite or intervals and awareness of the individual about the relationship of the current behaviors to targeted goals. In line with the dynamic dimension of FTP proposed by De Volder and Lens (1982), value and speed, on the other hand, refer to how different values are attributed to goals and how the upcoming events are managed and organized in order to accomplish these goals. Connectedness is the ability to connect current activities to future goals. Students with long term FTPs can more easily predict the existing indicators for a farther future and reorder their behavioral intentions and plans; they also seek information by which they can judge the value of different time periods (Lens, Paixao, Herrera, & Grobler, 2012). Speed was first introduced by Gjesme (1979) referring to the perception of how quickly the events in one's imagined future advance in perceptual time space and the humans' perceived ability to manage upcoming events. People with short term FTP may not be able to organize future activities, thus they always feel short of time and to be under the pressure of deadlines. The extent to which one's future schemes and plans will be actually realized in future is called extension. Goals within the individual's

time horizon are generally perceived closer, clearer, and more important than the ones out of his regular time space (Tucker, Vuchinich, & Rippens, 2002). Valence refers to the degree of importance given to goals achievable in long term. Concept of valence has also been defined as delay discounting. The term valence has been replaced by value in order to reflect valorizing the future and, specially, sacrificing the present for the future.

Various researchers have indicated that significant differences in adolescent time attitude profiles in several countries could predict differences in educational constructs (Andretta, Worrell, & Mello, 2014; Alansari, et al, 2013; Buhl, & Linder, 2009). It is widely agreed in the literature that FTP is not, generally, separated from the community culture and, specifically, from the socialization process. This indicates that FTP assumes different forms in different cultures. For example, Eren (2010), using a large sample, including undergraduate students from Turkey, investigated the factor structure of FTP by performing explanatory and confirmatory factor analysis. He observed that there are not 4 factors with 27 indicators in this community, but rather only 2 factors (connectedness and value) with 14 indicators. He concluded that social, cultural, and socio-economic differences among North American and Turkish students may have an influential role in explaining the observed differences in FTP structure of the students. Afshari (2016) has showed that among Iranian students, FTP is only identified with three components, namely speed, value, and connectedness. Various researchers in several countries have indicated that significant differences in adolescent time attitude profiles account for the differences in educational constructs (Carvalho,2015; Andretta, Worrell, & Mello, 2014; Alansari, et al, 2013).

Husman and Jonathan (2016) believe that FTP-related concepts are generally framed in a nested fashion: domain-general traits like time perspective contribute to individual's time perspective within specific life domains (e.g., career, family or education), which influence the individual's perception of how future goals are related to present activities and learning content (i.e., calculus) in specific life domains. The latter is conceptualized as perceptions of instrumentality (PI) of assignments in the literature. Perceptions of instrumentality is future-oriented assessment of assignments developed through expectancy-value motivational models. Expectancy-value motivational theories suggest that the more foresight into future is, the more PI motivational ability will be in order to pursue those goals through current action. Hilpert and Husman (2012) define PI as "the relationship between successful accomplishment of current assignments and reaching a long term future goal". By long term FTP, students may easily recognize the relationship between existing classroom activities and long term future (instrumentality) and thus, the existing learning instrumentality may increase at school (Hilpert, et al 2012; Husman & Lens, 1999). Students' PI of a specific assignment task for future depends on the features of that task and students' mental representation of future and perceptions of how to accomplish a task or approximate a goal may serve as a tool to reach future goals. The more an individual is able to perceive the future outcomes of his or her behavior, the more likely it will be for him/her to perceive the instrumentality of current action for achieving future goals.

In order to extend the study to include FTP mechanisms for exerting influence, a critical question has to be addressed: How FTP affects taking adaptive learning strategies. Formation of Theory of Mind (ToM), finding future foresight, and developing personal future goals during adolescence affect how adaptive strategies are taken up in the present. Various studies have indicated that students with higher concern for their future career and education use more adaptive strategies and have higher motivation to engage in educational activities (Carvalho, 2015; Fryer, Ginns, & Walker, 2014). Recent studies indicate that self-regulation is a key mediator for academic achievement (Hilpert, et al 2012). Avci (2013)

showed that FTP may delay gratification and actuate accepting self-regulatory strategies for achieving future goals. Fryer, Ginns and Walker (2014) argue that FTP has a strong effect directly on internal regulation and indirectly on learning behaviors, such as deep learning strategies, if mediated through progressive goals. Students' mental representation of future may affect their academic achievement and their attempts to overcome learning difficulties through mediation of self-regulation (Simons, Dewitte, & Lens, 2004). For Seginer (2009), FTP is consisted of thinking, assessment, and action. Having lower ability to keep an eye on current orientation toward goals and performing activities which bring immediate gratification may attenuate self-regulation (Seginer, 2009).

Although students' concentration on goals is a common characteristic of all definitions of self-regulation (Bandura, 1991), most of them do not account for the temporal dimension of goals and are mainly concerned with immediate and short-term goals. Self-regulation, in childhood, is mainly based on short term goals, but it becomes more inclusive and accounts for longer term conditions as the person grows up, forms theory of mind and finds a better understanding of organization, his/her thinking performance, and adaption of behaviors to personal goals, norms and contextual criteria (Demetriou, 2000). Long term self-regulation includes controlling impulses or orienting attempts toward goals within longer time spaces, including several weeks or even years (Barkley, 1997). Moilanen (2007) believes most studies on self-regulation are mainly focused on short term self-regulation and have not considered basic elements of long term self-regulation in adolescence. De Bilde, Vansteenkiste, and Lens (2011) have shown that FTP and self-regulation are correlated and students concerned with their future goals and rewards are able to better orient their behaviors in order to achieve their goals. As long term self-regulation requires tracking goals in a longer period of time, it is expected that the ability to regulate goal structures in a longer time space, i.e. a long term FTP, correlate with utilizing long term self-regulatory strategies.

FTP is different from person to person since people educate and experience in different settings: families, schools, communities, etc. We can examine the relationship between SES and FTP from thematic and non-thematic perspectives. SES proper expectancies result in students determining different goals for their future which, in turn, affects perceptions of instrumentality of learning assignments. It is also possible that students with high and low SES be psychologically different in terms of FTP and future extension. Various researchers (Demetriou, 2000; Moilanen, 2007; Tabachnik, Miller, & Relyea, 2008) have shown that better social and economic status affects regulation of goals (motivation for success and extending goals into future), planning and structuring future time periods, and future behavioral outcomes of orientation (like tendency to delay gratification). For example, Mello and Swanson (2007) have shown that expectancies of adolescents from future may differ according to the SES of their living place. Some research, not all, suggest that people with higher SES outperform those with lower SES in reflecting on future (Corral-Verdugo, Fraijo-Sing, & Pinheiro, 2006; D'Alessio, et al, 2003). Schmidt, Lahm and Tremsdorf showed that middle class (as compared to lower class) people had a more extensive future orientation, perceived a more promising future, and were stronger in believing that realization of their hopes and fears depends on themselves. Singh-Manoux & Marmot and Fuchs have shown that time perspective is a potential mediator in the relationship between SES and health. Heinonen et al. (2006) suggest that parents' level of education is related to present-fatalistic time perspective.

The present study aims to examine the relationships among the aforementioned variables within the framework of a casual model. The main purpose of the study is to examine the mediating role of perceptions of 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).

Taking into account the proposed conceptual model, which, per se, is derived from fundamental theories and experimental findings, the following hypotheses are introduced:

1. *The model proposed for relationships of FTP components produces good fit with academic achievement.*
2. *FTP affects academic achievement if mediated through long term self-regulation.*
3. *FTP affects academic achievement if mediated through perceptions of instrumentality of learning assignments.*
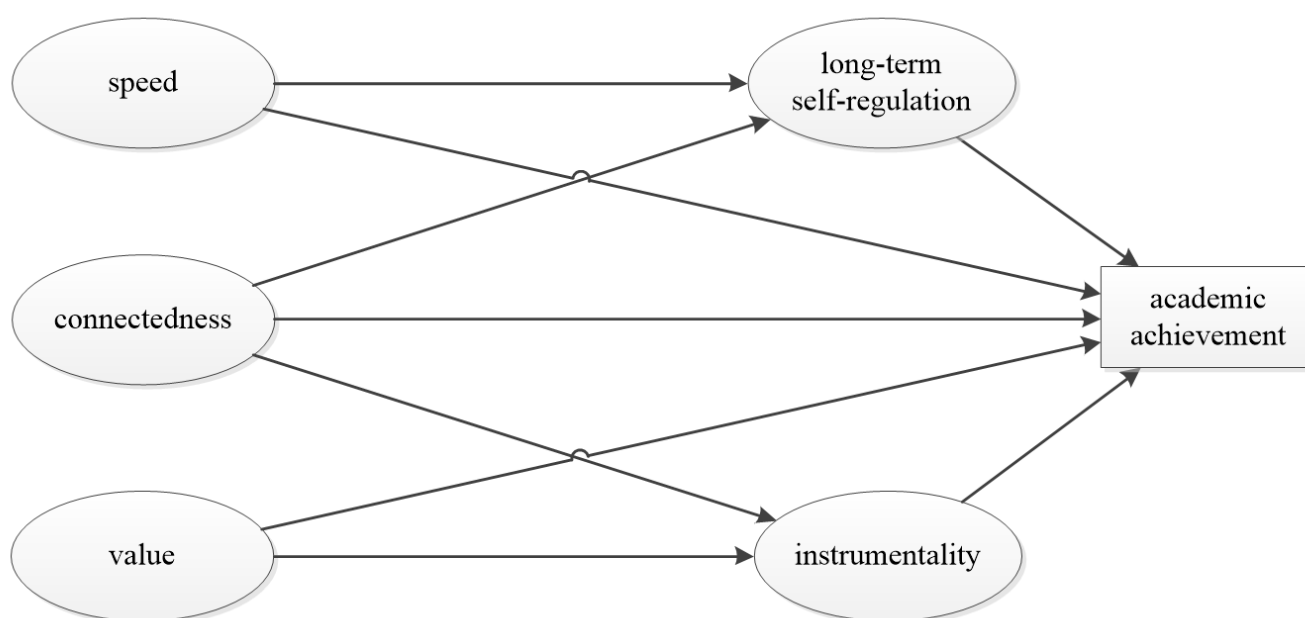4. *High and low SES has a moderating role in the relationships among variables.*

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 in 2015-2016 academic years. 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 (Sarfi et al., 2023), academic misconduct (Shahghasemi & Akhavan, 2015; Shahghasemi & Shirzadifard, 2024)

and a high rate of unemployment among educated people (Salehi-Isfahani, 2011). All these can negatively affect a young student's perception of FTP.

Instruments

Husman and Shell's (2008) 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 (2008) 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 (1999) for measuring perceptions of instrumentality. Having performed explanatory factor analysis, Malka and Covington (2005) 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 (1999) 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 Liker 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 (2007) has reported Cronbach's alpha 0.75 and 0.80 and Dias, Castillo, and Moilanen (2014) 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.

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

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

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.

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

path	direct	indirect	total	Squared r
On academic achievement from:				
value	0.23^*	0.06^{**}	0.29^{**}	
connectedness	0.14^*	0.09^{**}	0.22^{**}	0.29
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:				
connectedness	0.28^*	-	0.28^*	0.35
Speed	-0.44^*	-	-0.44^*	
On instrumentality from:				
value	0.42^*	-	0.42^*	0.27
connectedness	0.21^*	-	0.21^*	

* p< 0.05, ** p< 0.01

As depicted in table 2, we can generally conclude that all regression weighs 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.
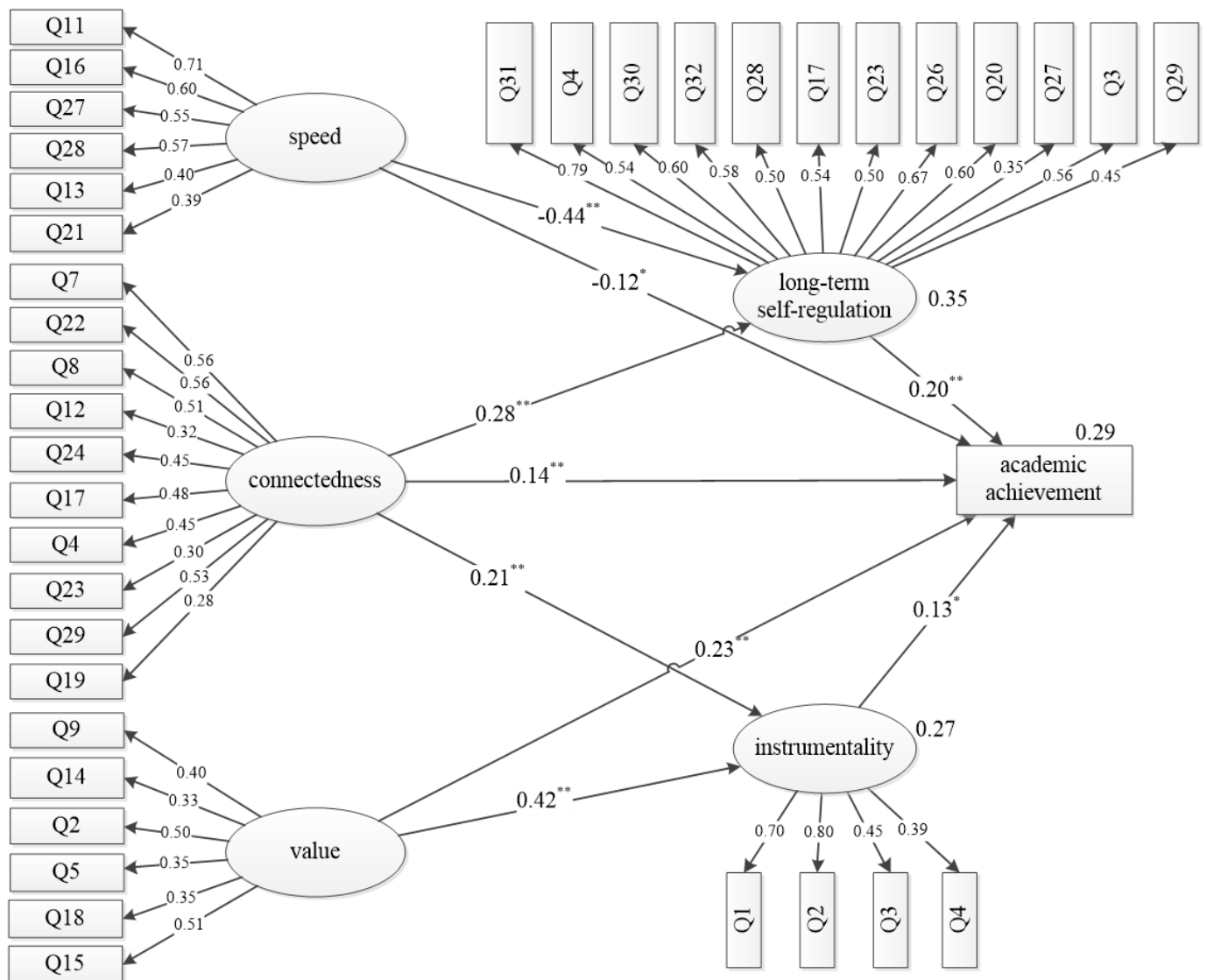
Figure 2. Output model in high SES group

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.

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

path	direct	indirect	total	Squared r
On academic achievement from:				
value	0.28*	0.06*	0.34*	
connectedness	-0.06	0.05*	-0.01	0.26
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:				
connectedness	0.28*	-	0.28*	0.25
Speed	-0.38*	-	-0.38*	
On instrumentality from:				
value	0.35*	-	0.35*	0.12
connectedness	0.05	-	0.05	

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

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 $p<0.05$.

As shown in table 3, indirect effect of value on academic achievement in low SES group was 0.058 and significant at $p<0.05$. As indirect effect of value is mediated through PI, one can say PI of learning assignments acts as a mediator between value and academic achievement. Indirect effect of connectedness on academic achievement was 0.048 and significant at $p<0.05$ in low SES group. As such indirect effect is mediated through long term self-regulation and PI and the direct effect of connectedness on PI has not reached a significant level, one can say long term self-regulation acts as a mediator between connectedness and academic achievement in low SES group. Indirect effect of speed on academic achievement was -0.054 and significant at $p<0.05$ in low SES group. 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 26%, 25%, and 12%, respectively, in low SES group.
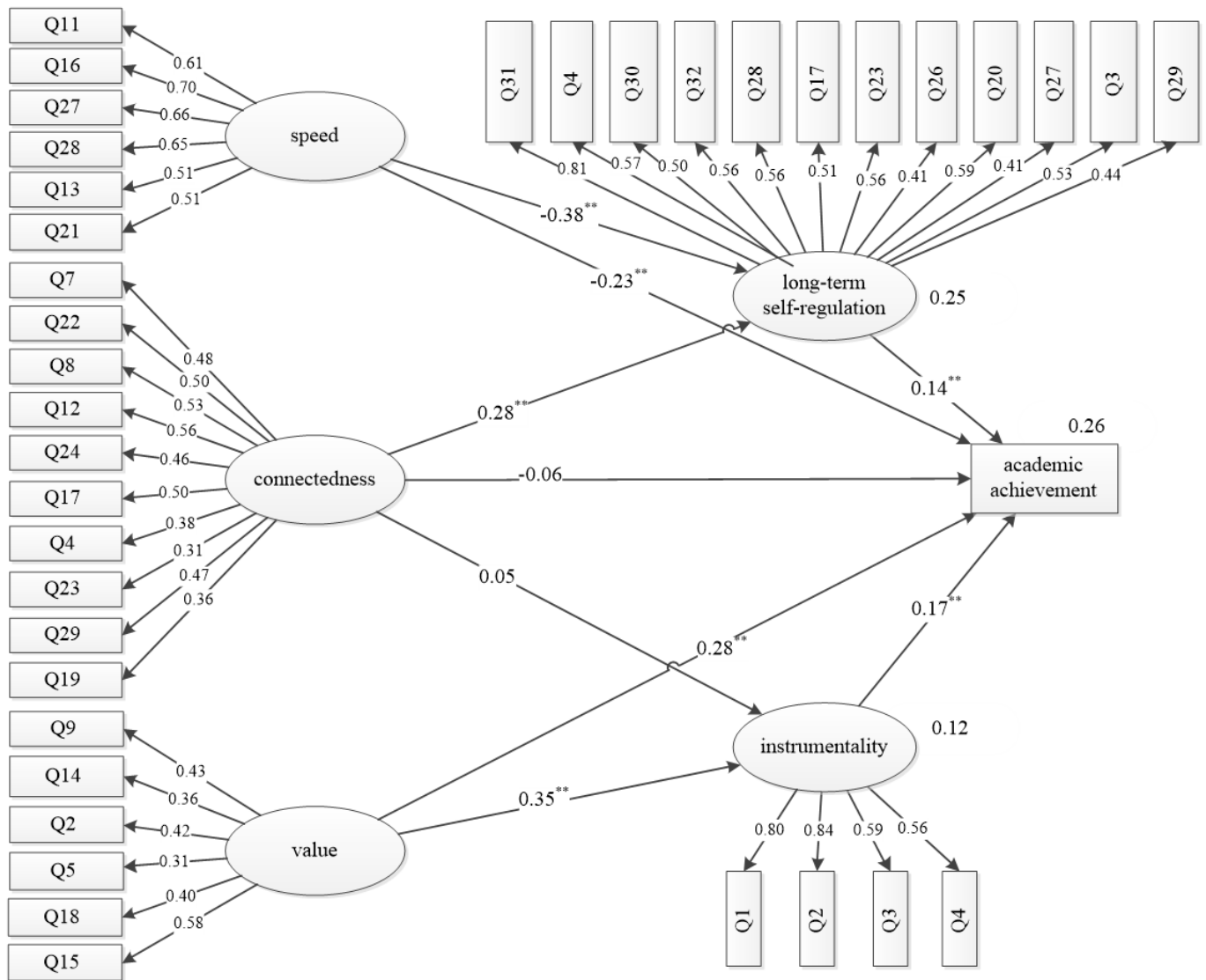
Figure 3. Output model in low SES group

In order to examine the differences of the proposed model in each group, multiple-group path analysis was conducted. In doing so, the hypothesis of equality (invariability) of a model is tested across multiple groups. The method proposed by Meyers, Gamst and Guarino (2016) was applied for this purpose. Taking an approach similar to variance analysis, in this method the researcher first examines the total difference of goodness of fit in both groups and in case any difference exists, the researcher starts to individually compare each parameter across both groups. In the first step, a model is fit with free ratios for both groups. The result of fit for unlimited models is the total of two ratios: one for high SES group and one for low SES group. In the second step, an equal (or null) model is prepared. According to the null hypothesis, this model imposes statistical constraints on estimations of ratios so that the values calculated for each group may be as similar as possible to each other. The result of the second step is a model in which the ratio pair of low SES and high SES groups are assumed equal. The final step is comparing the unconstrained (free) model to the constrained (null) model. As each model has its own goodness-of-fit index, we can find the chi square of their difference by deducting both chi square values from each other. Significance of the chi square value would indicate the general difference of model fit in both

groups. Findings of this paper indicate that the proposed model was generally different in high and low SES groups. Chi square of difference of model fit in both groups (^{2}=27.09, P<0.01) was significant at p<0.01. We can compare both ratios to find the origin of the difference, if the difference of model fit indices in both groups is significant.

If table 2 and table 3 are compared, we can see that the direct effect of connectedness on PI in low SES group is 0.046 and has not reached a significant level, but this effect is 0.209 and statistically significant in high SES group. Difference of the direct effect of this path in both groups is significant at p<0.05. Furthermore, the direct effect of connectedness on academic achievement in low SES group is -0.056 and not significant, but this effect is 0.138 and significant in high SES group. Difference of the direct effect of this path in both groups is significant at p<0.05. Therefore, as we can see, only the direct effect of connectedness component of FTP on PI and the direct effect of connectedness component of FTP on academic achievement has significant difference between the two groups, thus accounting for the difference of the model fit in both groups.

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 (Horstmanshof & Zimitat, 2007; Buhl, & Linder, 2009; Worrell, Mello, & Buhl, 2013; Andretta, Worrell, & Mello, 2014) 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 (2004) 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 (2002) and Hall and Fong (2007), time and control are nuclear concepts of understanding self-regulation. Barkley (1997) 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 (Carver, & Scheier, 2002) 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. (2012) 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 (2005) and Tabachnik, Miller and Relyea (2008) 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.

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