Goal Orientation and Cognitive Styles of Higher Secondary Students

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Goal orientation refers to a set of concerns or a framework for processing incoming information created by a single goal. Cognitive style is the underlying construct for information processing regardless of the situation in which it is applied. The knowledge about cognitive styles helps us to understand our own mode of information processing, analyzing and utilizing information which in turn improve one's learning. Also, one's style of utilizing information may influence their motivation and emotions. The motivation and goal orientation can be effectively regulated with a proper usage of cognitive styles. This study explored the influence of cognitive styles on the goal orientation of students. 410 higher secondary students were selected through stratified random sampling and data was collected through survey by using goal orientation measure and personal style inventory. Results revealed that the higher secondary students differ in their goal orientation on the basis of gender, year of study, subject of specialization and type of school they studied. All the three type of goal orientation viz. learning, performance-approach and performance-avoidance orientation are significantly influenced by the cognitive styles. The implications are presented in this study.

Keywords: Goal orientation, Learning orientation, Performance-approach orientation, Performance-avoidance orientation, Cognitive styles

Education is not confined to the four walls of the classroom or to the limits of the school campus. By the process of education individuals should prove themselves in all spheres. Schools represent a well organized system where students spend a great deal of their time. Besides, schools have a strong impact on the motivation and personality of students. Psychology has provided vital information for the design of education based on theory and research on human learning, development and motivation. Advances in our understanding, thinking and memory, cognitive and motivational processes can contribute directly to improvements in teaching, learning and the whole enterprise of education. Meanwhile, educators concerned with the multifaceted problems of dropout, poor academic achievement, and various other factors influence the academic achievement. Researchers observed that goal orientation is a prime factor promoting the academic achievement.

Goal Orientation

Goals are broadly defined as specific representations of what the individual would like to achieve, spurring individuals to action directing their behaviour (Ames 1992, Dweck & Leggett, 1998). Goals are assumed to provide students with direction for learning behaviour especially in the terms of choice and persistence behaviour (Pintrich & Garcia, 1994). Goal-orientation theories were developed to explain achievement behaviour in academic tasks. The idea of goal orientation was introduced by "Dweck" (1986) as a set of concerns or a frame work for processing incoming information created by a single goal. He was primarily interested in the differences in motivation between students based on their beliefs in their own

abilities. He found that specific beliefs about ability were important determinants of achievement behaviour. But the key to performance was the student's purpose, i.e. the student's motivation to continue their efforts as a result of their ability beliefs (Elliot & Dweck, 1988).

Goal orientation are behavioural intentions that determine how students approach and engage in learning activities (Meece, Blumenfeld & Hoyle, 1988). Goal theory was developed as an extension of attribution theory. It is believed that students pursue goals and that each goal is associated with certain behaviour and beliefs. Student's behaviour is the function of desires to achieve particular goals. There are three types of goal orientation viz. learning orientation, performance approach orientation and performance avoidance orientation.

Learning goals are rooted in the desire to improve one's competence during a learning activity. Learning goals generally cultivate a self-based (or task-based) evaluation of one's competence, and these goals focus the student's attention on developing competence and mastering the task. Individuals with a strong learning goal orientation see effort as the means to success, and are therefore likely to be persistent when facing obstacles on their way to achievement. They tend to perceive negative feedback as valuable information on how to improve and they treat failure as a learning experience, not as a sign of insufficient ability (Dweck & Leggett, 1988).

With a performance-approach goal, the student seeks to demonstrate or prove competence, especially in the presence of an audience. Performance-approach goals generally cultivate a norm-based evaluation of one's competence, and these goals focus the student's attention on the demonstration of ability relative to that of others. Achievement in the context of a performance approach goal means, doing better than

others. Highly performance goal oriented individuals will show the mastery oriented behaviour pattern if they believe that their ability is high compared to others.

With a performance-avoidance goal, the student seeks to demonstrate or prove that he or she is not incompetent, especially in the presence of an audience. Performance-avoidance goals cultivate a norm-based evaluation of one's competence, and these goals focus the student's attention on the avoidance or a demonstration of low ability relative to that of others. Achievement in the context of a performance avoidance goal means not doing worse than others. The performance avoidance goal is focused on avoiding incompetence, where individuals see the achievement setting as a threat and seek to escape it (Elliot & Harackiewicz, 1996).

Cognitive Styles

Information processing is one of the important factors for understanding human behaviour. Each individual has a way of gathering and processing information. Barnard (1966) suggested that understanding the success of everyday affairs of an individual requires the consideration of two types of mental processes; non-logical and logical. The non-logical process is termed intuitive thinking, which uses insight in most situations. The logical process uses reasoning in most situations. The existence of such mental processes has been proved by neurological research. Sperry (1964) found that the left-brain is responsible for logical/rational functions and the right brain for intuitive/judgemental functions.

Taggart and Robey (1981) based on researches pointed out that the two halves of the brain differ in their function and these are popularly known as left/right hemisphere model of information processing in the human brain. Taggart and Valenzi (1990) in their HIP metaphor summarized that the left mode functions involve planning, analysis and

control and the right mode functions involve vision, insight and sharing. Hemispheric dominance is also referred to as cognitive style. This involves how one processes information based on different capabilities of the left and right (cerebral) hemispheres of the brain (Coleman & Zenhausern, 1979). Cognitive style is the underlying construct for information processing regardless of the situation in which it is applied (Furnham, 1995).

People have preferred habitual approaches to cognition including perception, thinking, storage in memory and retrieval. Cognitive style is a high-level heuristic that organizes and controls behaviour across situations. Cognitive style organizes lower-level strategies, operations and dispositions, including abilities, in complex sequential processes, such as problem-solving and learning (Messick, 1978). Miller (1987) viewed cognitive styles as "broad dispositions and higher-order 'meta-strategies' that influence the individual's attempt to adjust to situational demands". In order to take into account that the interaction between the individual and the environment is a reciprocal action, it is here proposed that this definition is extended to cover the individuals attempt to adjust and to influence situational demands. According to Furnham (1995), cognitive style is the underlying construct for information processing regardless of whether the situation in which it is applied is formal or informal in nature, whereas learning style is exclusively related to approaches in a learning situation. The focus of cognitive style is on the form rather than on the content of the activity. Cognitive style refers to the question of how, manner in which behaviour occurs, rather than what, the kind of information being processed (Messick, 1978).

Hayes and Allinson (1998) base their theory of intuitive-analytic cognitive style on Miller's (1987) information-processing model in an attempt to sort out the apparent overlap in style dimensions and to integrate the many concepts of cognitive style. Miller categorizes all styles into two, analytic or holistic, depending on whether it is a style that is based on activity in the left or the right hemisphere of the brain. The model distinguishes between similarities and differences in style dimensions, and relates the dimensions to the cognitive activities of perception, thought and permanent memory, and the interaction between these.

According to Hayes and Allinson (1996) left and right hemisphere cognitive styles are two ends of a uni-dimensional construct; analytic style and intuitive style. Intuitive tend to be nonconformist, prefer an open-ended approach to problem solving, rely on random methods of exploration of the environment, remember spatial images well, and work best when the situation requires global or holistic assessment. The analysts tend to be compliant, favour a structured approach to problem solving, depend on systematic methods of exploration, and recall verbal and written material well and work best when the situation requires step by step systematic assessments. Taggart and Taggart (1991) developed their Human Information Processing Survey (HIP). The HIP measures six different modes such as planning, analysis, and control (Rational Style) as well as vision, insight and sharing (Intuitive Style). The HIP survey self assessment tool can be used in the academic classroom and corporate training   program to provide rich and powerful feedback.

Need for the Study

One of the most important challenges of education is motivating the students. Without proper motivation, the students may never get off to the right start in their education. Motivation is a process of arousing, maintaining and controlling student's interest in activities. We have both intrinsic and extrinsic motivation. Goal orientation is one of the concepts which emphasize the role of intrinsic motivation for

the betterment of learning. Goal orientation is a useful construct for understanding how people develop, attain or demonstrate competence in learning and performance. Students' goal orientations are presumed to be important mediators and determinants of behavioural cognitive and affective patterns in learning or achievement. Human resources can be managed and developed more effectively with knowledge of cognitive styles and environmental demands (Hayes & Allinson, 1998). Researchers suggested that cognitive styles significantly affect students' learning because they refer to how learners process and organize information (Freddy et al. 2011). The knowledge about cognitive styles helps us to understand our own mode of information processing, analyzing and utilizing information which in turn improve one's learning. Also, one's style of utilizing information may influence their motivation and emotions. The motivation and goal orientation can be effectively regulated with a proper usage of cognitive styles. It is accepted by the educationists that the higher secondary is a crucial stage in students' life. The success and failure in this stage determines their future and therefore understanding their motivation becomes important. Hence, it is imperative to explore the role cognitive styles on the goal orientation of higher secondary students.

Hypotheses

1. Male and female students differ in their goal orientation.

2. Higher secondary first year and second year students differ in their goal orientation.

3. Students with biology and computer science specialization differ in their goal orientation.

4. Students from private and government schools differ in their goal orientation.

5. The cognitive styles of higher secondary students have significant influence on their goal orientation.

Method

Sample

The population of this study comprise of the higher secondary students in Harur, Tamil Nadu. There are 10 higher secondary schools in Harur surrounding, out of which four schools were selected at random. Stratified random sampling method was adopted to select the sample. in total 863 students in all the four schools, out of which 435 students were selected.

Tools:

(i) Goal Orientation Measure by Zweig & Webster (2004): This scale consists of 21 statements which explore the different dimensions of goal orientation such as performance approach, performance avoidance and learning orientation. There are seven response categories from strongly disagree to strongly agree. The measure comprised three sub scales, each contain seven items. The total score of all the 7 items in each sub scale is the indicator of respective goal orientation. The authors have established internal consistency reliability for the three scales. For learning orientation is 0.85, performance approach orientation is 0.82, and performance avoidance orientation is 0.69. The test-retest reliability coefficients for the goal orientation scale at the time 1 and time 2 are as follows: learning orientation is 0.73, performance approach orientation is 0.84, and performance avoidance orientation is 0.78. These correlation co-efficient values suggest that goal orientation is stable over time. The authors ensured both content and construct validity. The convergent validity of the 3 scales are; learning orientation and learning, is 0.87, performance approach orientation and prove is 0.79, performance avoidance orientation and avoid is 0.81.

(ii) Personal Style Inventory by Taggart and Taggart (1991): It explores the people's dominant style of functioning whether logical

or intuitional. This scale consists of 30 statements which explore the different dimensions of personal styles as planning, analysis, control, vision, insight, and sharing. There are six response categories from never to always. The total score of the first three dimensions planning, analyzing, and control denotes individuals score for logical style. Rest of the three dimensions, vision, insight and sharing is for intuitive style. The test retest reliability of this tool is found to be 0.83. The split - half reliability is 0.86. This tool possesses both content validity and constructs validity. The 'r' value of this tool with the human information processing survey by Torrance and Taggart is found to be 0.76. The predictive validity of this tool with the cognitive ability measure is 0.81.

Results and Discussion

From the Table 1, it is found that the 't' values are significant for the entire goal orientation dimensions viz. performance approach, performance- avoidance and learning orientation. Hence, the hypothesis is accepted. It is concluded that male and female students differ significantly in their goal orientation. It is interesting to observe from the table that the female students have shown significantly higher mean score in the performance approach orientation. The wider exposure and the improved educational opportunities for females in today's world may influence their performance approach orientation of female students. Also, women are socially better trained than men, which would in turn motivate the women to attain a specific level of excellence. Similarly in the learning orientation female students have higher mean scores. When compared to olden days, women enjoy better opportunities, freedom of expression, status etc. These factors would have motivated the female students to learn quicker and better than men.

It is quite interesting to note down that female students have shown significantly higher mean in performance- avoidance orientation. Performance avoidance orientation goals are activated on the basis of evaluation of one's competence, achievement and so on. In our society females get more negative comments when they failed in their endeavour. Also, females are more sensitive to failures than success. Due to the fear failure, they have developed higher tendency towards avoidance orientation than males. If the females are rewarded for their success like the males get in the society, this tendency could be reduced and it would make them more efficient. It is concluded that the female students have higher goal orientation than the male students.

Table 2, reveals that the 't' values are significant for performance approach and avoidance orientation, where as it is not significant for learning orientation. Hence, the hypothesis is partly accepted. It is concluded that the first and second year students differ in their performance approach and performance avoidance goal orientation. It is important to notice from the table the second year students have shown significantly higher mean than their counter part. The individuals with a specific purpose set performance approach goals. At the higher secondary level the second year students have the clarity that only based on the marks in this stage their future will be decided. They must approach the task with a confidence better than they are in the first year. Also, during the tenure of their study they learnt that how to set priorities and approach it. This would be the reason for the higher mean score of the second year students.

It is equally important to observe from the table that the second year students have significantly higher mean in the performance avoidance goal orientation. At the second year level, students may have the clear idea about their capability and they can predict about their success in the examination. Also,

Table 1. Goal Orientation of Students: Gender Wise Comparison

Goal Orientation	Male		Female		't' value
	M_1	SD_1	M_2	SD_2	
Performance Approach Orientation	32.57	6.86	35.98	7.23	4.88*
Performance Avoidance Orientation	31.37	6.81	35.26	7.38	5.54*
Learning Orientation	40.26	6.72	44.84	6.79	6.79*

*$p<0.05$

Table 2. Goal Orientation of Students with respect to their Year of Study

Goal Orientation	First Year		Second Year		't' value
	M_1	SD_1	M_2	SD_2	
Performance Approach Orientation	32.46	4.97	36.18	6.69	6.35*
Performance Avoidance Orientation	30.17	7.48	36.57	7.26	8.79*
Learning Orientation	41.8	5.9	42.72	6.17	1.54

*$p<0.05$

Table 3.   Goal Orientation of Students based on their Subject of Study

Goal Orientation	Biology		Computer Science		't' value
	M_1	SD_1	M_2	SD_2	
Performance Approach Orientation	36.62	7.91	32	6.72	6.38*
Performance Avoidance Orientation	33.84	7.48	32.9	7.96	1.23
Learning Orientation	44.5	8.19	40.02	7.13	5.92*

*$p<0.05$

Table 4. Goal Orientation of Students with respect to the Type of School

Goal Orientation	Private School		Government School		't' value
	M_1	SD_1	M_2	SD_2	
Performance Approach Orientation	32.41	7.09	36.14	9.12	4.58*
Performance Avoidance Orientation	35.11	8.31	31.52	6.57	4.87*
Learning Orientation	43.53	6.81	41.57	6.19	3.05*

*$p<0.05$

they could have faced number of model examinations based on which they can assess their own performance. Above all they get consistent feedback from their teachers. These factors may influence their self-confidence negatively, they may fear about the outcome of examinations and hence they may have higher tendency in performance avoidance orientation. In the learning orientation first and second year students do not differ significantly. The sample of this study comprise of higher secondary students with biology and computer science specialization in addition to the common subjects physics and chemistry. Only with a specific goal they could have selected their course and hence they want to learn as much as possible during the course of study. Due to this the first and second year students do not differ in their learning orientation.

From the table 3, it is observed that the 't' values are significant for performance approach and learning orientation whereas, not significant for performance avoidance orientation. It is concluded that biology and computer science students differ in their performance approach and learning orientation. From the table it is noticed that the students with biology specialization have shown higher score in both performance approach and learning orientation. The biology subject is found to be more difficult than the computer science subject at the higher secondary level. But, the biology students have wider opportunities to select the course of study. Even we can see the

aspirants for Medical and Para-medical courses are only from the biology subjects. Unless they approach the task with more focus, it would be difficult for them to thrive in the state level competition. Hence, they may strive hard to get success. This would enhance the performance approach and learning orientation of biology students.

At the same time, it is noticed that the students do not differ in their performance avoidance orientation. Both biology and computer science subjects have scope for professional courses as well as there is a fear of failure among all of these students. Hence, they may not differ in their avoidance tendency. In general, it is concluded that the students with biology specialization have higher tendency toward performance approach and learning orientation.

From the Table 4, it is observed that the 't' values are significant for all the goal orientation dimensions. Hence, the hypothesis is accepted. It is concluded that there is a significant difference in the goal orientation of students from government and private schools. It is noticed from the table that the students from the government schools have higher tendency in performance approach orientation. If we take the present situation in government schools, students have to approach the task independently with their own effort. Also, they have more freedom of expression when compared to the private school students. Hence, they approach the tasks on the basis of their own need and preferences. This would help them to develop more performance approach orientation. In contrast, the students from private schools have higher score in performance avoidance orientation. In private schools, students are under the complete control of teachers, facing continuous examinations and they get the feedback about their performance periodically. Even, their parents would have been called by the administration and warned for their failures. So, they tend to avoid things rather than facing it. This may be the reason

for higher score of private school students in performance avoidance orientation.

It is also observed that the students from private schools have shown higher learning orientation. Learning is a process, which would be promoted by providing suitable opportunity, better environment, and sophisticated facilities and so on. The private schools have better classroom and other facilities than the government schools. These enriched opportunities would have promoted the learning orientation of private school students. It is stated from the above discussion that the students from government schools have higher tendency in performance approach orientation where as the students from private schools have higher tendency in performance avoidance and learning orientation.

From the table 5, it is found that the 't' values for the regression co- efficient are

Table 5. Influence of Cognitive Styles on the Goal Orientation of Students: Regression Analysis

Independent Variable	Dependent Variable	β	't' Value*
Planning	Performance Approach Orientation	0.356	6.814
Analysis		0.238	3.751
Control		0.204	2.277
Logical mode		0.342	4.503
Vision		0.241	4.351
Insight		0.142	2.695
Sharing		0.191	3.532
Intuitive mode		0.288	5.874
Planning	Performance Avoidance Orientation	-0.211	-5.182
Analysis		-0.256	-2.571
Control		-0.131	-2.877
Logical mode		-0.274	-4.503
Vision		0.271	4.581
Insight		0.197	2.196
Sharing		0.179	3.368
Intuitive mode		0.221	4.124
Planning	Learning Orientation	0.496	8.914
Analysis		0.358	7.267
Control		0.311	6.115
Logical mode		0.437	10.716
Vision		0.361	7.601
Insight		0.216	4.244
Sharing		0.314	6.502
Intuitive mode		0.423	9.891

*p<0.05

significant for almost all the cognitive styles. Hence, the hypothesis is accepted. It is concluded that the cognitive styles of students have significant impact on their goal orientation. It is important to observe from the table the all the three type of goal orientation are significantly influenced by the cognitive styles. In other words the goal orientation is highly related to both logical and intuitive styles. The logical styles are associated with the left-brain whereas the intuitive styles are related to the right brain. The right brain deals with feeling and the left-brain deals with thinking. Goal orientation involves both cognition and emotion and it is a whole brain activity (Kumar & Kadhiravan, 2010). The influence of both logical and intuitive cognitive styles on the goal orientation revealed the same.

It is also observed from the table that the logical styles have negative influence on the performance avoidance orientation whereas the intuitive styles have positive impact on the performance avoidance. The logical mode styles promote the tendency to approach the task rather than avoiding it. The negative relation between the logical mode and the performance avoidance orientation confirms the same. In general, it is concluded that the cognitive styles of higher secondary students have significant influence on their goal orientation. This finding implies that the whole brain functioning is required to enhance our goal orientation.

Implications

The finding of the study reveals that female students have better goal orientation than the males. Already it is observed from the result of the higher secondary examination that there is a detoriation in the achievement percentage of male students. This gives an indication that suitable measures should be taken to enhance the goal orientation of male students which in turn enhance their academic achievement. Also, it is noticed from the study that higher secondary second year students have higher avoidance orientation. Providing suitable counselling to them may reduce this tendency of the students. Another finding of this study is that the students with computer science specialization have lesser goal orientation. Already, it is realized that the computer science syllabus taught in the schools have to be improved according to the current needs of the society. Once if the standard of the syllabus is raised at par with the world of work students, will be motivated more to learn the subject and acquire the skills. Further, it is observed from this study that the students of private schools have higher avoidance orientation. It gives the warning signal to private schools that they should change their practices, control etc. thereby the teaching and learning will be more effective. By understanding the performance approach, performance avoidance and learning orientation we can provide guidance and counselling to students which will help them to set proper goals in their life. The cognitive styles have significant impact on the goal orientation of higher secondary students. Hence, the teachers and curriculum planners should consider these variables while designing the learning materials and activities. The suitable measures should also be taken to enhance and sustain the motivation of students at all levels of education.

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