Achievement Goals Theory: Evidence from College Students in Pakistan

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Relationship among goal orientation, study strategies and academic achievement was explored in a university setting on 144 students of post-graduate classes through Motivated Learning Strategies Questionnaire (Pintrich, Smith, Garcia, & McKeachi, 1991). Results supported the traditional findings in the western researches on revised achievement goal theory including greater and significant use of study strategies when students have predominantly learning goals rather than performance goals. More specifically, learning goals facilitated all study strategies, and in interaction with performance goals strengthened elaboration and meta-cognitive study strategies as well. Students of applied sciences had more learning orientation whereas those of pure sciences had greater performance orientation. Overall, discipline; pure, social, applied sciences, explained a larger variance in explaining Grade Point Average (GPA) of the students than their academic goals or study strategies.

Keywords: Achievement goals, motivational orientation, study strategy, GPA

Educators have the primary task of motivating students and helping them to become self-regulated learners. This requires them to develop an understanding of dynamics of academic motivation and knowledge of what can possibly enhance or dampen it. Students largely learn on their own but the school system, discourse of a program, and the study strategies bear on student achievement (Dweck & Leggett, 1988). Individual differences among instructors also impact the learners and the learning outcome. A stable trait view of motivation (Kanfer & Heggested, 1999) has

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been used across a variety of settings to predict performance. However, the context specific cognitive motivational perspective such as achievement goal theory has explained student outcome more convincingly (Biglan, 1973; Breen & Lindsay, 2002).

Achievement goal theory posits that students generally follow two types of goals in studies: Learning goals and performance goals (Dweck, 1986). The former orientation is pursued when students are engaged in studies for intrinsic value of learning, persist in studies even in the face of obstacles and challenges and try varied problem-solving strategies to learn well. The performance goal orientation on the other hand, is characterized by a desire to demonstrate one's competence to others and being concerned about outscoring others for seeking public recognition rather than intrinsic satisfaction.

These goal patterns were taken as dichotomous and discrete in the previous research efforts and students were regarded as having one goal predominantly or the other. Such a perspective on goal theory was however revised in view of the evidence that some students seem to bear both the goals strongly, thus learning and performance goals combine to account for greater academic outcome. Therefore, need to learn and need to perform well can exist side by side and benefits from both goals would be more profitable for students. Particularly learning goals are thought to be most beneficial for students across all achievement levels. For instance, in a study on college students, Bouffard, Boisvert, Vezeau, and Larouche (1995) found that the highest level of student performance was displayed by high learning-high performance group of students, followed by high learning-low performance group, and the least adaptive were low learning-low performance group. These results endorse revised perspective on goal theory where performance goals and learning goals complement each other for a wholesome academic activity. In other words both the goals are credible and useful. Several ideas about the multiple goal issue have been investigated within achievement goal theory (Barron & Harackiewicz, 2001; Pintrich, 2000). Harackiewicz, Barron, Pintrich, Elliot, and Trash (2002) held that endorsing performance goals is beneficial especially when learning goals are also in place, thus a performance consideration adds to the learning aspect.

Goals provide reasons why students engage in achievement behavior. They also guide learners in adopting suitable study strategies in their academic work. Study strategies involve a sequence of mental activities or operations that facilitate learning, remembering, and understanding the course material. Different cognitive strategies such as rehearsal, elaboration, and organization have been found to foster active cognitive engagement that result in higher level of college

achievement (Weinstein & Mayer, 1986). To Pintrich and De Groot (1990) goals facilitate the process of cognitive engagement in more actively processing information leading to increased use of suitable study strategies in academic work. Learners can be differentiated in the use of study strategies particularly at the college level where student population is heterogeneous and it is pursuing different disciplines that involve different nature of discourses. Some studies investigated relationship between specific disciplines or academic courses, goal orientation of the students, and choice of appropriate study methods (Biglan, 1973).

The significance of the present study lies in finding if data from Pakistan support this Western theory and research findings on various aspects of achievement theory in college settings. System of education in Pakistan is different from that in the West in that it is highly structured here; whole-class instructions, rote learning, directive delivery of lessons and summative evaluation with emphasis on performance (examination) orientation are the dominant classroom practices even at the college level. Several researchers (Ames, 1992; Urdan, 1997) have observed that peculiar systems of education and classroom practices influence the goals and study strategies the students adopt on their own as well as those enforced by the educational institution.

Some researchers reported positive relationship between students' learning goals and use of study strategies at the school level (Pintrich & De Groot, 1990) however; such relations have been ambiguous and inconsistent among college students (Archer, 1994; Pintrich & Garcia, 1991). This serves as the second reason for undertaking this study. In the present study, we have assessed students' goal orientation and study strategies by means of self report measures and take the same to have been caused by the students' personal goal orientation as well as by the college system and its goal structure.

The present study was designed to investigate relations among different academic goals, study strategies and college performance variables. Specific research questions pursued in this study are organized around three general issues: Advantage of learning orientation over performance goals, salience of multiple goal orientation and lastly the effect of specific academic discipline or educational programs on academic achievement. The following research questions were investigated.

1. Does specific goal orientation of the students influence use of particular study strategies and level of academic achievement?

2. Whether different disciplines i.e., area of study engage different patterns of goal orientation and specific study strategies effecting level of academic achievement?

Method

Sample

The sample of the study comprised 144 students of Government College University, Lahore registered in two years' master program in various disciplines e.g., Social Sciences (Psychology, Economics, History); Pure Sciences (Physics, Chemistry, Mathematics) and Applied Sciences (Business Studies, computer studies, Telecommunication Engineering). These courses are equivalent to 3rd and 4th year studies in the major subject in a 4-year degree program after completing 12 years of school education. Students' age ranged between 20-27 years ($M = 23.5$, $SD = 1.14$). About 22 % of the respondents were women. When the participants were surveyed for this study, they had completed a year's course work and were engaged in the second year of academic work. They were admitted to the university according to the admission criterion comprising previous academic record as well as score on the admission test and interview in the major subject or discipline they studied at graduate level and wanted to study it further in M.Sc. A merit list of top 30-35 applicants is drawn for each major subject separately for admission into a certain program. Thus selection criteria might vary across disciplines because of the local supply and demand situation in specific disciplines.

Instruments

Motivated Strategies for Learning Questionnaire (MSLQ). This scale was developed by Pintrich, Smith, Garcia, and McKeachie (1991). It is a self-report instrument designed to measure motivational beliefs and use of study strategies among college students. Selected subscales of MSLQ were used in the present study. To Weinstein and Mayer (1986), MSLQ is based on a general social-cognitive perspective of motivation and study engagement with the learner represented as an active processor of information whose beliefs and cognitions are important mediators of instructional input and task characteristics: "When I study for this class, I practice saying the material to myself over and over", "I treat the course material as a starting point and try to develop my own ideas about it". "Whenever I read or hear an

assertion or conclusion in this class, I think about possible alternatives".

There are two sections of MSLQ, a motivation section and a learning strategy section. The Motivational Section comprises four items each for assessing learning and performance goal orientations. Alpha coefficients for the learning and performance motivation scales were .64 and .68 respectively, on the current data. Learning strategy section is based on a general cognitive model of learning and information processing (Pintrich & Smith et al., 1991). It contains 31 items that assessed learners' use of different study strategies, namely rehearsal, elaboration, organization, critical thinking, and metacognitive strategies; "When I read the material for science class, I read the material over and over again", or "I outline the chapters in my book to help me study". Overall alpha reliability coefficients of the study strategies scale was .89 and that of its subscales ranged between .65 and .78 on the current data. Responses to the questionnaire were recorded on 7 point scale: not at all true of me (1), very true of me (7).

Grade Point Average (GPA). GPA was obtained from the college office comprising students' performance on 12 courses of 6 credit hours each, spanning over two years. GPA ranged 2.00 – 4.00 ($M = 2.92$, $SD = 0.76$) and represented sum of all the marks attained in a course which is then curved for relative grading. Students are assessed on preliminary, midterm, and final examination in each course in addition to semester work component comprising a term paper, quizzes, and assignments.

Procedure

Students from selected classes in different disciplines were approached in their class periods and were invited to volunteer as a class in this research study. Students were requested to accord consent as a class to participate in this study for purely research purposes. They were administered relevant part of MSLQ in the regular class period in their respective departments. There was no time limit. Trained proctors adhered to script and read out test instructions verbatim in a standardized procedure. Sessions were scheduled in the last hour of the daily college work allowing the participants sufficient time to complete the questionnaire. It took on average about 40 minutes to administer and take the questionnaire. The participants were debriefed after they completed the questionnaire. Later, record of GPA was obtained from controller of examination to counter check GPA the students had reported. Seven protocols had numerous missing responses

including one where a whole page had been skipped. These cases were dropped from the analyses.

Results

Psychometric properties for the measures used in the current study were computed and it was found that have satisfactory alpha coefficients ranged from .64 for learning orientation to .78 for elaboration. Scores for each scale were divided by the number of items in the scale so that average mean become comparable across scales of different length. Correlations among the variables of the study have also been shown there. Mean scores on performance goals and learning goals scales were found to be similar indicating that students had an even inclination toward both the goals.

Table 1

Means, Standard Deviations, and Correlation Matrix of Variables of the Study

Variables	M	SD	2	3	4	5	6	7	8
1. Learning orient.	5.26	.09	.22*	.36**	.54**	.57**	.53**	.48**	.13
2. Perform orient.	5.30	1.22		.40**	.28**	.38**	.11	.32**	-.09
3. Rehearsal	4.84	1.69			.46**	.60**	.49**	.57**	.07
4. Elaboration	5.21	0.90				.60**	.60**	.55**	.11
5. Organization	5.14	1.18					.53**	.58**	.00
6. Critical thinking	4.29	1.03						.52**	.00
7. Meta cognitive	4.81	0.70							-.16
8. GPA	2.92	0.76							

Note. Variables 1 and 2 are goal orientation scales and 3 -7 are study strategies scales. *$p < .05$, **$p < .01$.

The mean scores on most of the scales were also comparable and were about one standard deviation above the theoretical mean value of 4.00 except on rehearsal scale which had a lesser mean and a large standard deviation. This makes sense in a university setting where lower cognitive strategies are used less often. More specifically, the middle order strategies i.e. elaboration and organization, were used by the students about equally. The deep cognitive strategies of critical thinking and meta-cognitive strategies have also been relatively less used. These scales have satisfactory alpha coefficients (.64 - .78) as short 4-5 items affective measures. Zero order correlations ranged widely (.11 - .60) among the psychological variables. A number of observations can be made from the correlation matrix. First, learning and performance goals

are moderately correlated indicating these to be related yet distinct constructs. The former are relatively more correlated with study strategies of the students than the latter, in keeping with the psychological theory. Second, rehearsal as a shallow form of cognitive study strategy is less associated with learning goals ($r = .36$) than with performance goals ($r = .40$), meaningfully enough. Third, all the study strategies are moderately and positively correlated with each other. Fourth, GPA was poorly correlated with all the strategies and both the goals (.00 to -.16), however, it was comparatively more associated with learning goals and two of the five study strategies namely elaboration ($r = .11$) and meta-cognition strategies ($r = -.16$). Critical thinking as a study strategy had virtually little correlation with GPA. Fifth, the above set of correlations reflects on the mental processes and functions that underlay the pursuit of knowledge indexed as GPA. Nevertheless, relationship between psychological measures is meaningful and provides support for the concept validity of motivation as well as the study strategies scales.

Relating Motivational Patterns to Study Strategies

Students were split across the median value for learning goals and performance goals to find how different motivational patterns are associated with various study strategies. Four groups were thus formed; those who were above the median score on both learning and performance motivation scales called high learning-high-performance group, those who were weak on both were called low learning- low performance group and those who were above the median value on one and below on the other were named low learning-high performance and low learning-low performance group, respectively. The four groups formed in this manner are illustrated in Table 2 along with the strength of various study strategies in use by these groups. It shows that strength of study strategies is in accord with goal orientation i.e. the study strategies were more often used by the multiple goal group, followed by relatively more learning orientation group and more performance oriented group, in sequence. The group which was weak in both motivations made a prominently less use of study strategies. Thus group membership appears to moderate strength of study methods, $F (3,140) = 8.76 – 18.46$, ($p < .001$) as expected. Similar findings were reported by Bouffard et al. (1995). High learning - low performance group displayed more engagement with study methods than the low learning – high performance group. However when both the goals were in place i.e., high learning conditions, high performance goals conditions, it boosted strategy use as well as achievement outcome i.e., GPA. This demonstrates adaptive role of the performance goals.

Table 2

One WAY Analysis of Variance of Study Strategies for Levels of Learning-Performance Motivation

Goal Orientation Groups

	Hi Learn - Hi Perform (n = 43)		Hi Learn - Lo Perform (n = 30)		Lo Learn - Hi Perform (n = 31)		Lo Learn - Lo Perform (n = 40)		F
	M	SD	M	SD	M	SD	M	SD	
Rehearsal	5.80	0.71	5.66	1.14	4.97	1.14	4.49	1.10	12.15 *
Elaboration	5.90	0.71	5.59	0.63	4.94	0.92	4.96	0.85	14.19*
Organization	5.14	0.62	5.57	1.09	4.83	1.16	4.76	1.14	18.46*
Critical thinking	5.54	0.63	5.44	0.80	4.40	1.37	4.76	0.93	12.68*
Meta cognitive	5.37	0.11	5.04	0.50	4.59	0.71	4.62	0.79	8.76*
GPA	3.01	0.37	2.92	0.34	2.84	0.31	2.78	0.29	1.71

Note. Hi = high, Lo = low. Learn = Learning, Perform = Performance. *p < .001, between groups *df* = 3; within groups *df* =140; groups total *df* = 143

Importantly, learning attitude had consistently an edge over performance attitude in terms of strength of strategy use. Performance goals were less beneficial when learning goals were weak. Especially learning goal orientation found favor with significantly more use of organization, critical thinking and meta-cognitive strategies. Thus high learning-high performance group could be clearly differentiated from the other three groups in post-hoc analysis. Likewise, goal orientation group 2 could be differentiated from group 3 and so on. Difference across use of strategies within specific orientation groups was not found for any group, however. GPA did not change significantly across the four motivational patterns F (3,140) = 1.71, $p < .189$ in view of its weak correlation with learning goals and almost no relationship with performance goals.

Table 3

2 X 2 Factorial Between-Groups Design: Study Strategies as Function Learning/performance Goals

Subscales	Sources	SS	df	MS	F
Rehearsal					
	Learning Goals	216.52	1	216.52	14.13**
	Performance Goals	213.60	1	213.60	13.94**
	Learning X Performance	42.13	1	42.13	2.75
	Residual	2144.80	140	15.32	
	Total		143		
Elaboration					
	Learning Goals	783.19	1	783.19	37.13**
	Performance Goals	51. 21	1	51. 21	2.42
	Learning X Performance	89.34	1	89. 34	4.23*
	Residual	2952.60	140	21.09	
	Total		143		
Organization					
	Learning Goals	745.31	1	745.31	55.66**
	Performance Goals	150.46	1	150.46	11.23*
	Learning X Performance	16.40	1	16.40	1.22
	Residual	1874.60	140	13.39	
	Total		143		

Subscales Sources	SS	df	MS	F
Critical Thinking				
Learning Goals	691.73	1	691.73	30.99**
Performance Goals	1.83	1	1.83	.08
Learning X Performance	.58	1	.58	.02
Residual	3123.40	140	22.31	
Total		143		
Meta Cognition				
Learning Goals	1400.83	1	1400.83	22.92**
Performance Goals	327.73	1	327.73	5.35
Learning X Performance	18.80	1	18.80	6.30*
Residual	8563.80	140	61.17	
Total		143		

$*p < .05. **p < .01.$

A 2 x 2 Factorial ANOVA was run to find out if learning and performance goals affect use of study strategies (Table 3). A consistent and significant role of learning goals was found across all the study strategies but performance goals could influence a limited number of strategies i.e., rehearsal, and organization only --- the initial two strategies in order of cognitive strength. A significant interaction effect of learning and performance motivation was also observed for elaboration and meta-cognitive strategies.

Table 4

One WAY Analysis of Variance for Strength of Goal Orientation and Use of Study Strategies across Disciplines

	Disciplines						
	Pure Sciences (n = 22)		Social Sciences (n = 50)		Applied Sciences (n = 42)		
	M	SD	M	SD	M	SD	F
Motivational Orientation							
Learning	5.18	1.20	5.35	0.90	5.49	1.01	.63
Performance	5.80	1.11	5.44	1.11	5.34	0.99	2.15
Study Strategies							
Rehearsal	5.11	1.11	5.11	0.99	6.67	1.23	2.45*
Elaboration	5.00	0.90	5.33	1.28	5.36	1.21	2.51*
Organization	5.06	1.15	5.23	1.08	5.20	1.14	0.30
Critical Thinking	4.70	1.12	4.96	1.03	5.10	0.93	1.65
Meta Cognition	4.80	0.64	4.88	0.72	4.73	0.78	0.54

$*p < .05.$ between groups $df = 2$; within groups $df = 141$; groups total $df = 143$

Note. Pure Sciences (Physics, Chemistry, Mathematics), Social Sciences (History, Psychology, Economics), and Applied Sciences (Telecommunication, Computer Sciences, Business studies).

Goals and Strategies across Various Disciplines

Achievement goal theory was examined in the context of specific disciplines as well since differences in the courses might be relevant to different motivational pattern and study strategies. As Table 4 indicates, motivation and study strategies do not vary significantly across disciplines, contrary to our expectations. It appears therefore that there are no distinctive study methods or motivational pattern of any of theses disciplines which might impact GPA in these programs. Considering that grades are important dimension of any area of studies, both for the students and teachers, they were predicted through the goals and strategies.

Table 5

Stepwise Regression Analysis for Prediction of GPA from Disciplines, Goals, and Strategies

Source	B	SE	β	t	R^2
Model-1					
(Constant)	2.93	.04			
Discipline	8.24	.03	.207	2.52**	.136
Model-2					
(Constant)	2.94	.04			
Discipline	7.41	.03	.186	2.71**	
Learn*Discipline	1.11	.00	.168	2.04*	.189

*$p < .01$. **$p < .00$.

Note. All study strategies, learning goals and performance goals got excluded as regressors, being not significant ones in step-wise regression analysis. Disciplines include Pure Sciences, Social Sciences and 3 Applied Sciences.

Two sets of variables were entered in the regression equations; discipline in step-1 as a control and goals and study strategies in step-2, as predictors in a step-wise regression analysis. The predicted variable was grade point average (GPA) covering two years' course of studies. Results indicated a major and significant impact of discipline which explained 13 % of the variance in GPA. Discipline was coded as 0, 1, 2 for pure, social and applied sciences, respectively. The main effects of learning and performance goals as well as that of the five study strategies

were not significant therefore these variables got excluded from the step-wise regression analysis. However, interaction between learning goals and discipline was significant which explained another 5% of the variance. Together, these estimates were 19% (Table 5).

Overall, the results of this study were mostly in line with the pattern of findings in the Western researches about the achievement goal theory. Two important points are: One, when learning goals were high study strategies was used more often, particularly elaboration and critical thinking however, these strategies were strengthened further when high performance goals also existed simultaneously a state of multiple motivation. Two, mean values of goal pattern and study strategies were similar across all disciplines therefore they could not predict GPA of the students, however discipline significantly predicted GPA by itself as well as in interaction with learning goals, though the prediction estimates were modest i.e. about 19% only, possibly due to limited range of GPA scores.

Discussion

The present study endorsed the basic aspects of the goal theory on data from Pakistan. Most prominent among the findings is the salience of learning goals which significantly drive student strategies and also seem to somewhat impact GPA. On average, strength of learning and performance goal orientation was comparable among students. Elaboration and organization as study strategies were used more often by the students. Rehearsal, a lower order strategy and critical thinking and meta-cognition as higher order strategies were relatively less used. Students with multiple goal orientation were engaged with study strategies more actively and secured relatively higher GPA than students with other motivational combinations. Thus, learning motivation seemed to facilitate the process of cognitive engagement in more actively processing the information leading to increasing use of study strategies. It had interaction effect with elaboration and meta-cognitive strategies as well. Interestingly, rehearsal was less exercised by students of applied sciences and elaboration was relatively less used by students of pure sciences as field related and precision-oriented disciplines, respectively. There might be other disciplinary reasons for such choice of strategies. Discipline, more than any motivational factor or study strategy, predicted GPA significantly. It explained, together with, learning x discipline interaction, about 19% of the variance in GPA. The prediction estimates are however modest.

We gather from the results that learning and performance motivation combine to account for more use of study strategy as well as higher student outcome or GPA. This has been a traditional finding in other research investigations (Rebbeca, 2005) supporting the revised achievement goal theory. The salience of the learning goals over performance goals seems in order especially in a college setting where innovative and independent thinking and problem solving is crucial to higher education. In a school context, the priority might well be the other way round where rehearsal and remembering would be major tools of learning. Thus choice of study strategy is very pertinent to educational level as well as educational outcome.

We found a lesser use of rehearsal rightly, at the college level but use of critical thinking and meta-cognitive strategies should have been at least average like strategies of organization and elaboration. Classroom goal structures might also have shaped these trends (Ames & Archer, 1988). Findings about predicting college grades have been mixed in several studies and psychological variables alone have not predicted college grades prominently (Feldman & Newcomb, 1969). Interestingly, discipline or area of study, as a context variable, emerged as a lead point in predicting college grades in this study. However, diversity of disciplines or selective nature of college samples yield a narrow range of GPA constraining prediction of college grades.

The issues of benefits of learning over performance goals, salience of multiple goal orientation and the role of specific discipline or educational programs as context factor, find endorsement in these results. Systematic increase in the use of all study strategies as well as in GPA across the four motivational groups is psychologically as well as educationally meaningful. An implication of the study would therefore be that multiple goal orientation may be fostered in college programs in terms of curricula and instructional structure so that students could be engaged with diverse study strategies to benefit from college experience. Interestingly, strength of the strategies could not be differentiated across disciplines as students were observed to use same strategies in all disciplines to the same degree. Exceptions are applied discipline using lesser rehearsal and pure sciences using lesser elaboration in keeping with the discourse of these programs.

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