Institute of Business Administration Karachi
Leadership and Ideas for Tomorrow

Business Review

Article 10

Volume 10 Issue 1
January - June 2015

1-1-2015

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Recommended Citation

Nabi Khan, S., & Khan, M. (2015). 'But Math is my subject' - A study of motivational beliefs and self-regulated learning as a predictor of goal orientation in secondary school students. *Business Review, 10*(1), 115-130. Retrieved from https://doi.org/10.54784/1990-6587.1318

https://ir.iba.edu.pk/businessreview/vol10/iss1/10
DOI: https://doi.org/10.54784/1990-6587.1318

ARTICLE

'BUT MATH IS *MY* SUBJECT' - A STUDY OF MOTIVATIONAL BELIEFS AND SELF-REGULATED LEARNING AS A PREDICTOR OF GOAL ORIENTATION IN SECONDARY SCHOOL STUDENTS

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Abstract

The relations between three goal orientations and students' motivational beliefs and self-regulated learning were examined in a study of 210 students of grade 7-9. Data collected were self-reported questionnaires from several different schools for two major academic subject areas: English, and Math. SEM analyses revealed that generally positive pattern of motivational beliefs including adaptive levels of task value, as well as cognition including higher levels of cognitive strategy use, self- regulation, and academic performance and negative patterns of test anxiety resulted in learning goal orientation. Higher levels of self-efficacy and cognitive strategy use also leads to relative ability goal orientation while higher level of test anxiety and relatively lower intrinsic value led to performance approach goal orientation. Results are discussed in terms of the implications for goal theory.

Introduction

Consider this situation: A student enters his school to receive his result card. English and Math are both major subjects. As he opens the report he jumps with joy to find out that he has achieved an A grade in Math. As his teacher demands an explanation for his average grade in English he responds 'But math is *my* subject'. In an attempt to explore what the student means and how he determined that his subject *is* Math we build on this observation, aiming to understand such actions.

Research has suggested that the students can choose from two different goal orientations i.e. learning goal orientation and a performance ability goal orientation. In the former the student is concerned with understanding and learning the concepts whereas in the latter he is concerned about his relative ability and performance according to his peers.

It is important to know the effect a specific goal orientation has on the student's learning and academic performance. The need to investigate and explore students' motivation for schoolwork and the factors that are leading to low/high academic performance and grades presented a wide gap in the literature for research.

Hence, this research sets forth to find out: Do beliefs alter the goal orientation of students? Do students perform good/bad based on their goals? Does motivation and self-regulation play a role in identifying student goals?

This study is conducted in order to examine the relationship between the three different goal orientations such as learning goal orientation, relative ability goal orientation and performance avoidance goal orientation and their effects on the students' motivational

https://ir.iba.edu.pk/businessreview/vol10/iss1/10
DOI: https://doi.org/10.54784/1990-6587.1318

beliefs, self-regulated learning and academic performance.

Identifying factors that influence student achievement and motivation to learn in the classroom continues to be a goal of education researchers (Eggen & Kauchak, 1999). Students who follow learning goal orientation focus on the learning of the material and believe that their effort will lead to the mastery of the material and hence success (Ames, 1992). Students who have positive self-efficacy and follow this orientation should not feel under pressure about succeeding (Pintrich & Schunk, 1996). On the other hand, performance ability goal orientation has been related to value for learning i.e. the intrinsic interest of the students (Ames, 1992). According to the above-mentioned findings, the following relationship has been developed; the learning goal orientation would have a negative relationship to the test anxiety and a positive relationship with the task value and self-efficacy.

Goal orientation examines the behavior of individuals in terms of their approach towards achievement. Diener and Dweck (1980) were interested in finding as to why some students were adaptive while others were maladaptive and showed helplessness when working on certain types of tasks. They defined adaptive behaviours as those that promote the establishment, maintenance and attainment of personally challenging and personally valued goals.

Dweck and Leggett (1988) defined goal orientation as a uni-dimensional construct, where it was assumed that the learning goals and performance goals were mutually exclusive (Butler 1987; Elliot and Dweck, 1988; Muller and Dweck, 1998). Covington (2000) also contributed with an important finding that academic goals initiate gaining knowledge. Thus learning goal leads to deep level learning and academic success, while performance goals results in a shallow processing, influencing negatively.

Achievement goal theory has emerged as another important aspect of motivational research (Dweck & Leggett, 1988; Harackiewicz & Elliot, 1996; Maehr, 1989, Nicholls, 1989; Weiner, 1990). The focus is on how students think about themselves, their tasks, and their performance rather than conceiving of students as possessing or lacking motivation, (Ames, 1987). Goals provide a framework within which individuals interpret and react to events, and result in different patterns of cognition, affect, and behavior (Dweck & Leggett, 1988). There are two types of achievement goals, the goal to develop ability and the goal to demonstrate ability. Similarly, we will examine three types of goal orientations in terms of students' motivational beliefs and performance.

The study sets to research different goal orientations with respect to students' motivational beliefs, self-regulated learning and academic performance. The purpose of this research is to determine the effect of different motivational beliefs and regulation strategies on the goal orientation of the students.

The proposed research is of importance to students and teachers who can recognize the implications of different goal orientations on the academic performance. This study will be useful for the students and will help them to cope with factors like test anxiety, intrinsic value and self-efficacy in order to improve their learning and performance. Teachers will be able to understand the factors that lead to students' academic performance and will help them to adopt strategies in teaching and developing classroom tasks that will increase the student

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motivation that will in return increase their productivity and achievement.

Research Question

Hence, the research question for this study is as follows:

> What is the relationship between a goal orientation (learning, relative ability and performance avoidance) and students' motivational beliefs and self-regulated strategies?

Theoretical Development

Goal Orientation:

The more optimistic pattern of responding reflects an orientation toward learning goals, characterized by a desire to increase one's competence through mastering new problems and skills. A learning goal orientation is typically accompanied by persistence when faced with obstacles; willingness to try varied problem-solving strategies, and enjoyment of challenges. A performance goal orientation is characterized by a desire to elicit favorable judgments of one's performance and to avoid negative evaluations. This often translates into a preference for easier tasks that ensure success, low persistence and deteriorating performance when faced with obstacles, and heightened performance anxiety and task aversion.

Underlying a learning goal orientation is the belief that effort is a means to success and that effort actually enhances ability. A performance goal orientation, on the other hand, reflects belief in an inverse relationship between effort and ability. Greater effort indicates lower ability; if a task is difficult, one must not have much ability in that area. Students may give up at attempts to achieve because they feel that their efforts are ineffective (Dweck and Reppucci, 1973; Licht and Dweck, 1984). For example, Schraw et al. (1995) found that students with a strong learning goal orientation performed better in an introductory science course than students with a weak learning goal orientation. Consistent with Dweck's model, learning goals facilitated the development of adaptive cognitive skills such as use of varied learning strategies and metacognitive awareness. Contrary to Dweck's model, however, performance goals were unrelated to course achievement.

The relationship between performance goals and achievement is complex. A strong performance goal orientation combined with low confidence tends to impair achievement. In contrast, children with a performance goal orientation can maintain academic success if they have high confidence in their abilities, but they tend to avoid challenges and worry about doing well (Dweck, 1986; Smiley and Dweck, 1994). According to Dweck and Leggett (1988), there needs to be a balance between learning and performance goals in order to have optimal results. Performance goals can serve to provide objective feedback about one's strengths and weaknesses but they can become problematic and can lead to impaired performance in the face of challenges.

Different patterns of motivation have been identified by researchers where a student is either motivated to learn and understand more or is motivated due to some external benefit like grades. Dweck and Elliot (1983) called them learning and performance goals, whereas Nicholls (1984) identified them as task-involved versus ego-involved orientations, and Harter (1981) characterized them as a dichotomy between intrinsic and extrinsic goal orientations. Individuals with a performance goal orientation believe that intelligence is fixed (Dweck and Leggett, 1988), and that it cannot be changed or improved (Leggett, 1985). Those who are learning oriented on the other hand believe that intelligence is incremental (Leggett, 1985), and it can be changed or increased through effort (Dweck and Elliott, 1983). Individuals also

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DOI: https://doi.org/10.54784/1990-6587.1318

have different approaches towards effort and ability. Learning goal oriented individuals see effort as a means of increasing intelligence, whereas performance goal oriented students see it as an evidence of low intelligence (Dweck and Elliott, 1983). Therefore such individuals when faced with a failure situation develop a helpless response, which results in bad performance (Elliott and Dweck, 1988). An individual's implicit beliefs about ability and effort, therefore, may be at the root of adaptive and maladaptive achievement learning patterns (Dweck and Leggett, 1988).

Independent variables:

Self-efficacy:

Academic self-efficacy refers to subjective convictions that one can successfully carry out given academic tasks at designated levels (Schunk, 1991). According to an article on self-efficacy and academic achievement, students with low self-efficacy believe that intelligence is inborn and it cannot be changed whereas students with high self-efficacy believe in learning and mastering the material and out performing others. Generally, self-efficacious students are able to perform better because they believe in effort and perseverance, as they are able to face the challenges. Researchers have consistently demonstrated that perceptions of self-efficacy, or beliefs in one's own abilities to realize desired outcomes, play a critical role in determining people's subsequent functioning, adaptation, and attainments (Bandura, 1995, 1997).

Self-efficacy has received particular attention in educational research (Pajares, 1996; Pintrich & Schunk, 1996) because of its apparent appeal and usefulness in explaining student motivation and behavior. Investigators have found that students with a strong sense of self-efficacy are motivated to engage in challenging academic task, they set higher goals for academic achievement, invest more effort and persist longer in accomplishing those goals and feel less anxious in academic contexts (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Bandura & Schunk, 1981; Lent, Brown, & Larkin, 1984; Pajares & Miller, 1994; Pajares, Miller, & John son, 1999; Pintrich & De Groot, 1990; Schunk & Ertmer, 1999; Schunk & Swartz, 1993; Zimmerman, Bandura, & Martinez-Pons, 1992; Zimmerman & Kitsantas, 1999; Multon, Brown, & Lent, 1991).

Hypothesis 1: There is a relationship between goal orientation and self-efficacy.

Task value:

Task value is defined as an incentive to engage in academic activities, which represent some perceived importance and interest (Wigfield & Eccles, 1992). Educational, vocational and other achievement related choices are most directly related to two sets of beliefs; the individual expectations for success and the importance or the value individual attaches to the various options perceived by the individual as available. Individuals choose from among several options, they do not actively or consciously consider the full range of objectively available choices. Many options are never considered because the individual is unaware of their existence. Furthermore, the choice is often between two or more positive options or two options having both positive and negative components. Individuals will then choose those tasks or behaviours that have relatively high positive value.

Research has majorly focused on off-task behavior as an indicator of students breaking class norms and as deviant behavior with negative consequences for student learning (Doyle 2006; Emmer and Slough, 2001). Conversely Hofer (2007) argued that students do display off-task behavior because they try to reach non-curricular goals aside from their

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learning goals. They face a conflict between two alternatives that offer positive incentives but cannot be reached at the same time. After having decided for one option, be it on task or off task behavior, students experience motivational interference due to the motivational properties of the non-chosen option interfering with the behavior being performed (Kilian et al., 2010).

Miller and Brickman declared that individuals' future goals may become a "driving force". Studies carried out by researchers (Greene, Miller, Crowson, Duke, & Akey, 2004) have demonstrated that individuals' task value, which they call "perceived instrumentality", would predict the adoption of a mastery goal. Moreover students would only put effort when they perceive the goals to be important to them in future and would not pursue those goals that they perceive are not useful to them in future. Hence, the following hypothesis was developed.

Hypothesis 2: There is a relationship between adoption goal orientation and task value.

Test anxiety:

Identifying factors that influence student achievement and motivation to learn in classroom continues to be a goal of education researchers (Eggen & Kauchak, 1999). Lewin's field theory (1936, 1942) suggests that one's behaviours are a function of their personal characteristics and of their environment. Test anxiety is one learner characteristic that is applicable to educational practice (Printich & Schunk, 1996). Most prominent researchers viewed test anxiety as a trait- a relatively stable personality characteristic that prompts an individual to react to threatening situations with sometimes debilitating psychological, physiological and behavioural responses. There is an extensive amount of empirical evidence of the test anxiety on academic performance. In one study Hembree (1988) found that test anxiety routinely causes poor performance. Hill and Wigfield (1984) reported studies with correlations upto -60 between test anxiety and achievement share significant variance. Also researchers discovered that the impact of test anxiety on student's performance is often influenced by the evaluation practices of the classroom teacher (Maehr & Midgley, 1991; Pintrich & Schrauben, 1992). Zatz and Chassin (1985) found that students with high test anxiety perform more poorly on test than do students with low or medium test anxiety only in classes where the threat of evaluation is high.

According to an article on the causes, effects and treatment of Test anxiety, test anxiety causes poor performance. It is indirectly related to the students' self-esteem and directly related to fear of failure and negative evaluation. Conditions (causes) giving rise to differential test anxiety levels include ability, gender, and school grade level. A variety of treatments are effective in reducing test anxiety.

Hypothesis 3: There is a relationship between goal orientation and text anxiety.

Self-regulation:

Self-regulation refers to self-generated thoughts, feelings, and actions that affect a student's academic motivation and learning. Effective self-regulation depends on students developing a sense of self-efficacy for learning and performing well. Students with high self-efficacy are more likely to engage in activities, work harder, persist longer when they encounter difficulties, use effective learning strategies, and demonstrate higher achievement.

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Success in self-regulation depends on self-monitoring. The process of self-monitoring is not simply a mechanical audit of one's performances. Self-observation serves at least two important functions in the process of self-regulation. It provides the information needed for setting realistic goals and for evaluating one's progress toward them.

Hypothesis 4: There is a relationship between goal orientation and self-regulation.

Cognitive strategy use:

Learning strategies defined globally as "mental processes that learners can deliberately recruit to help themselves learn and understand something new" are regarded as essentials of self-regulated learning. The literature presents different taxonomies to define and classify learning strategies (Dansereau et al., 1983; Pintrich & Garcia, 1991; Weinstein & MacDonald, 1986; Weinstein & Mayer, 1986). Most common is dividing them into broad domains: cognitive and metacognitive strategies. Cognitive strategies, basically consisting of rehearsal, elaboration and organization, help students encode, organize and retrieve new information. Metacognitive strategies, basically consisting of planning, monitoring, and regulating, help students control and execute their learning processes (Gall, Jacobson, & Billock, 1990; Pintrich, 1988). Furthermore cognitive strategies are classified into surface cognitive strategies, which help encode new information into short-term memory, and deep cognitive strategies, which facilitate long term retention of the target information (Graham & Golan, 1991; Nolen, 1988; Nolen & Haladyna, 1990; Pintrich & Garcia, 1991).

The finding of Pintrich and Garcia (1991) is that an intrinsic or learning orientation is linked clearly to the use of cognitive strategies, like elaboration and organization, which result in a deeper processing of a course material, as well as self-regulatory strategies and rehearsal strategies are weakly related to both the orientations. According to one study on college students it was seen that mastery goal orientation predicts use of cognitive and metacognitive strategies use and relative ability or ego-social orientation predicts surface cognitive strategy use. Work-avoidant goal orientation relates negatively to deep cognitive and metacognitive strategy use.

Cognitive strategies that a student uses can be used to gauge their commitment level. Such strategies directly affect the learning of the students. In general, cognitive strategies have been divided into two categories, surface strategies and deep strategies (Marton & Saljo, 1976; Marton, Hounsell & Entwistle, 1984; McKeachie, Pintrich, Yi-Guang, & Smith 1986; Pintrich, 1989). Not surprisingly, deep cognitive strategies generally produce better understanding of course material than do surface strategies (Pintrich & Garcia, 1991). Deep cognitive strategies require the students to be deeply involved in the material then surface level strategies. Students who are self-regulated learners are aware of the usage of these strategies and know how to use them and when. Many do such learning without being aware of it.

Many factors affect the use of cognitive strategies, one such factor being motivation, which is taken here from goal orientation perspective (Ames, 1992). It has been shown through research the link between goal orientation and cognitive strategy use (Pintrich and Schrauben, 1992). Students who adopt intrinsic goal orientation use deep level cognitive strategies than those who adopt extrinsic goal orientation (Anderman and Young, 1994; Graham and Golan, 1991; Pintrich, Roeser, and DeGroot, 1994; Vermetten, Lodewijks and Vermunt, 2001). Because of these relations, individuals are divided into two categories, learners and students. Learners are the ones who are more engaged and involved and adopt intrinsic orientation whereas students are the ones who adopt extrinsic orientation and they do what is the demand of the course.

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Hypothesis 5: There is a relationship between goal orientation and cognitive strategy use.

Performance:

A student's academic performance is truly the gauge by which people determine a person's intelligence and success. "Academic performance reflects how well an individual performs on various academic-related tasks over a period of time. It is an indicator of learning, but can also be an indicator of motivation, time management, and written communication skills" (Payne et al., 2007). Performance is really the only indicator by which to measure a person's success. Thus, it can be impacted by many different variables.

Student achievement is significantly impacted by student motivation and self-concept (McInerney et al., 2001). Further, the higher a student's academic self-concept, the higher the student's academic achievement (Marsh & Scalas, 2010). Thus, the relationship between self- concept and achievement cannot be ignored. Additionally, students who adopt a learning goal orientation in the classroom show higher levels of achievement (Harris & Harris, 1987).

Hypothesis 6: There is a relationship between goal orientation and performance.

Hence, from the literature presented the theoretical framework (Figure 1) was developed.

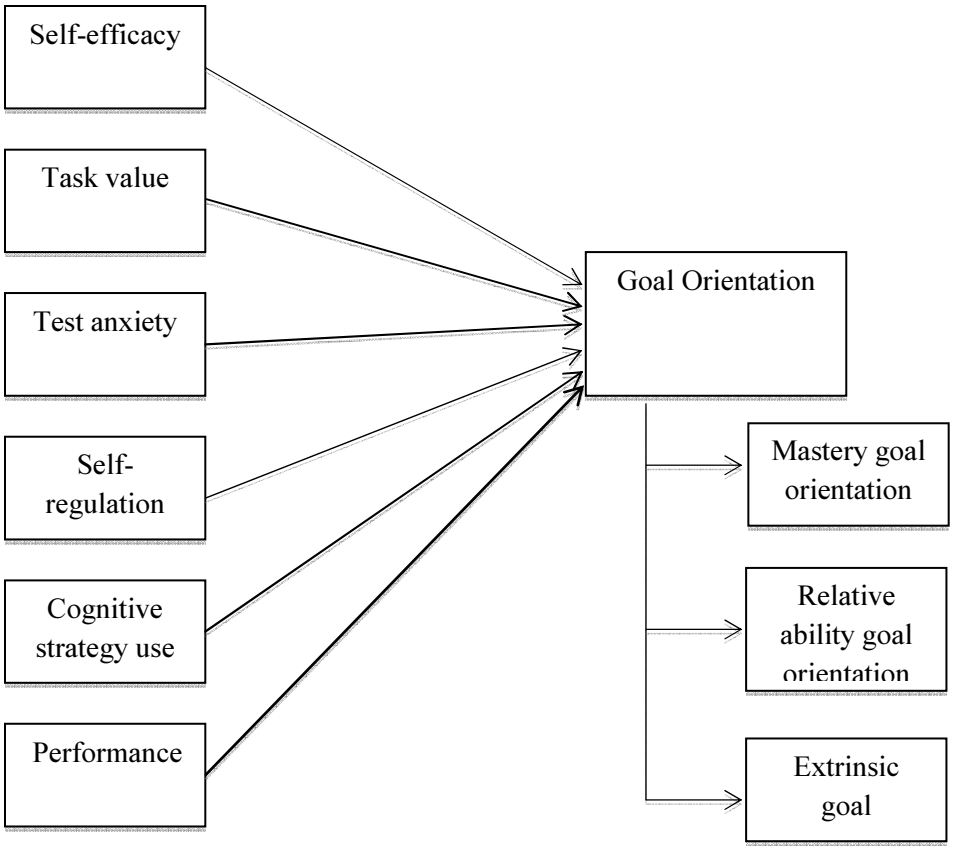

Figure 1: Theoretical

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Methodology

Sample:

Participants in this study were the seventh, eighth and ninth grade students from the educational institutes of Lahore city. Sample size of 210 respondents was selected to make the study more representative. The sample consisted of both girls and boys ranging in age from 11 to 15 years. Survey questionnaires were given to the students for the research.

Questionnaire Development and Description

The research for this study was conducted using the survey method where the data was collected from the respondents using Survey questionnaire. Combining the individual questionnaires for each individual dependent and independent variables one comprehensive questionnaire was developed. The questionnaire consists of three sections. The first section is Motivational beliefs, which asked the students to respond on a 7-point likert scale (1= strongly disagree, 7= strongly agree). The second section of the questionnaire consisted of self-regulated learning strategies, which also used a 7-point likert scale. The third section was about goal orientation using the same 7-point likert scale.

There were a total of 22 items in the Motivational beliefs section of the questionnaire and was divided into three subscales self-efficacy, intrinsic value and test anxiety. Self-efficacy had 9 items, intrinsic value had 9 items and test anxiety had 4 items. The self-regulated learning strategies section had 22 items and was divided into two subscales cognitive strategy use and self-regulation. Cognitive strategy use had 13 items and self-regulation had 9 items. The goal orientation consisted of 17 items and was divided into three sub-scales Mastery goal orientation, performance-approach or relative ability goal orientation and performance-avoid goal orientation. The mastery goal orientation had 6 items, performance-approach goal orientation had 5 items and avoid-performance goal orientation had 6 items.

Table 1: Items description

Construct	Authors	Subscales	No. of Items
Motivational beliefs	Pintrich & De Groot (1990)	Self-efficacy Intrinsic value Test anxiety	22
Self- regulation strategies	Pintrich & De Groot (1990)	Cognitive strategy Self-regulation	22
Goal orientation	Midgley, Maehr, Hicks, Roeser, Urdan, Anderman & Kaplan. (2000)	Mastery goal orientation Relative ability goal orientation Avoid-performance goal orientation	17

Motivational beliefs

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The motivational beliefs of the students were measured using three motivational factors: self-efficacy, intrinsic value and test anxiety. The self-efficacy scale was constructed using 9 items showing the perceived confidence and competence of the students regarding their performance of class work. The questionnaire has positive statements, which are related to students confidence in their ability e.g. “I expect to do very well in this class”, “ I think I will receive a good grade in this class”, “I know that I will be able to learn the material for this class”; (Eccles, 1983; Schunk, 1981). The intrinsic value was constructed by 9 items using statements like (“I think that what I am learning in this class is useful for me to know”) and perceived performance of ("It is important for me to learn what is being taught in this English class"; Eccles, 1983) as well as preference for challenge and mastery goals ("I prefer class work that is challenging so I can learn new things"; Harter, 1981). Four items (e.g., "I am so nervous during a test that I cannot remember facts I have learned," "When I take a test I think about how poorly I am doing" (Liebert & Morris, 1967) were used to show and test the concern and worry of the students when taking the test.

Self-regulation strategies

For regulation strategies two scales were constructed: cognitive strategy use and self-regulation. The Cognitive Strategy Use scale used 13 items regarding rehearsal strategies (e.g., "When I read material for science class, I say the words over and over to myself to help me remember"), elaboration strategies such as summarizing and paraphrasing (e.g., "When I study for this English class, I put important ideas into my own words"), and organizational strategies (e.g., "I outline the chapters in my book to help me study", Weinstein et al., 1987). One scale, labeled Self-Regulation, was constructed using Metacognitive strategies, such as planning, skimming, and comprehension monitoring (e.g., "I ask myself questions to make sure I know the material I have been studying," "I find that when the teacher is talking I think of other things and don't really listen to what is being said," and "I often find that I have been reading for class but don't known what it is all about") were adapted from Weinstein et al. (1987) and Zimmerman and Pons (1986). Effort management strategies were adapted from Zimmerman and Pons (1986) and included students' persistence in the face of difficulty (e.g., "Even when study materials are dull and uninteresting, I keep working until I finish" and "When work is hard I either give up or study only the easy parts").

Goal Orientation

Three types of goal orientation have been used in the questionnaire; mastery goal orientation, performance-approach/relative ability goal orientation, and avoid-performance goal orientation with a total of 17 items. Mastery goal orientation consisted of 6 items pertaining to the understanding and mastery of the task including statements like “I like classwork that I will learn from even if I make a lot of mistakes”, “I do my classwork because I am interested in it”. Performance-approach goal orientation consisted of 5 items regarding the students demonstration of competence e.g. I want to do better than others in the class”, “I’d like to show my teacher that I am better than other students in class”. Performance-avoid goal orientation constituted of 6 items and statements like “It’s important to me that I don’t look stupid in class”, “An important reason I do my classwork is so that I don’t embarrass myself”.

Data Collection and Sample Profile

Administering survey questionnaires collected data for this study. Various schools of Lahore city were listed down and the research was then conducted by distributing questionnaires. The respondents were explained the questionnaires and any confusions or ambiguities regarding the various items were cleared there and then. The questionnaire

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consisted of total 61 items divided under 3 sections and took around 15-20 minutes to fill out. The questionnaires were self-administered by the researcher and confidentiality of the respondents was maintained. It was made sure the questionnaires were filled out completely.

Among gender, 49% were boys and 51% were girls while 3% of the respondents were of age 10, 19% were of 11 years old, 25.5% and 24.5% were aged 12 and 13 years, and 6% of the students were of 15 years old. The highest percentage was accounted for age 12 while the lowest percentage of 3% for respondents was accounted for the youngest age i.e. 10 years. Thirty- one percent of the respondents belonged to class 7 and 8 each whereas 38% of the students were of class 9. Thirty-two percent of the students had grade B in English whereas in Math 45% of the students secured grade A.

Measures for Data analysis

The hypotheses for this research were analyzed by structural equation modeling (SEM). SEM allows for the testing of the questionnaire as well as the hypotheses. The first part of SEM is measurement analysis and second part is structural analysis. The measurement analysis is carried out by Confirmatory factor analysis (CFA), which tests for reliability and validity of each item with regards to other variables in the analysis. Shah and Goldstein (2006) suggested the analysis of validity and reliability to test for the questionnaire. Structural analysis was tested by regression. Two models were developed for each subject: English and Math. SEM was analyzed in AMOS.

Results

Measurement Analysis

The analysis was carried out for all variables. The analysis began with the loading of all sixty-one items. Items with loading of more than 0.50 were retained for the analysis (Hair et al., 2006). Construct reliability was calculated. Hult et al. (2004) suggested a cut-off of 0.60 for reliability. All variables had reliability within the acceptable level. For validity, two types were analyzed; convergent and discriminant validity. Convergent validity was measure by AVE being greater than 0.5 (Hair et al 2006). Discriminant validity was measure when AVE was greater than covariance squared (Fornell and Larcher, 1981). Both convergent and discriminant validity was found to be acceptable. The measurement analysis is shown in Table 2.

Table 2: Factor loading, CR, AVE & DV

	Factor Loading	**CR**	**AVE**	**DV**
Self-efficacy	0.60 - 0.73	0.631	0.413	0.326
Intrinsic Value	0.52 - 0.79	0.809	0.621	0.406
Test anxiety	0.69 - 0.83	0.660	0.521	0.397
Cognitive Strategy use	0.53 - 0.64	0.905	0.612	0.411
Regulatory strategy use	0.50 - 0.64	0.674	0.580	0.541
Learning goal Orientation	0.57 - 0.68	0.747	0.568	0.537
Relative ability goal orientation	0.61 - 0.73	0.789	0.402	0.399

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Performance avoidance goal orientation	0.69 - 0.81	0.674	0.580	0.541

Structural Analysis

The regression results to test for the hypothesis are presented in Table 3. The results for English and math were calculated. The results show different results for both subjects.

For English, the regression for English shows that intrinsic value was positively significant at $p < 0.01$ with learning goal orientation. Cognitive strategy, self-regulation, performance and self-efficacy were also found to be significantly and positively related to learning goal orientation while test anxiety was negatively related to learning goal orientation. Cognitive strategy was positively significant with relative ability goal orientation while test anxiety was positively significant with performance avoidance.

For Math, self-efficacy, intrinsic value, cognitive strategy was positively significant with learning goal orientation while text anxiety was negatively significant with learning goal orientation. Self-efficacy and cognitive strategy was also found to be positively significant with relative ability goal orientation. Test anxiety and cognitive strategy was found to be positively significant with performance avoidance goal orientation. These results are suggestive that anxiety for test enables students to cognitively develop strategies in trying to avoid performing.

Students felt anxiety more for Math than for English but only developed cognitive strategies for Math order to avoid performance. Test anxiety was negatively for both Meth and English in relation to learning goal orientation. Self-regulation was also higher for English in relation to learning goal orientation.

The model fit for the analysis shows a good model. A combination of model fit was suggested by Kline (2005) and Hu and Bentler (1999) as each one has its strengths and weaknesses. Segars and Grover (1998), Carmines and Mclver, (1981) and Papke- Shields et al. (2002) suggest normed Chi-square (CMIN/DF) to be between 1-3. Joreskog and Sorbom (1986) suggest a good model fit if CFI, NFI, IFI and TFI is greater than 0.90. For RMSEA, Hair et al. (2006) suggests a score of less than 0.10. Keeping these model fits in consideration we find that the model fit for both English and Math was within the acceptable range.

Table 3: Regression analysis results

			β (English)	**P-value**	**β (Math)**	**P- value**
Learning Goal Orientation	←	Self-Efficacy	.188	.997	.167	.000
Learning Goal Orientation	←	Intrinsic Value	.258	.000	.241	.000
Learning Goal Orientation	←	Test Anxiety	-.172	.000	-.129	.024
Learning Goal Orientation	←	Cognitive Strategy	.136	.000	.093	.026
Learning Goal	←	Self-Regulation	.115	.003	.047	.374

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			β (English)	P-value	β (Math)	P- value
Orientation						
Learning Goal Orientation	←	Performance (Grade)	.650	.000	.042	.791
Relative Ability Goal Orientation	←	Self-Efficacy	.234	.000	.116	.015
Relative Ability Goal Orientation	←	Intrinsic Value	.001	.985	.176	.002
Relative Ability Goal Orientation	←	Test Anxiety	-.015	.736	.129	.020
Relative Ability Goal Orientation	←	Cognitive Strategy	.179	.000	.134	.000
Relative Ability Goal Orientation	←	Self-Regulation	.020	.640	.018	.725
Relative Ability Goal Orientation	←	Performance (Grade)	.036	.862	.111	.467
Performance Avoidance Goal Orientation	←	Self-Efficacy	-.048	.575	.088	.329
Performance Avoidance Goal Orientation	←	Intrinsic Value	.179	.074	.067	.542
Performance Avoidance Goal Orientation	←	Test Anxiety	.403	.000	.599	.000
Performance Avoidance Goal Orientation	←	Cognitive Strategy	.005	.948	.219	.004
Performance Avoidance Goal Orientation	←	Self-Regulation	-.001	.994	-.121	.212
Performance Avoidance Goal Orientation	←	Performance (Grade)	-.362	.387	.510	.077
Model fit:						
CMIN/DF			2.13		2.42	
NFI			0.976		0.979	
IFI			0.981		0.982	

Published by iRepository, April 2021

https://ir.iba.edu.pk/businessreview/vol10/iss1/10
DOI: https://doi.org/10.54784/1990-6587.1318

	β (English)	P-value	β (Math)	P- value
TLI	0.954		0.979	
CFI	0.979		0.982	
RMSEA	0.044		0.049	

Discussion

The purpose of the current study was to examine the role of motivational, cognitive and performance outcomes in predicting the three different goal orientations among the junior high school students of schools operating in Lahore. The findings of the study clear our understanding of the effects of the various factors that lead to different types of goal orientations in actual classroom settings and across different disciplines.

Goal orientation and its relationship with different variables has been studied in different cultures by other researchers and they have reported different results, hence it was important to study the goal orientations' relationship with students' motivational beliefs and self-regulated learning and its effect on their academic performance in Pakistan.

Learning goal orientation was negatively related to test anxiety while it was positively related to intrinsic value, cognitive strategy use, regulatory strategy use and academic performance. Relative ability goal orientation was found positively related to intrinsic value and cognitive strategy use and performance avoidance goal orientation was also positively related to test anxiety and intrinsic value.

Results show that the motivational beliefs, self-regulation and classroom performance have important effects on the goal orientation students adopt in the classroom. The most important and strongest relationship between the variables and outcomes was found in learning goal orientation. As apparent form previous studies (Ames, 1992; Meece et al., 1988; Meece & Holt, 1993; Pintrich & Garcia, 1991), students with a learning goal orientation have more motivation and cognition. Specifically, task value, and both cognitive and self-regulatory strategy use and academic performance were positive predictors of learning goals in all subjects and showed negative relationship between the test anxiety. In summary, and according to the research done before students who focus on understanding and learning the material, have high intrinsic value and deeper cognitive engagement and self-regulation.

The results revealed that relative ability goal orientation has a positive relationship with self-efficacy and cognitive strategy use. Self-efficacy was also an important predictor of relative ability goal orientation across each subject, with a greater relative ability orientation predicting higher levels of self-efficacy as hypothesized. The results were similar to approach performance orientation in the work by Elliot and Harackiewicz (1996) where students are focused on trying to perform well compared to others and are not scared of failure. Our results indicated that students having higher levels of intrinsic value and cognitive strategy use tended to have relative ability goal orientation. This finding helps to clarify the confusion in the literature regarding the positive or negative role of relative ability goal orientation (Ames 1992; Dweck & Leggett 1998; Elliot & Harackiewicz, 1996; Meece & Holt 1993; Pintrich & Garcia, 1991). Performance avoidance goal orientation was also positively related to test anxiety. Students who adopted performance avoidance goals tended to report higher level of test anxiety.

However, some results did not support the theory. The results from our first

hypothesis indicated that there is no statistically significant relationship between learning goal orientation and self-efficacy. Where as in previous research studies it was shown that students with higher levels of self-efficacy tended to have learning goals. In contrast, a learning goal orientation in this study failed to predict students' level of self-efficacy at any subject area, suggesting that self-efficacy is not related to a learning goal orientation.

According to previous research studies, students reporting a greater focus on relative ability goal tended to report higher levels of task value, self-regulation and performance however there was no significant relationship found between relative ability goal orientation and these variables for this study.

On the other hand, students with a greater performance avoidance goal focus tended to report higher task values and high levels of test anxiety unlike the studies conducted before and there was no significant relationship between self-efficacy, cognitive strategy use, regulatory strategy use and performance. Goal orientation theory reports that students with low self-efficacy, cognition and motivation tended to have performance avoidance goals.

Implications for educators/teachers

Students are the main focus of the teachers and the coordinators when setting a particular target or when setting a paper or quiz for them. Educators want to know the goals that the students set for themselves when accomplishing or performing a particular task. Identifying factors that influence student achievement and motivation to learn in the classroom continues to be a goal of education researchers (Eggen & Kauchak, 1999). Goal orientation examines the behavior of individuals in terms of their approach towards achievement. Diener and Dweck (1980) were interested in finding as to why some students were adaptive and others were maladaptive and showed helplessness when working on certain types of tasks. They defined adaptive behaviours as those that promote the establishment, maintenance and attainment of personally challenging and personally valued goals.

Conclusions

On the bases of the findings of the study, the following conclusions were drawn.

Learning goal orientation was found significantly related to intrinsic value, test anxiety, cognitive strategy, regulatory strategy use and performance however it was insignificantly related to self-efficacy. Self-efficacy and cognitive strategy use; sub-variables of motivational beliefs and self-regulatory strategies; were found significantly related to relative ability goal orientation while intrinsic value, test anxiety, regulatory strategy use and performance were insignificantly related to relative ability goal orientation. Performance avoidance goal orientation was found significantly related to intrinsic value and test anxiety where as it was insignificantly related to self-efficacy, cognitive strategy, regulatory strategy use and performance.

This study came up with mixed results; some predictions were supported by the theory while others were not. However future research in the area is recommended.

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