

Future time perspective and group performance among students

Importance of student engagement

Role of student engagement and group cohesion

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Abstract

Purpose – The objective of this study is to understand the mediating role of student engagement between future time perspective and group task performance. In addition, the study examines the interaction effect of group cohesion task with student engagement on group performance.

Design/methodology/approach – Data were collected from 170 (a total of 34 groups of five members each) business management students for three consecutive months. To analyze the data, multi-level modeling was carried out.

Findings – The results of the three-wave multi-level analysis indicate support for the hypotheses and suggest that future time perspective affects group performance through student engagement. Moreover, group cohesion interacts with student engagement to predict group task performance.

Research limitations/implications – The findings show how the application of engagement theory can help in understanding the relationship between two distant variables, namely, future time perspective and group performance.

Practical implications – The educators are encouraged to engage students for facilitating the positive impact of future time perspective on group task performance. The findings also imply that the students with future orientation perform well and thus, the educators may need to teach students to have futuristic perspective.

Originality/value – This study in one of its kinds to test the mediating role of student engagement between future time perspective and group task performance as well as the interaction effect of group cohesion task with student engagement on group performance at both the individual and group level over a period of time.

Keywords Group cohesion, Student engagement, Group performance, Time perspective

Paper type Research paper

Student engagement is increasingly becoming popular among scholars primarily because of its positive consequences for students and class (Bakker *et al.*, 2015). Engaged students invest their personal energies in the tasks aimed at achieving learning objectives. Such students are vigorous for, dedicated toward and absorbed in their studies. When they work as a cohesive group for a common goal, the productivity of the group sees an impressive growth (Ofstad and Brunner, 2013). These improved results can be explained by the synergetic effect of the work groups wherein, cohesion between group members multiplies their performance (Ferrazzi, 2012).

Not surprisingly, leaders have shifted their focus from recruiting self-oriented to group-orientated students (Groysberg, 2014). Therefore, the research that helps the teachers understand how team members' future time perspective could be an important determinant of group performance is of paramount importance (Edmondson, 2012). Few studies have pointed out the significance of forming groups based on students' future orientation to avoid conflicts and enhance group cohesion. For example, students with future orientation think deeper, show more persistency and perform better (Horstmanshof and Zimitat, 2007).



Unfortunately, research in higher educational institutes that serve as a primary source of prospective employees for industries is still at preliminary stage. Nevertheless, this study attempts to examine the relationship of workgroup performance and its antecedents in academia. In particular, the objective is two-fold. One purpose is to test the direct relationships among future time perspective, student engagement, group cohesion and group performance. Another purpose is to examine the intervening role of student engagement and group cohesion between future time perspective and group performance.

Literature review

According to [Katz and Kahn \(1978\)](#), the behaviors that represent attachment between “self” and “role” connote role embracement. Researchers have worked mainly on two types of role embracement, namely, personal and work engagement. Personal engagement is a psychological state wherein, individuals discretionarily attach themselves physically, emotionally and cognitively into their role ([Kahn, 1990](#)). Later on, [Schaufeli et al. \(2002\)](#) conceptualized and operationalized the construct within an organized setting in which the role is well defined and termed it as work engagement and this definition was used in several studies in India ([Gupta, 2018, 2019](#); [Gupta et al., 2019, 2018](#); [Gupta and Shaheen, 2018](#); [Gupta and Shukla, 2018](#)). It refers to the extent to which employees are vigorous, dedicated and absorbed in their work roles. They also conceptualized work engagement in the context of higher education as student engagement. It is defined as the extent to which students are vigorous, dedicated and absorbed in their studies. Subsequently, [Christian et al. \(2011\)](#) viewed work engagement as a sub-construct of personal engagement. In that, vigor, dedication and absorption occur at physical, emotional and cognitive levels, respectively. Being a “state-like” construct ([Kahu, 2013](#)), engagement is affected by a personality variable such as future time perspective and affects group performance variables.

Group performance

Group performance refers to the result as well as the procedure by which groups attain a common goal ([Levine and Moreland, 1990](#)). In the educational context, it is defined as the quantity and quality of classroom interaction ([Paydon, 2012](#)). Scholars in the past such as [Meslec and Curşeu \(2013\)](#) and [Clark et al. \(2014\)](#) argued that group performance involves synergetic effect which essentially means that the group performance cannot be simply the arithmetic sum of the performance of the individuals because of the emotional, cognitive and physical support extended by the team members to each other. Therefore, to identify reasons behind great teams, it is important to know the level of engagement of the team members in their task and the quality of their inter-personal (social) interaction.

Future time perspective and group performance

[Zimbardo et al.](#) were the first to conceptualize time perspective in terms of their orientation toward past, present and future ([Zimbardo et al., 1997](#)). According to this theory, people have chronic orientations toward past, present or future, and they tend to exhibit certain characteristics, whereas past time perspective does not allow people to break the bondage of old memories and move forward, present time perspective encourages people to celebrate their present irrespective of their past and without worries of future. Interestingly, future time perspective makes people sacrifice their today for a better tomorrow, plans for contingencies and follows an appealing strategy. In educational psychology, it is the future orientation that is seen in conjunction to desired educational outcomes ([McInerney, 2004](#)).

Researchers in the past, such as [Seijts \(1998\)](#), have given rationales for linking future time perspective with performance conceptualized this relationship. According to it, compared to

low-achieving students, the high-achieving students not only attribute a higher valence to future goals but also grasp the long term consequences of behavioral acts well. Using Raynor's (1969) clarity on Atkinson and Feather's (1966) achievement motivation theory that achievement-oriented individuals are more motivated in contingent situations, Brown and Jones (2004) posited and found that future orientation positively predicted academic performance.

Epel *et al.* (1999) did a study on homeless individuals and found that those who were high on future time perspective reported gaining benefits from their situation compared to those who were high on present time perspective. Not surprisingly, subsequent research on positive psychology was focused mainly on the future time perspective dimension of time perspective with positive behavioral outcomes. It is imperative that students with future time perspective put in more effort and are comparatively more persistent in their classroom activities than those who persistently think about past or present. Prior studies provide some evidence of the positive relationship between future time perspective and the performance of school at large (Volder and Lens, 1982). For example, Shell and Husman (2001) studied the relationship between future time perspective and academic grades using college student sample and found a positive link between the two. More recently, Mohammed and Nadkarni (2011) conducted a study to examine the relationship between employees' future time perspective and group performance using 299 employees in 71 groups in a business process outsourcing (BPO) organization in India. However, their results were against their expectation as future time perspective was not significantly related to group performance. According to the authors, it could be because in BPOs, "rapid task accomplishment and conformity to client demands tend to be rewarded more than setting distal future goals" (p. 501). While there are recent studies such as Kooij *et al.* (2017) that examine the role of future time perspective in enhancing job performance, more studies are required in the context of academia. Apparently, the inconsistency in the previous findings due to contextual differences encourages us to state the following hypothesis:

H1. Future time perspective has a positive influence on group performance.

Mediating role of student engagement

Student engagement and group performance. Carini *et al.* (2006) argued that student engagement and group performance are linked to each other. According to them, skills and dispositions that are essential to live in a productive and satisfying manner after college are inherent features of an engaged student. It means students engaged in educationally productive activities in college develop habits of improving their performance. They tested this conceptualization using a large sample of 1,058 students of different educational institutes. The results indicated that student engagement was positively related to task performance. However, the observations were self-reports thereby, limiting interpretation about any causal relationship.

To overcome these shortcomings, Bakker *et al.* (2015) performed a weekly diary study using 45 first-year psychology students. The students were asked to complete a questionnaire comprising student engagement over three weeks (twice a week). Results revealed that student engagement is a key factor in predicting students' academic performance. A recent review of student engagement and group performance in pharmacy education by Ofstad and Brunner (2013) reaffirmed the importance of engaging students to enhance the performance of the group. According to Karabenick and Collins-Eaglin (1997), individual student engagement would positively lead to group performance when the reward is collective. Under condition of common goal and collective rewards, engaged students tend to make greater use of cognitive strategies, including organization and elaboration. Though there are several papers in the literature that examined student engagement and individual's

performance such as [Phan et al. \(2016\)](#) and [Whitley and Dietz \(2018\)](#), more studies are required to focus on the group aspect of the performance. Therefore, we state the following hypothesis:

H2. Student engagement has a positive influence on group performance.

Student engagement and future time perspective. Scholars such as [Brown and Jones \(2004\)](#) have posited that student time perspective plays a key role in determining student engagement and performance. It is argued that in a bid to achieve their goals, students who are high in future time perspective tend to become cognitively vigilant, emotionally sensitive and physically active in the task. Some scholars argued that future time perspective facilitates student engagement.

For instance, [Horstmanshof and Zimitat \(2007\)](#) used a sample of 347 first-year undergraduate students at an Australian university. The results indicated that future orientation is a significant predictor of the psychological and behavioral elements of student engagement. Recently, [Stahl and Patrick \(2011\)](#) conducted a study using 226 American adults to understand the relationship between future time perspective and physical activity. They found a significant positive relationship between future time perspective and engagement in physical activity.

H3. Future time perspective has a positive influence on student engagement.

The aforesaid discussion suggests that the relationship between future time perspective and group performance is distant. While achievement motivation theory provides the reasons for assuming that future time perspective would predict group performance, the possibility of passing the positive effect of future time perspective to group performance through student engagement cannot be ignored. Logically, future-oriented students are likely to invest their physical, emotional and cognitive energies to achieve higher performance for a bright future.

Technically, following the above discussion which provides conceptual and empirical reasons to believe that (1) future time perspective is positively related to student engagement, (2) student engagement is positively related to group performance and (3) future time perspective is positively related to group performance, there is a possibility of student engagement acting as a mediator between future time perspective and group performance ([Baron and Kenny, 1986](#)).

H4. Student engagement mediates the relationship between future time perspective and group performance.

The role of group cohesion task

Group cohesion task refers to the tendency of group members to coordinate to work in a united manner in the pursuit of common goals and the satisfaction of members' affective needs ([William, 2006](#)). Group cohesion is a two-dimensional construct consisting of task cohesion and social cohesion. In that, task cohesion is the extent to which members are motivated to achieve their group's goals, whereas social cohesion is the degree of group members' motivation to develop and extend social relationships among them ([Forrester and Tashchian, 2006](#)).

Group cohesion task and student engagement. The self-role relationship that forms the basis of student engagement is a complex process consisting of sub-processes including "role-socialization" (see [Katz and Kahn, 1978](#)). The concept of role has been proposed as the major means for linking the individual and group levels of research and theory. In that, each person (also called focal person) is linked to some set of other members by virtue of the functional requirements of the system based on the other members' (also called role-set members). A group consists of a number of role-set, one for each focal person. In particular,

the process is as follows: In “role-sending”, members of the role-sets send role expectations for the focal person to the focal person to influence his/her behavior. The role expectations are received with greater or lesser distortion in “role-receiving”. The focal person acts by complying or non-complying with expectations in “role-making”. Thereafter, the members evaluate person’s behavior in light of expectations they had. This one cycle is called as an “episode” and the moment it ends, the next one starts. The focal person carries his/her old episode cycle which at the time of socialization overlaps with the new one and cohesion of the group increases (Katz and Kahn, 1978). This theoretical understanding was reaffirmed by Pekrun and Linnenbrink-Garcia (2012) by arguing that group activities help students improve their social skills and this interaction with others enhances their engagement levels.

Few studies in the past have tested the relationship between student engagement and group cohesion. For example, an experiment-based study by Lee Tiernan and Grudin (2001) was conducted with an objective to find the causal relationship between student engagement and group cohesion. The findings revealed that using group exercises can improve student engagement. Subsequently, Little *et al.* (2006) did a study on online interaction using nursing students as the sample. Their study findings indicated that students favor shared means of communication such as, shared whiteboards and applications to achieve a goal and find these shared means as points of personal engagement. So, we state the following hypothesis:

H5. Group cohesion task has a positive influence on student engagement.

Group cohesion and group performance. Lee and Farh (2004) argued that working in groups facilitates interactions among the group members that lead to the development of synergy. This synergy is because of group-efficacy and is greater than the self-efficacy of all the group members put together. It results in the improvement of overall group performance. To test their argument, Lee and Farh examined 45 project groups of Hong Kong university undergraduate students and found that interactions among group members led to increased group cohesion and enhanced performance.

Subsequently, Forrester and Tashchian (2006) carried out a longitudinal study over a period of two years using a sample of 52 undergraduate student groups. The objective was to understand the impact of the two-factor group cohesion construct on group effectiveness. It was discovered that only social cohesion was significantly related to group effectiveness. Their findings contradicted the finding of Zaccaro and Lowe (1988) who conducted an experiment using American students found that task cohesion and not interpersonal cohesion positively predicted performance. Owing to the inconsistent results in the past, it is important to state the following hypothesis:

H6. Group cohesion task has a positive influence on group performance.

As discussed above, group cohesion task has a positive influence on both student engagement and group performance. Also, student engagement has a positive influence on group performance. In summary, the positive effect of student engagement on group performance is likely to be more in the presence of higher group cohesion task than when it is low because if the group works as a unit for a common goal, the group members would get regular support and communication from each other. This regular support from and interaction with each other would motivate the members to invest their personal energies, bring synergy and outperform.

On the other hand, lower group cohesion task is likely to result into communication gaps and lack of support from each other. As a consequence, the group members are likely to be hesitant in investing their personal energies for achieving a common goal. Indeed, the type of causal relationships among student engagement, group cohesion and group performance suggest that group cohesion may buffer the relationship between student engagement and

group performance such that high level of group cohesion would lead to the strengthening of this relationship. Conversely, the low level of group cohesion would weaken the relationship. Thus, we can state the following hypothesis:

- H7. Group cohesion task interacts with student engagement to affect group performance. The positive relationship between student engagement and performance will be stronger when group cohesion is high (vs low).

Method

Procedure and participants

Data were collected using a convenient sample of 34 groups of five students each ($N = 170$). The study used multi-wave research design. The students were pursuing their business management course at a large university in India. The university offers one of the largest full-time management programs in India. A typical classroom consists of students that come from different parts of the country and represents “mini-India” in terms of gender, region and religion. The whole data collection exercise was completed within three months. The students were asked to form groups consisting of five members each in the beginning of the course. The members in each of these groups were chosen at random to ensure that each group represents its classroom. They were allowed to socialize with each other in the first two months of the course. The data collection was done in the beginning of the (1) third month (time T1), (2) fourth month (time T2) and (3) fifth month (time T3), thereby totaling to three times of the number of students. Every time, students were asked to perform a different group activity within 40 min relating to the business plan followed by questionnaire distribution and filling. Since the activities were linked to class participation marks, the attendance at all the three occasions for the selected 34 groups was 100 percent. All the questionnaires were filled completely in all respect (response rate = 100 percent). Refer [Figure 1](#) for the hypothesized model.

The sample had an average age of 18.45 ± 1.27 years with 41.2 percent of them being female students. Most of the students had studied Arts (35.3 percent) in their higher secondary followed by Commerce (32.9 percent) and Science (31.8 percent). Region wise, most of them were from North (39.4 percent) followed by an equal number of students from central and southern regions (19.4 percent), west Indian (14.1 percent) and East (7.6 percent).

Measures

Future time perspective was measured using 13-item self-report short scale of [Keough et al. \(1999\)](#). The shorter version was preferred because it was validated on a student sample. All

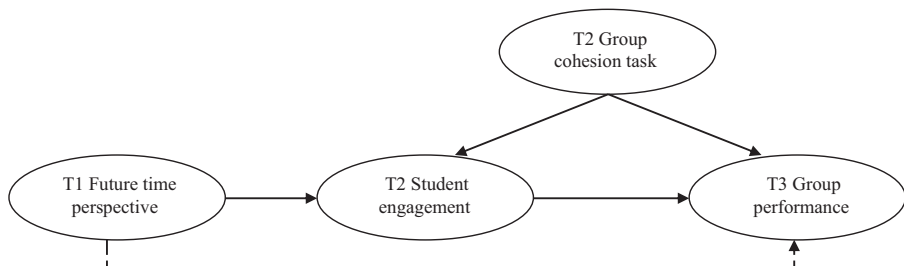


Figure 1.
The hypothesized model

the team members were asked to fill the self-report questionnaire. Since time perspective is dispositional in nature, the team members were asked only once at time T1 to fill the questionnaire. A sample item is “thinking about the future is pleasant to me”. The responses were taken on a 5-point Likert scale (1 = “strongly disagree” and 5 = “strongly agree”).

Student engagement was assessed with 17-item student version scale of engagement of [Schaufeli et al. \(2002\)](#). All the team members were asked to fill the questionnaire at time T1, T2 and T3. The responses were taken on a 5-point Likert scale (1 = “strongly disagree” and 5 = “strongly agree”).

Group cohesion task was captured using [Forrester and Tashchain’s \(2006\)](#) four-item group cohesion task scale originated from the work of [Carless and De Paola \(2000\)](#). Perception of all the team members about cohesion of their group was asked at time T1, T2 and T3. Average of their scores for each item was calculated for data analysis. A sample item is “our team is united in trying to reach its goals for performance”. The responses were taken on a 5-point Likert scale (1 = “strongly disagree” and 5 = “strongly agree”).

Group performance was measured based on the grades awarded by the faculty member to a particular group project. It is the most popular way of measuring group performance ([Lee and Farh, 2004](#)). The group projects submitted by all the teams were evaluated after the class hours. The response of the faculty member was taken on a 5-point Likert scale (1 = “poor performance” and 5 = “excellent performance”).

Variables including age and gender were controlled as the previous studies suggest that there could be a possible impact of the change in these variables on engagement levels ([Elmore and Huebner, 2010](#)).

Data analyses

The data collected for future time perspective and student engagement was at the person level whereas that for group cohesion task and group performance was at the group level. For such data, where two levels are involved, multi-level analysis is preferred over ordinary least squares regression analysis ([Snijders and Bosker, 1999](#)). To test the aforementioned hypotheses, we used grand-mean centered independent variables suggested by [Hox \(2002\)](#). Also, intra-class correlation was calculated to ensure that sufficient amount of variance is present at the between-group level.

We tested [Hypothesis 2](#) in three steps. First, a null model was tested with only intercept for group performance at time 3. Second, we added control variables to the null model and termed it Model 1. Third, we added student engagement at time 2 to the previous model and termed it Model 2.

Since both future time perspective and student engagement are individual level variables, we conducted a simple linear regression between them to test [Hypothesis 3](#). For this, we used SPSS 20 software.

Test for mediation

We tested [Hypothesis 4](#) using MLwiN 2.36 software in various steps as suggested by [Kenny et al. \(2003\)](#). Step 1 comprised testing null model or intercept-only model for group performance at time 3. Step 2 comprised testing Model 1 that had control variables along with future time perspective in addition to the null model. Step 3 comprised testing Model 2 that had student engagement at time 2 in addition to Model 1. Here, Step 2 also tests [Hypothesis 1](#) in Model 1.

Test for interaction effect

In order to test [Hypothesis 7](#), the authors tested two models along with the null model. In Model 1, we tested the effect of control variables along with student engagement on group

performance at time 3. In Model 2, the authors added the interaction term (student engagement \times group cohesion task) to the previous model. Since the test for interaction also requires pre-testing of direct relationships between student engagement at time 2, group cohesion task at time 2 and group performance at time 3, [Hypothesis 5](#) and [6](#) need to be tested first. [Hypothesis 5](#) and [6](#) were tested using SPSS 20 by running simple linear regression and [Hypothesis 7](#) using MLwiN 2.36 software.

Results

Variables such as age and gender were controlled. Reliability was measured using Cronbach's alpha values. All the reliability coefficients were found to be greater than or equal to the threshold value ($\alpha = 0.70$). Also, it was ensured that all the constructs are reasonably associated with each other by calculating Pearson bi-variate correlation coefficients as shown in [Table I](#).

The relationship between T2 student engagement and T3 group performance was found to be significant. The results indicated a significant positive impact of T2 student engagement on T3 group performance ($\gamma = 0.27$, $t(168) = 3.58$, $p < 0.001$) and significant amount of variance explained ($R^2 = 0.07$, $p < 0.001$) by T2 student engagement in T3 group performance. It supports our [Hypothesis 3](#) that T2 student engagement has a positive impact on T3 group performance. Similarly, the authors tested [Hypothesis 5](#) and [6](#). In that, it was found that T2 group cohesion task had a significant and positive impact on T2 student engagement ($\gamma = 0.36$, $t(168) = 4.97$, $p < 0.001$) and explained significant variance ($R^2 = 0.13$, $p < 0.001$). The results support [Hypothesis 5](#) and [6](#) that the group cohesion task has a positive impact on student engagement and group performance, respectively.

We tested rest of the hypotheses using multi-level modeling as they had group level dependent variable. The intra-class correlation for T3 group performance was found to be moderate (20 percent), adequate to analyze the data at two levels ([Muthén, 1997](#); [Kreft and de Leeuw, 1998](#); [Stapleton, 2006](#)).

For [Hypothesis 2](#), it is clear from [Table II](#) that intercept had significant beta values whereas control variables had insignificant path coefficients in all the three models. Null model had a model fit of $-2 \times \log = 395.52$ which did not improve significantly in Model 1 ($\Delta -2 \times \log = 3.93$, n.s.). However, when we introduced T2 student engagement in the previous model, the model fit increased significantly ($\Delta -2 \times \log = 11.02$, $p < 0.01$). Also, T2 student engagement predicted T3 group performance significantly ($\gamma = 0.41$, $p < 0.01$) indicating support for our [Hypothesis 2](#).

For [Hypothesis 4](#), Model 1 in [Table III](#) shows a significant impact of future time perspective on T3 group performance ($\gamma = 0.42$, $p < 0.001$) in the absence of T2 student engagement. This result indicates support for [Hypothesis 1](#). Next, on introduction of T2 student engagement (see Model 2 in [Table III](#)), the direct relationship reduced significantly ($\gamma = 0.31$, $p < 0.05$). Also, the model fit increased significantly ($\Delta -2 \times \log = 5.26$, $p < 0.05$). These results indicate that T2 student engagement fully mediates the relationship between future time perspective and T3 group performance.

For [Hypothesis 7](#), Model 1 in [Table IV](#) indicates significant impact of T2 student engagement on T3 group performance ($\gamma = 0.41$, $p < 0.001$). However, on inclusion of the interaction term (T2 student engagement \times T2 group cohesion task), this impact reduced to become insignificant ($\gamma = -0.32$, n.s.). Also, the model fit increased significantly ($\Delta -2 \times \log = 14.03$, $p < 0.001$). These findings show that compared to student engagement alone, it is the interaction of group cohesion with student engagement that yields superior group performance. Also, the interaction graph in [Figure 2](#) clearly shows that there is a stronger positive association indicated by steeper

	M	SD	TP_T1	SE_T1	GC_T1	GP_T1	SE_T2	GC_T2	GP_T2	SE_T3	GC_T3	GP_T3
TP_T1	3.81	0.48	<i>0.75</i>									
SE_T1	3.90	0.50	0.64**	0.83								
GC_T1	3.88	0.72	0.46**	0.54**	0.70							
GP_T1	3.81	0.91	0.54**	0.38**	0.39**	-						
SE_T2	3.85	0.47	0.37**	0.66**	0.27**	0.15	0.84					
GC_T2	3.84	0.83	0.24**	0.22**	0.25**	0.09	0.36**	7.5				
GP_T2	3.68	0.84	0.40**	0.36**	0.33**	0.53**	0.30**	0.44**	-			
SE_T3	3.80	0.56	0.35**	0.42**	0.21**	0.09	0.63**	0.65**	0.32**	0.87		
GC_T3	3.91	0.74	0.22**	0.22**	0.31**	0.10	0.38**	0.96**	0.47**	0.60**	0.70	
GP_T3	3.83	0.80	0.29**	0.25**	0.24**	0.33**	0.27**	0.31**	0.38**	0.22**	0.36**	-

Note(s): ** $p < 0.01$; values in italic face represent Cronbach's alpha values; TP = time perspective; SE = student engagement; GC = group cohesion; GP = group cohesion task; GP = group performance; T1 = first occasion; T2 = second occasion; T3 = third occasion

Table I.
Correlation coefficients and Cronbach's alpha values ($N = 170$)

slope between T2 student engagement and T3 group performance when T2 group cohesion task is high. Conversely, there is a weak positive association indicated by flatter slope between T2 student engagement and T3 group performance when T2 group cohesion task is low.

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Table II.
Multi-level estimates of models with group performance (GP_T3) as dependent variable

Variable	Null model		Model 1		Model 2	
	γ	SE	β	SE	γ	SE
Intercept	3.829***	0.082	3.829***	0.083	3.829***	0.077
Gender			-0.121	0.119	-0.14	0.116
Age			0.09	0.054	0.092	0.052
SE_T2					0.407***	0.119
-2 × log		395.519		391.59		380.558
Δ -2 × log				3.929		11.032**
df				2		1
Level 1 intercept variance	0.521	0.062	0.491	0.06	0.472	0.057
Level 2 intercept variance	0.124	0.056	0.139	0.058	0.106	0.05

Note(s): * $p < 0.01$; ** $p < 0.001$

Table III.
Estimates of models for mediation by student engagement between future time perspective (TP_T1) and group performance (GP_T3)

Variable	Model 1		Model 2	
	γ	SE	γ	SE
Intercept	3.829***	0.078	3.829***	0.074
Gender	-0.121	0.115	-0.134	0.114
Age	0.09	0.052	0.091	0.051
TP_T1	0.415***	0.118	0.312*	0.125
SE_T2			0.249*	0.126
-2 × log		379.697		374.44
Δ -2 × log		15.822		5.257*
df		1		1
Level 1 intercept variance	0.467	0.057	0.46	0.056
Level 2 intercept variance	0.112	0.051	0.095	0.047

Note(s): * $p < 0.05$; *** $p < 0.001$

Table IV.
Test for interaction effect (SE_T2 × GC_T2) on group performance (GP_T3)

Variable	Model 1			Model 2		
	γ	SE	z	γ	SE	z
Intercept	3.829***	0.077	49.7	3.829***	0.076	50.4
Gender	-0.14	0.116	-1.21	-0.159	0.111	-1.43
Age	0.092	0.052	1.77	0.098*	0.05	1.96
SE_T2	0.407***	0.119	3.42	-0.323	0.547	-0.59
GC_T2				-0.31	0.523	-0.59
SE_T2 × GC_T2				0.148	0.133	1.11
-2 × log		380.558			366.531	
Δ -2 × log		14.961***			14.027***	
df					1	
Level 1 intercept variance	0.472	0.057		0.428	0.052	
Level 2 intercept variance	0.106	0.05		0.111	0.049	

Note(s): * $p < 0.05$; *** $p < 0.001$

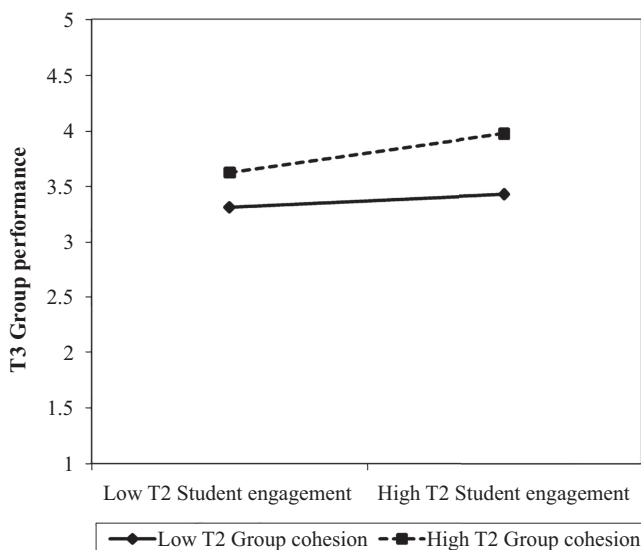


Figure 2. Interaction effect between student engagement and group cohesion in predicting group performance

Discussion

The objective of our study was two-fold. The first aim was to investigate the mediating role of student engagement in the future time perspective – group performance relationship. The second aim was to examine the effect of interaction term (T2 student engagement with T2 group cohesion task) on the relationship between student engagement and group performance. Our finding relating to the presence of full mediation by student engagement highlights the importance of attaching self with the task to enhance the overall group performance. Furthermore, the results also indicate that the group performance is also likely to be higher if engaged individual students work cohesively to achieve a common goal.

Prior studies show inconsistent results with regards to the relationship between future time perspective and group performance. Unlike the findings of [Mohammed and Nadkarni \(2011\)](#) that the relationship between future time perspective and group performance are not significantly related, our study suggests that future time perspective has a positive and significant influence on group performance. These longitudinal results confirm the cross-sectional findings of the study by [Shell and Husman \(2001\)](#). Also, the justification by Mohammed and Nadkarni does not hold good in our study as our research was also done under rapid task accomplishment conditions. The possible reason for the contradictory finding could be that our study shows student engagement mediates this relationship, which Mohammed and Nadkarni did not test. This finding augments [Atkinson and Feather's \(1966\)](#) achievement motivation theory by suggesting that under contingent situations, activity in this study, the future time perspective positively predicts group performance. The present study broadens the understanding of this relationship to group level as against the study by [Brown and Jones \(2004\)](#) that was examined at the individual level.

The present study results corroborate with the results of [Carini et al. \(2006\)](#) and generalize the findings of [Bakker et al. \(2015\)](#) that student engagement has a positive influence on group performance in the present context. The authors of this study find a positive and

significant relationship between the two variables which provides empirical evidence to [Karabenick and Collins-Eaglin's \(1997\)](#) argument that collective goals would make students engage to perform well.

Unlike aforesaid relationships, there was limited research for explaining the future time perspective–student engagement relationship. The study done by [Stahl and Patrick \(2011\)](#) examined and found the positive association of future time perspective on only the physical dimension of student engagement. The present study augments their argument to the extent that future time perspective is a positive and significant predictor of overall student engagement as well. Previously, [Horstmanshof and Zimitat \(2007\)](#) had also tested this relationship and found similar results but this study confirms the existence of causal relationship using longitudinal study design.

Unlike the study by [Forrester and Tashchian \(2006\)](#) which did not find a significant impact of group cohesion task on group performance, this study reaffirms the results of [Zaccaro and Lowe \(1988\)](#) that group cohesion task significantly and positively predicts group performance. Also, this study's results were in line with the experimental study results of [LeeTiernan and Grudin \(2001\)](#) that there is a causal relationship between student engagement and group cohesion. In addition, the current study discovers the interactive effect of group cohesion in the student engagement–group performance relationship.

To make students adapt to the group assignments in the industry, educators are encouraged to conduct group projects in the class. Frequent engagement through these assignments can enable students align their individual long-term goals with the common goal of the group which is to achieve the learning outcomes of the group exercises as also suggested by [Perry and Dickens \(1987\)](#). The synergetic effect of group exercises is expected to multiply their group performance in the classroom as well as in the industry. Also, continuous feedback from the teachers and peers can help students formulate clearer long-term career goals ([Horstmanshof and Zimitat, 2007](#)).

Since the findings of the present study suggest that group cohesion and engagement have positive impact on student performance, educators are encouraged to use pedagogies that are more group task based and engaging. Educational institutions may like to give greater emphasis on training the faculty members for creating such an environment in the class that encourages both group cohesion and engagement. As the results of this study indicate that group activities do enhance performance of individuals, the management of higher educational institutions may decide on giving higher weightage to group-based projects in the overall evaluation of students' performance. It is likely to help students meet the needs of the industry needs of working in groups ([Watch, 2016](#)).

Limitations

Though we took steps to reduce common method bias by taking composite score of all the group members' rating about their perception about the group cohesion and evaluating group performance on the basis of scores reported by teacher, time perspective and student engagement were still self-report measures. However, we argue that prior studies involving these constructs relied on self-reporting primarily because of the involvement of "self" in such constructs. Similarly, although some academic score was allocated to the activity to increase seriousness, there is possibility of bias from the students' side in rating.

The study was a longitudinal study but used one month difference for data collection as against a typical norm of at least six months gap. The reason was the involvement of student engagement which is a state-like construct and which is likely to vary even between two consecutive days. On the contrary, future time perspective is a trait-like construct. Such

constructs may also change if the duration is in years because the individuals' traits also tend to vary in the long term. Therefore, the choice of period might not have posed any threat to our results.

The student sample may not reflect on the existence of the same relationships in the corporate world because of the lack of realism. Nevertheless, our results shed light on how student engagement and group cohesion can help individuals high on future time perspective improve the group performance in executing the tasks related to future planning.

Conclusion

Despite several studies on the student engagement–group performance relationship, very few studies are longitudinal or multi-level thereby limiting causal interpretations. Our three-wave multi-level study confirms the presence of causal relationship between the two at both the individual and group level. Also, this relationship is positively affected in the presence of cohesiveness in the group. Consequently, teachers in the business studies may take measures to engage the group members in a better manner in a particular task to ultimately enhance their group's overall performance. So, the students who are high on future time perspective tend to do well in the groups when the task itself or the group members provide sufficient external motivation to channelize their personal energy in an appropriate manner.

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