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ACADEMIC ACHIEVEMENT GOAL ORIENTATION OF PUPIL-TEACHERS IN RELATION TO THEIR DEMOGRAPHIC VARIABLES

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ABSTRACT

Present study examined the academic achievement goal orientation of pupil-teachers in relation to their demographic variables. 140 pupil teachers selected randomly from different B.Ed colleges of Sambalpur University of Odisha involved as sample. Academic Achievement Goal Orientation Scale designed and standardized by Christopher Was (2006) was used for the collection of data. The data were analysed by using percentage and t-test. The study indicates that i) 34% of pupil teachers have high academic achievement goal orientation, 40% have moderate academic achievement goal orientation and 26% have low academic achievement goal orientation ii) there exists a significant difference in mastery goal orientation of male and female pupil-teachers at 0.01 level and iii) Arts and science pupil teachers differ with regards to mastery orientation and work avoidant aspects of goal orientation at 0.05 level. The educational authority may take initiatives enhancing achievement goal orientation of teacher trainees.

Key-words: Academic achievement, Pupil Teachers, Demographic Variables.

Introduction

The effectiveness of a system of education is mainly dependent upon its teachers and teacher is the principal agent for successful implementation of plan and policies. In other words, no plan and policies will be successful without effective and quality teacher. The role of the teacher has rightly been emphasized in the Programme of Action (POA) of the National Policy on Education, 1986 that the teacher is the principal means for implementing all educational programmes and of the organization of education. Programme of Action (1992) observed, "Teachers performance is the most crucial input in the field of education. Whatever policy may be laid down, in the ultimate analysis these have to be interpreted and implemented by teachers as much through their personal example as through teaching learning process". Therefore teacher needs to be educated /trained properly for better discharge of duties and responsibility.

Despite of wider aims, comprehensive curriculum, sophisticated equipments, educational policies, different schemes in the field of education will be useless in the absence of competent teachers .Teacher occupies a vital position in teaching learning process. The role of the teachers has been changed from the transmitter of knowledge / information to facilitator of learning. Teacher also has responsibility in community development, social change and reformation and national development.

Teacher education has a special role to play for quality improvement of school education by educating both pre-service and in-service teachers. Pre-service teacher education equips prospective teacher both theoretical as well as practical skills and understanding on different aspects of school education. But due to lack of proper academic goal orientation of prospective teachers, teacher education fails to develop good quality teachers. Academic goal orientation plays a significant role

in shaping pupil teachers knowledge and skills during teacher training course.

Academic goal refers to motives of an academic nature that students use for guiding their classroom behaviour. As such, these goals can encourage the students to pursue different objectives in the academic or school situation. Goal orientation theorists have defined achievement goals as the reason which one engages in an achievement task. Fuente (2004) defines academic goals as motives of an academic nature that students use for guiding their classroom behaviour. The specific type of goals one sets determines the personal experience one has followed to get success or failure of the task in which one engaged. Academic achievement goal orientation is defined as an individual's set of beliefs that reasons why they approach and engage in academic tasks (Printrich, 2000). Academic achievement goal is one of the motivating factors for success in any task. In teacher education it determines effectiveness of pupil teacher in realising purpose of teacher education.

Need of the Study:

Over the past few decades, achievement goal theory has emerged as prevalent conceptualization of motivation in the academic setting. Researchers have found much evidence that students' goal in the academic tasks are associated with a variety of academic behaviour and outcomes (Ames, 1992). One factor that is associated with student goal adoption is perception of the classroom goal structure. Teachers' goals, beliefs and approaches to instruction are instrumental in creating the classroom structure. Pre-service teachers' perceptions of the goal structure of their respective teacher certification programs were significantly related to the goals that they adopted as learners in their programme. In addition these pre-service teachers enter the teaching profession with a history of their own goals as learners. Given these multiple sources of influence, it would be of value to understand the goal that novice teachers adopt in the classroom, particularly in terms of designing teacher certification programme that would encourage the endorsement of more adoptive goals in teaching. By tailoring instrumental practices to reflect those goals, teachers may be able to promote the optimal development and achievement of their students.

Elliot and McGregor (2001) had developed an achievement goal orientation model that delineates the conditions under which mastery and performance goals are most beneficial. Performance goals may in fact, work in a student's favour. For instance a student who seeks to attain high grades may put in more time and effort on assignments, which reflects a performance orientation. For another student, the motivation underlying behaviour is not toward performing well, but avoids performing poorly and the consequences to one's self-image resulting from failure. In this model performance avoidance goals are associated with task anxiety, fear of failure and perhaps lower grades. Further, task avoidant behaviours, such as procrastination, have been linked to performance avoidance goals (Tuckman, 1991). Goal setting is considered to be extremely important behaviour. Good planning and goal setting behaviour positively affects performance on any task. In an organizational context goal-setting interventions have a positive effect on performance by providing the feedback and motivation to succeed at work and academic performance.

Therefore, it is important to know the level of academic achievement goal orientation of pupil teachers. This would give insight to explore academic achievement goal orientation of pupil-teachers in relation to their demographic variables.

Objectives

1. To ascertain the academic achievement goal orientation of pupil-teachers.
2. To compare the academic achievement goal orientation of male and female pupil-teachers.
3. To compare the academic achievement goal orientation of arts and science pupil-teachers.
4. To compare the academic achievement goal orientation of rural and urban pupil-teachers.

Hypotheses

1. There is no significant difference in academic achievement goal orientation of male and female pupil- teachers.
2. There is no significant difference in academic achievement goal orientation of arts and science pupil- teachers.
3. There is no significant difference in academic achievement goal orientation of rural and urban pupil- teachers.

Procedure

Descriptive survey method was employed to find out level of academic goal orientation of pupil teachers. The study involved 140 pre-service teachers (60 male and 80 female pre-service teachers) as sample. They were selected randomly from two B.Ed colleges of Sambalpur University, Odisha.

Academic achievement goal orientation scale by Christopher Was (2006) was used to ascertain the academic achievement goal orientation of pre-service teachers. The scale consists of 34 items covering four dimensions namely, Mastery orientation, Performance approach, Performance avoidant and Work avoidant. Each statement had six alternatives (Very Untrue, Mostly Untrue, Somewhat Untrue, Somewhat True, Mostly True and Very True) from which a respondent has to choose anyone, which candidly express his response. The scale value for six alternatives are 1-very untrue, 2-mostly untrue, 3-somewhat untrue, 4-somewhat true, 5- mostly true and 6-very true. Individual score was obtained by adding all scale value. The validity of the scale was estimated by using Amos 5 software which allows direct testing of factor loading of each item in the measure on its predicted subscale or factor. The chi-square test for predicted model was significant (1465.51). For reliability, Cronbachs Alpha was calculated, which ranges from .64 to .81.

The demographic data of the participants were gathered via the information sheet. In the information sheet, data of the pupil teachers i.e. their name, gender, stream, class, locality, type of institutions, date of birth and academic achievement were included.

The collected data were analysed by using percentage, mean, SD and t test and accordingly interpretation were made.

Data Analysis

First objective of the study was to study the academic achievement goal orientation of pupil-teachers. For this investigators, categorised pupil teachers as High, Moderate and Low academic achievement goal orientation on basis of score. The table-1 presents number and percentage of pupil teachers belonging to different category of academic achievement goal orientation.

Table- 1: Academic achievement goal orientation of pupil-teachers

Scores Range	N and %	Type of Academic achievement goal orientation
Above 141	48 (34)	High academic achievement goal
120 -140	56 (40)	Moderate academic achievement goal
Below 120	36 (26)	Low academic achievement goal

Number in parentheses indicates percentage

From table-1 it is apparent that out of total 140 pupil teachers 48 pupil teachers i.e. 34% have high academic achievement goal orientation, 56 pupil teachers i.e. 40% have moderate academic achievement goal orientation and 36 pupil teachers i.e. 26% have low academic achievement goal orientation. It may be said that more (40%) pupil teacher have moderate academic achievement goal orientation and only 34% of pupil teachers have high goal orientation.

Second objective of the study was to compare the academic achievement goal orientation of male and female pupil-teachers. The investigator compared different aspect of academic achievement goal orientation of male and female pupil teacher by using t-test, which is presented in table-2.

Table-2: Academic achievement goal orientation of male and female pupil-teachers

Variable	Group	N	Mean	SD	't' value	Level of significance
Academic achievement goal orientation	Male	60	126.55	18.45	1.54	Not significant at .05 level
	Female	80	132	23.44		
Mastery orientation	Male	60	53.52	12.53	3.15	Significant at .01 level
	Female	80	59.67	9.70		
Performance approach	Male	60	31.48	4.62	1.40	Not significant at .05 level
	Female	80	32.63	5.07		
Performance avoidance	Male	60	22.67	5.88	0.43	Not significant at .05 level
	Female	80	23.08	5.48		
Work avoidant	Male	60	18.79	3.85	0.07	Not significant at .05 level
	Female	80	18.83	2.63		

df= 138

It can be observed from the table-2 that the calculated't' value on academic achievement goal orientation of male and female pupil-teachers is 1.54 which is not significant at .05 level. Hence null hypothesis 'there is no significant difference in academic achievement goal orientation of male and female pupil-teachers, is accepted. The result indicates that male and female pupil teachers do not differ in academic achievement goal orientation.

The investigator also compares different aspects of goal orientation of male and female teachers. It was found from table-2 that't' value on mastery goal orientation of male and female

pupil-teachers is 3.15 which is statistically significant at .01 level. So it may be said that there exists a significant difference in mastery goal orientation of male and female pupil-teachers. This result is supported by study in which it was found that female pupil teachers are more mastery goal orientated than the male pupil teachers.

But the't' value on performance approach, performance avoidance and work avoidance of male and female pupil-teachers are 1.40, 0.43 and .07 respectively, which are not significant at .05 level. It seems that there exists no significant difference in performance approach, performance avoidance, and work- avoidance orientation of male and female pupil-teachers. This finding is supported by Prinitrich & Schunk (2008), who reported that there is no significant difference in performance approach, performance avoidance and work-avoidance goal orientation of male and female pupil-teachers.

Third objective of the study was to compare the academic achievement goal orientation of arts and science pupil-teachers. This objective has been analyzed by using t-test, which is presented in table-3.

Table-3: Academic achievement goal orientation of arts and science Pupil-teachers

Variable	Group	N	Mean	SD	't' value	Level of significance
Academic achievement goal orientation	Arts	68	127 .35	19.2 5	1.51	Not significant at .05 level
	Science	72	133	24 .64		
Mastery orientation	Arts	68	52 .72	12.6 3	4.37	Significant at .01 level
	Science	72	60 .77	8.6 0		
Performance approach	Arts	68	30.38	4.5 2	1.28	Not significant at .05 level
	Science	72	31 .4 3	5.1 7		
Performance avoidance	Arts	68	21 .67	5.9 8	1.57	Not significant at .05 level
	Science	72	23.1 8	5.3 8		
Work avoidant	Arts	68	16 .59	4.6 5	4.03	Significant at .01 level
	Science	72	19.1 3	2.3 3		

df= 138

It is observed from the table-3 that the calculated't' value on academic achievement goal orientation of arts and science pupil-teachers is 1.51 which is not significant at .05 level. Hence the null hypothesis 'there exists no significant difference in academic achievement goal orientation of arts and science pupil-teachers, is accepted. It can be inferred that arts and science pupil teachers do not differ with regard to academic goal orientation.

The investigators also calculated t- value on mastery goal orientation and work avoidance of arts and science pupil-teachers separately, which are significant at 0.01 level. Hence, it may be concluded that arts and science teachers differ with regards to mastery orientation and work avoidant aspects of goal orientation. This finding of the present investigation might be due to the fact that science subject required mastery of the subject and that's why science students possess less work avoidance behaviour.

But the't' value on performance approach and performance avoidance of arts and science pupil-

teachers are 1.28 and 1.57 respectively, which are not significant at .05 level. It may be said that there exists no significant difference in performance approach and performance avoidance orientation of arts and science pupil-teachers.

Fourth objective of the study was to compare the academic achievement goal orientation of rural and urban pupil-teachers. The investigator compared goal orientation by using t-test, which is presented in table-4.

Table-4: Academic achievement goal orientation of rural and urban pupil-teachers

Variable	Group	N	Mean	SD	't' value	Level of significance
Academic achi evement goal orientation	Rural	65	125.92	17.34	1.76	Not significant at .05 level
	Urban	75	13 1.89	22 .61		
Mastery orientation	Rural	65	54.61	12. 3 1	1.57	Not significant at .05 level
	Urban	75	57 .7 3	10 .92		
Performance approach	Rural	65	31. 62	4.6 8	1.41	Not significant at .05 level
	Urban	75	32. 75	5. 13		
Performance avoidance	Rural	65	21 .83	5. 67	1.7	Not significant at .05 level
	Urban	75	23.0 2	5.31		
Work avoidant	Rural	65	18. 85	3. 96	0.31	Not significant at .05 level
	Urban	75	19 .3 5	2. 36		

df= 138

It is observed from the table-4 that the calculated't' value on academic achievement goal orientation of rural and urban pupil-teachers is 1.76 which is not significant at .05 level. Hence the null hypothesis 'there exists no significant difference in academic achievement goal orientation of rural and urban pupil-teachers, is accepted. It may be concluded that rural and urban pupil teachers do not differ in academic achievement goal orientation.

The calculated t-value on mastery goal orientation, performance approach, performance avoidance and work avoidance of rural and urban pupil-teachers are 1.57, 1.41, 1.71 and 0.31 respectively, which are statistically not significant at .05 level. So it may be said that there exists no significant difference in mastery goal orientation, performance approach, performance avoidance, and work- avoidance orientation of rural and urban pupil-teachers.

Major Findings and Conclusion:

1. 34% of pupil teachers have high academic achievement goal orientation, 40% have moderate academic achievement goal orientation and 26% have low academic achievement goal orientation.
2. There is no significant difference in academic achievement goal orientation of male and female pupil-teachers at 0.05 level. Male and female pupil teachers do not differ in academic achievement goal orientation.
3. There exists a significant difference in mastery goal orientation of male and female pupil-teachers at 0.01 level. There exists no significant difference in performance approach,

performance avoidance, and work- avoidance orientation of male and female pupil-teachers at 0.05 level.

4. There exists no significant difference in academic achievement goal orientation of arts and science pupil-teachers at 0.05 level. It may be inferred that arts and science pupil teachers do not differ with regard to academic goal orientation.
5. Arts and science teachers differ with regard to mastery orientation and work avoidance aspects of goal orientation at 0.05 level. There exists no significant difference in performance approach and performance avoidance orientation of arts and science pupil-teachers at 0.05 level.
6. There exists no significant difference in academic achievement goal orientation of rural and urban pupil-teachers at 0.05 level. It may be concluded that rural and urban pupil teachers are not differ in academic goal orientation.
7. There exists no significant difference in mastery goal orientation, performance approach, performance avoidance, and work- avoidance orientation of rural and urban pupil-teachers at 0.05 level.

Educational Implications

The results of the present study have obvious implications for both educational theory and practice. The reasons for low achievement goal orientation may help educational administrators, curriculum framers and policy makers in adopting correct remedial measures. Another implication of present study is teaching pupil-teacher to set specific proximal goals for their academic work.

Student applicants could be screened on the basis of both high mastery as well as high performance orientation. If administrators, policy makers and other instructors wish to improve the achievement levels and the general satisfaction of students, they may be well advised to screen and inspire the type of goals their student pursue. As students can and do pursue multiple goal, it is important to understand how different type of achievement goals interact to influence achievement and satisfaction. Therefore knowledge on how goal orientation develops, changes and how it affects motivational and educational outcomes will be tremendously useful to everybody who is involved in shaping and improving the academic learning environment.

References:

1. Ames, C. (1992). Classrooms: Goals, structures and student motivation. **Journal of Educational Psychology,** 84 (3), 261-271.
2. Balkis, M., and Duru E. (2009). Prevalence of academic procrastination behaviour among pre-service teachers and its relationship with demographics and individual differences. **Journal of Theory and Practice in Education,** 5 (1), 18-32.
3. Elliot, A.J. and McGregor, H.A. (2001). A 2x2 achievement goal framework. **Journal of Personality and Social Psychology,** 80, 501-519.
4. Fuente, J. (2004). Recent perspectives in the study of motivation: Goal orientation theory. *Electronic* **Journal of Research in Educational Psychology,** 2 (1), 35-62.
5. Howell, A.J. and Watson D.C. (2007). Procrastination: Association with achievement goal orientation and learning strategies. **Personality and Individual Differences,** 43, 167-178.
6. Jeannetta G.W., Shannon K.S. and Erica, E.F. (2008). The relationship among self-compassion,

motivation and procrastination. **American Journal of Psychological Research,** 4, 37-44.

7. Klassen, M. R, and Kuzucu, E. (2008). Academic procrastination and motivation of adolescents in Turkey. **Educational Psychology,** 29, 69-81.
8. McGregor, H.A., and Elliot, A.J. (2002). Achievement goals as predictors of achievements: Relevant process prior to task engagement. **Journal of Educational Psychology,** 94, 381-395.
9. Moller, A.C. and Elliot, A.J. (2000). The 2 x 2 achievement goal frame work: An overview of empirical research. **Progress in Educational Psychology Research.**
10. Pintrich, R.R. (2000). The role of goal orientation in self regulated learning. In M. Boekaerts, P.R. Pintrich, & M. Zeidner (eds), **Handbook of self regulation** (451-502) New York: Academic press.
11. Rothblum, E. D., Solomon, L. J., and Murakami, J. (1986). Effective, cognitive and behavioural differences between high and low procrastinators. **Journal of Counseling Psychology,** 33, 387-394
12. Schraw, G., Wadkins, T. and Olafson, T. (2007). Doing the things we do: A grounded theory of academic procrastination. **Journal of Educational Psychology,** 99 (1), 12-25.
13. Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self regulatory failure. **Psychology Bulletin,** 133, 65-94.
14. Tuckman, B. W. (1991). The development and concurrent validity of the procrastination scale. **Educational and Psychological Measurement,** 5, 473–480.
15. Was, C. (2006). Academic achievement goal orientation: Taking another look. **Electronic Journal of Research in Educational Psychology,** 10, (4 & 3), 529-550.
16. Wolters, C.A. (2003). Understanding procrastination from a self regulated learning perspective. **Journal of Educational Psychology,** 95, 179-187.

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APPLICATION OF VALUE BELIEFS NORM THEORY IN THE CONTEXT OF ENVIRONMENTAL ACTION OF THE TWELFTH GRADE STUDENTS

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Abstract

The present study aimed to explain Twelfth Grade students' environmental action by applying Value-Belief-Norm theory. The study is based on the responses of 480 students comprising both boys and girls, having English and Bengali as their media of instruction, situated in the Howrah and Kolkata. Descriptive survey method was employed. To asses environmental values, beliefs and norms the Bengali adaptation of Schwartz's universal scale- Schwartz, 1992; Stern et al., 1999 scale was used. A scale constructed by Chakraborti and Sengupta (2005) was applied for measuring environment related behavior. The analysis of the data showed that both boys and girls were significantly different in matter related to environmental value and beliefs score. The correlation matrix was done for understanding the relation between VBN theory and environmental action. The findings revealed that value, belief, norm and environmental action scores are positively and significantly correlated. Further the result of multiple regression analysis demonstrates that environmental action can be predicted from value and norm scores.

Keywords: Value-Belief-Norm Theory, Environmental Action and Twelfth Grade Students.

Introduction

Encouraging young people's motivation to protect our environment is an important goal of Environmental Education. From the beginning of its history Environmental Education has sought to influence individuals and communities to recognize their civic responsibility (UNESCO/UNEP, 1978). It is unquestionable today that Environmental Education should become an integral part of our school curriculum. The National Curriculum Framework for School Education (NCFSE, 2000) highlights the need for including Environmental concerns at all the levels of schoolings. However very little evidence exists as to find out how educational programmes should be designed to influence students' positive perception towards environmental issues. At present most of the educational researcher are trying to identify psychological factors predicting environmental friendly behaviour and reducing the deterioration of environment. One such theory is Value-Belief-Norm (VBN) theory proposed Stern et al. (1999) which may be applied in designing the programmes of Environmental Education in our school curriculum for environmental protection.

Most researchers recognize human behaviour as the main cause of today's environmental degradation. Therefore the solution of environmental problems such as global warming, climate change relies on more educated students who are conscious about environmental problems and the measures needed to rectify them. As the future of our planet is in the hands of today's children, the "environmental education investment" to be made in children. It will be an investment made in our planet (Atasoy and Erturk, 2008; Bozkurt and Cansungu, 2002; Yilmaz, Morgil, Aktug and Gobekli, 2002). Environmental Education (EE) is a cross curriculum topic promoting global awareness, sustainable living and active citizenship (Talero, 2004). EE is a process of recognizing values and clarifying concepts in order to develop skill and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture, his biophysical surrounding. Environmental education also

entails practice in decision-making and self formulation of a code of behaviour about issues concerning environmental qualities (Palmer, 1998).

With reference to Stern, et. al. (1999) Value Belief Norm theory, this paper tries to mobilize values beliefs and norms and their implication in environment related practices.. In this paper we stress on both theoretical and practical implications of environmental education in order to understand secondary school students perception towards environmentalism. The VBN theory is principally founded on (Schwartz and Howard, 1981; Schwartz, 1977) theory of Norm-Activation-Model (NAM) which suggests a focus on moral values and personal norms to explain altruistic behaviour i.e. behaviour that reflects an unselfish concern for the welfare of others. The VBN model is presented in a way linking all the three aspects- values, beliefs and norms. An important element of VBN theory is that the link from values to environmentalism is mediated by particular beliefs, such as beliefs about which kind of people or things are affected by environmental conditions (AC action consequences). And about whether there are individual actions that could alleviate threats to valued person or things . Thus environmentalists' personal norms can be influenced by these beliefs (Stern, 2000).

Values indicate the importance of a thing, a general conception of what is desirable and worthwhile. Value is accepted as principle or moral standard of a person or group of people. Values play a vital role in environmentalism and have been found to be predictors of pro-environmental behaviour (Stern, Dietz, and Kalof, 1993). As Schwartz, (1992) define value, general and abstract in nature. The three-value orientation in this respect may be mentioned, which are egoistic, altruistic and biospheric (Groot and Steg, 2008). The VBN model proposes that this value orientation influences various environmental perception and behaviour. Value plays an important role in directing one's behaviour but the judgment of an individual varies with situations, though judgment is likely to be moderated by pre existing value endorsement level (Howes and Gifford, 2009). Thompson and Barton (1994) distinguish between anthropocentric value and ecocentric one. Anthropocentric values are developed on the idea of dominance of man on nature. It can lead to economic exploitation of nature. Further anthropocentric views also admit that pollution and exhaustion of natural resources are the natural consequences of economic progress (Kaufman and Franz, 1993). In opposition ecocentric value identify Man as a part of a whole i.e. nature (Kaufman and Franz, 1993). The value orientations are used to study and explain the environmental beliefs and behaviours.

A belief is what we know to be true and is strongly adhered to. These are assumptions or convictions we hold as true about something, concept or person. Besides the NEP, the VBN theory includes beliefs about egoistic, altruistic and biospheric consequences of an environmental problem. Norms are abstract guides for behaviour in certain situations. Norms convey what is generally considered acceptable behavior. Norms are stated or implied rules for expected behaviors. They have also been described as the "customary rules of behavior that coordinate our interactions with others". Norms are perceived as moral obligation which represent personal belief about what is right and wrong; in essence a personal norm (Schwartz and Tessler, 1972); Personal norms (Stern, 2000) have been shown to influence pro-environmental behaviour. Relations between values and awareness of environmental consequences have been found in several studies (Stern & Dietz, 1994; Stern, et. al., 1995; Stern, Dietz, and Kalof, et al., 1995).

Many studies have been conducted on environmental education from various perspectives in different countries. Similarly various researches have been done in the sphere of environmental attitude, awareness, behaviour, intention and so on. Researchers has failed to obtain researches related to socio psychological theories in India Therefore studying VBN theory in the context of

environmental education is totally a new area of exploration. Bozdogan, (2011) results showed that preservice teachers were more successful in rectifying the gaps and misconceptions via instructions with visual materials. After the intervention, this study showed that experimental group had higher global warming attitude scores. However, no meaningful relationship existed between the groups with respect to their attitude scores. Lopez and Arango (2008), studied the relationship between psychological constructs and ecological behaviour on 403 Spanish individuals. Results show that personal norm, eco altruistic values and ecological beliefs have become the main psychological explanatory variables of environment protective behaviour. Menzel and Bogeholz (2009), studied 216 Chilean (15-19year old) and 217 German pupils, based on Value-Belief-Norm (VBN) theory to protect biodiversity for sustainable development. Comparisons revealed that Chilean adolescents showed higher personal norms and commitments to protect biodiversity. Regression analysis revealed that the Schwartz'-value universalism" was an important predictor for three different kinds of behavioural commitment. In both samples, ascription of responsibility, perceived ability to reduce threat and above all personal norms were positive predictors. The relationship between materialism, environmental beliefs, environmental concern, and environmental behaviors on 337 US adults, shows a negative effect on environmental beliefs, and these beliefs positively affect environmental concern and environmentally responsible behavior (Kilbourne and Pickett, 2008).

Various empirical studies have administered the Awareness of Consequences (AC) scale to differentiate between three orientations-egoistic, altruistic and biospheric. Evidence is presented that indicates the AC scale should be reinterpreted as a measure of beliefs supporting environmental action and belief supporting environmental inaction (Ryan and Splash, 2010). Jansson, Agneta and Annika (2011) aimed to arrive at a better understanding of consumer adoption of a high involvement eco-innovation using VBN theory. The results showed that early adopters had a higher level of education and were much more likely to live in multi-person households compared to non-adopters. In terms of attitudinal factors, adopters exhibited higher levels of pro-environmental values, beliefs, and personal norms (PNs). Employing variables from the value belief norm theory (Kelly and Abel, 2012) findings suggest that environmental service-learning experiences impact both awareness of environmental consequences and personal normative beliefs. Thus ecological citizenship was indirectly impacted through these social psychological predictors. The literature on VBN theory and its implication on environmentalism amply show the importance of this theory on environment related behaviour. However, researches on this issue are relatively sparse in the context of Indian school situation. The present study is therefore likely to help understand the role of VBN theory in developing environment related behaviour of the school students in Kolkata, India.

Operational Definitions

Value-Value provides a general conception of what is desirable and worthwhile, that they are fundamental standards of a given society and that they have a wide influence on social conduct and organisations. While values guide our behavior, there are many behaviors to which we grow accustomed because of the society, culture and conditions in which we live.

Belief- A belief is what we know to be true and is strongly adhered to, these are assumptions or convictions we hold as true about something, concept or person, Religion is one such example. This study will investigate the role of environmental beliefs in the context of environmental behavior.

Norms - Norms are abstract guides for behaviour in certain situations. Norms convey what is generally considered acceptable behavior. Norms are stated or implied rules for expected behaviors. These rules may be explicit or implicit. They have also been described as the "customary rules of behavior that coordinate our interactions with others". This study will find out the role of environmental norm in influencing environmental behavior.

Environmental Action- Environmental action, in the present perspective, is a visible, observable and measurable psychomotor responses made by an individual against appropriate stimuli. Environmental Action means tendency of individual to do something on his own and participation in the programmes to uphold the environmental issues and to protect and provide safeguard to the environment. These activities can be reflected in many forms like making people aware about the danger of degradation of environment and pollution, writing petition, reducing unnecessary consumption, giving effort to reduce pollutants, and even joining all sorts of green movements. Those who are not concerned with environmental issues are not likely to participate in pro-environmental activity and even may indulge to take active role in environmental degradation, considered as environmentally passive. It is observable and reported behaviour of the individuals, either done or willingness to do in future, regarding the protection of the environment for examples civic responsibility, personal life style change, individual civic action and cooperative civic action.

Objectives of the Study

The specific objectives of the present study are to find out-

To assess the effect of gender and stream on environmental values, beliefs, norms and environmental action.

To study the inter relationship between environmental values, beliefs and norms environmental action.

To study whether environmental action can be predicted from value belief norm theory.

Methodology

Research Design

Descriptive survey method was used for the study. This is which 2x3 factorial designs is contemplated in order to understand the relationship between dependent and independent variable.

Participants

The sample was drawn from the schools of Twelfth Grade students, situated in the Howrah and Kolkata. In the present study random sampling was done. It is a probability sampling. In random sampling the researcher selects sample units form the population following principle of random selection. The present sample comprises 480 students comprising both girls and boys. The average age of the students was 15-20 years. The intelligence or socio economic background may have moderated the findings of the study but were not controlled.

Instruments

Two questionnaires were used in this research-

Value, Belief and Norm Scale (VBN)

Bengali version of Schwartz's universal scale- Schwartz, 1992; Stern et al., 1999 was adapted and standardized by the researchers.

Chakraborti and Sengupta Environmental Action Scale

Environmental Action scale by Chakraborti and Sengupta (2005) and was adapted by the investigator for the present project. Behaviour related to saving energy (Example- Do you cook food in pressure cooker to save fuel?). Recycling behaviour (Example- Do you reuse the water after the vegetables have been boiled in it?). Behaviour related to sustainable lifestyle (Examples-Do you

carry a jute bag or cloth bag when you go for shopping? Do you throw away leftover food?). Participation or involvement in environment related programmes (Example-Do you object when someone dumped garbage near my house?).The researcher developed Likert type (5-point) scale, with 30 items. The reliability (KR-21) value was found to be 0.66. The item validity was tested by Tetra-choric correlation.

Results and Discussion

Table-1: N, Mean and S.D. of the Groups Considered for Value *Scores*

			N	Mean	S.D.
Value	Gender	Boys	152	34.87	3.132
		Girls	328	36.24	3.169
	Stream	Arts	220	35.95	3.464
		Commerce	132	35.09	2.778
		Science	128	36.31	3.099
		Total	480	35.81	3.219

Table -1 shows that value scores of the girls (M=36.24 and S.D. = 3.169) is higher than that of boys (M=34.87 and S.D. = 3.132) and the students belonging to science stream (M=36.31 and S.D. = 3.099) is higher than those of commerce (M=35,09and S.D. = 2.778) and arts background (M=35.95 and S.D. = 3.464). This implies that female students belonging to science stream have more value related to environmentalism.

Table-2: Summary of the Factorial Analysis of Variance (ANOVA) for the Scores of Value

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	202.668[a]	2	101.334	10.155	0.00
Intercept	139714.9	1	139714.9	1.40E+04	0.00
Gender	199.058	1	199.058	19.949	0.00
Discipline	6.158	1	6.158	0.617	0.433
Error	4759.698	477	9.978		
Total	620436	480			
Corrected Total	4962.367	479			

a. R Squared = .041 (Adjusted R Squared = .037)

Table -2 shows that there was significant effect of gender on value scores [F (1/479) = 19.949, P<0.01] but the effect of discipline was not significant [F (1/479) = 0.617, P=0.43].

Table-3: N, Mean and S.D. of the Groups Considered for Belief Scores

			N	Mean	Std. Deviation (S.D.)
Belief	Gender	Boys	152	54.18	4.811
		Girls	328	57.13	5.469
	Stream	Arts	220	55.84	5.292
		Commerce	132	55.58	5.392
		Science	128	57.47	5.578
		Total	480	56.2	5.441

Table - 3 shows that belief scores of the girls (M=57.13 and S.D. = 5.469) is higher than those of boys (M=54.18 and S.D. = 4.811). Students belonging to science stream (M=57.47 and S.D. = 5.578) have higher belief regarding environment than those of commerce (M=55.58 and S.D. = 5.392) and arts stream students (M=55.84 and S.D. = 5.292).

Table-4: Summary of the Factorial Analysis of Variance (ANOVA) for the Scores of Belief

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	958.421[a]	2	479.21	17.288	0.00
Intercept	330897.9	1	330897.9	1.19E+04	0.00
Gender	884.067	1	884.067	31.893	0.00
Discipline	54.56	1	54.56	1.968	0.161
Error	13222.38	477	27.72		
Total	1530232	480			
Corrected Total	14180.8	479			

a. R Squared = .068 (Adjusted R Squared = .064)

From Table - 4 it was found that there was significant effect of gender on belief scores [F (1/479) = 31.893, P<0.01] but the effect of discipline was not significant [F (1/479) = 1.968, P=0.161].

Table-5: N, Mean and S.D. of the Groups Considered for Norms Scores

			N	Mean	S.D.
Norms	Gender	Boys	152	37.29	3.467
		Girls	328	37.57	3.55
	Stream	Arts	220	37.58	3.845
		Commerce	132	37.33	2.726
		Science	128	37.47	3.689
		Total	480	37.48	3.523

Table -5 shows that norm scores of the girls (M=37.57 and S.D. = 3.55) is higher than those of boys (M=37.29 and S.D. = 3.467). Students belonging to arts stream (M=37.58 and S.D. = 3.845) have high scores in relation to environmental norm than those of commerce (M=37.33 and S.D. = 2.726) and science stream (M=37.47 and S.D. = 3.689).

Table-6: Summary of the Factorial Analysis of Variance (ANOVA) for the Scores of Norms

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	12.376[a]	2	6.188	0.498	0.608
Intercept	159531.3	1	159531.3	1.28E+04	0.00
Gender	8.831	1	8.831	0.71	0.4
Discipline	4.016	1	4.016	0.323	0.57
Error	5931.491	477	12.435		
Total	680344	480			
Corrected Total	5943.867	479			
a. R Squared = .002 (Adjusted R Squared = -.002)					

From the Table-6 it is concluded that both the effect of gender [F (1/479) = 0.71, P=0.4] and discipline [F (1/479) = 0.323, P=0.57] on norm scores was not significant. This implies that students do not differ in their personal norm they hold to protect the environment.

Table-7: N, Mean and S.D. of the Groups Considered for Environmental Action Scores

			N	Mean	S.D.
Action	Gender	Boys	152	142.82	12.227
		Girls	328	142.45	14.884
	Stream	Arts	220	143.33	16.928
		Commerce	132	140.64	10.212
		Science	128	143.25	11.884
		Total	480	142.57	14.085

Table -7 shows that environmental action scores of the boys (M=142.45 and S.D. = 12.227) is higher than those of girls (M=142.45and S.D. = 14.884) and that the students belonging to arts stream (M=143.33 and S.D. = 16.928) practiced environment friendly action more than those of commerce (M=140.64 and S.D. = 10.212) and science stream students (M=143.25 and S.D. = 11.884).

Table-8: Summary of the Factorial Analysis of Variance (ANOVA) for the Scores of Environmental Action

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	190.792[a]	2	95.396	0.48	0.619
Intercept	2348654	1	2348654	1.18E+04	0.00
Gender	10.001	1	10.001	0.05	0.823
Discipline	176.987	1	176.987	0.89	0.346
Error	94839.08	477	198.824		
Total	9851152	480			
Corrected Total	95029.87	479			
a. R Squared = .002 (Adjusted R Squared = -.002)					

Table - 8 reveals that neither gender [F (1/479) = 0.05, P=0.823] nor discipline [F (1/479) = 0.89, P=0.346] have any significant effect on environmental action scores among twelfth grade students.

Table-9: Relationship among Scores of Value, Belief, Norms and Environmental Action

	Value	Belief	Norms	Action
Value	1	.559**	.412**	.509**
Belief	.559**	1	.564**	.414**
Norms	.412**	.564**	1	.482**
Action	.509**	.414**	.482**	1
** Correlation is significant at the 0.01 level (two-tailed)				

Table - 9 reveals that environmental action was significantly and positively associated with value (r =0.509, P<0.01), belief (r =0.414, P<0.01) and norm (r =0.482, P<0.01) scores of students. This means that students' have a combination of environmental value, belief, norm and action and thereby are more sensitive towards environment.

Table -10: Summary of the Step-wise Multiple Regression Model for Students (Outcome Variable: Environmental Action)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.509[a]	0.26	0.258	12.133
2	.591[b]	0.349	0.346	11.389

a. Predictors: (Constant), Value

b. Predictors: (Constant), Value, Norms

Table -11: Step-wise Multiple Regression of Environmental Action with the Predictor Variables for Students (N=480)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	62.728	6.192		10.13	0.00
	Value	2.23	0.172	0.509	12.946	0.00
2	(Constant)	34.731	6.764		5.134	0.00
	Value	1.638	0.177	0.374	9.235	0.00
	Norms	1.312	0.162	0.328	8.091	0.00

a. Dependent Variable: Action

Except belief both the independent (value and norms) variables considered in the present study were the successful predictors of the environmental action of the students. Regression analysis findings also revealed that 50.9% of variance on environmental action of the students was accounted by value scores and 59.1 % of variance by value and norms scores. The equations are –

Environmental action = 62.728+ 0.172 (value)……1

Environmental action = 34.731+ 0.177 (value) + 0.162(norms) …….2

Discussion and Conclusion

The results have shown that there is significant difference in value and belief scores of the boys and girls with girls showing higher levels of environment related values and beliefs. However, they do not differ in their normative belief or the actions they take to protect the environment. The role of gender regarding issues related to environment is not very clear and the researches in this respect are inconclusive. However, a number of researches had reported that women are more concerned about environment and take more positive actions in their attempt to reduce pollution. Zelezny, Chua and Aldrich (2000) conducted a survey on researches done on gender difference on environmentalism. From the meta-analysis they concluded that women report stronger attitude and behavior than men. They further observed that majority of studies from 1988 to 1998 reported that women showed more environmental concern than men, although the effect of gender on NEP environmental attitude was small. Zelezny et al. (2000) study also showed that women participated more than men in pro environmental activities. Their analysis also included the studies on school students. Their conclusion was that regardless of age (youth or adult) females report more concern about environment.

The present study has also underscored the relation between VBN theory and environmental action. The correlation matrix indicates that value, belief, norm and environmental action scores are positively and significantly correlated. This is again consistent with the earlier researches which emphasize on the role of value and belief system on pro environmental behaviour rather than environmental awareness or knowledge. The positive correlation further demonstrates that environmental action can be predicted from value and norm scores. In fact value and norms scores account for almost 35% of variance in action scores. However, environment related beliefs seem to have no significant effect on environmental actions.

So the study highlights the effect of value and norms in understanding environmental action. This finding is supported by Lopez and Arango (2008), where values are referred as ecoaltruistic. They are fundamental variables in predicting environmental behavior. According to Menzel and Bogeholz (2009) and Ibtissem, (2010) personal norms are positively and significantly connected to conservation behavior. On the contrary, norms do not have a significant effect on the behavior of residential energy conservation Abrahamse (2007). Thus results showed that school students who are high on altruistic, egoistic and biospheric value (Sahin, 2013) are morally obliged towards environmental action. In the light of the given results environmental beliefs measured, revealed a less important determinant of conservation behavior. Contrary to this, Lopez and Arango (2008) proposed that ecological beliefs explain ecological behavior.

Educational Implications of the Present Study

This particular paper contributes to the conceptual framework of understanding sustainable behavior among school students. The teaching of environmental education successfully in any educational institution depends upon students, so there is urgent need to assess their various psychological factors affecting environmentalism. The study further highlights the importance of

value and norms in determining environment related behaviour rather than environmental knowledge or information. So there is an urgent need to inculcate environment related value like altruistic and biospheric value among the students. The impact of norms on environment related behaviour also indicates that the influence of community and the positive role and influence of important persons on an individual student in determining his environment related behaviour are to be taken into account. Since the findings of the study revealed that environmental belief is not a strong predictor of environmental action, therefore there is a scope for emphasing the moral and ethical aspect of Environmental Education in our teaching-learning situation. In parallel to this, some environmental educational programs was designed to help learner take an in depth look at environmental issues (Volk and Cheak, 2003). Moreover some computer based learning activities (Nicoleau et al, 2009) should also be incorporated. Such activities may help teachers to provide some motivation and enhance conservation behavior in their daily life situations (Sahin, 2013).

Reference

1. Abrahamse ,W. (2007). **Energy conservation through behavioral change: Examining the effectiveness of a tailor-made approach**. Doctoral dissertation, Groningen University.
2. Bozdogan, A.E. (2011). The Effects of Instruction with Visual materials on the development of preservice elementary teachers' knowledge and attitude towards global warming. **The Turkish Online Journal of Educational Technology**, 10, 2.
3. De Groot, J. (2008). **Mean or green? Value orientations, morality and prosocial behaviour**. Doctoral dissertation, University of Groningen.
4. Howes, Y., and Gifford, R. (2007). Stable or dynamic value importance? The interaction between value endorsement level and situational differences on decision making in environmental issues. **Environment and Behaviour**, l41, 4, 549-582.
5. Jansson, J., Agneta, M., and Annika, N. (2011). Exploring consumer adoption of a high involvement eco- innovation using value-belief-norm theory. **Journal of consumer behavior**, 10, 51-60.
6. Kaufman, D.G., and Franz, C.M. (1993). **Biosphere 2000: Protecting our Global Environment.** New York: Harper Collins.
7. Kelly, J.R., and Abel, T.D. (2012). Foetering Ecological Citizenship: The case of environmentalism Service-Learning in Coasta Rica. **International Journal for the Scholarship of Teaching and Learning,** 6, 2.
8. Kilbourne, W., and Pickett, G. (2008). How materialism affects environmental beliefs, concern, and environmentally responsible behavior. **Journal of Business Research**. 61(9), Pp. 885-893.
9. Kaiser, F.G., Hubner, G., & Bogner, F. X. (2005). Contrasting the theory of planned behavior with the value-belief-norm model in explaining conservation behaviour. **Journal of applied social psychology**, 35, 10, Pp.2150-2170.
10. Lopez, A.G., and Cuerro-Arango, M.A. (2008). Relationship among values, beliefs and ecological behavior. **Psicothema,** 20, Pp. 623-629.
11. Menzel, S., and Bogeholz, S. (2009). Values, beliefs and norms foster Chilean and German commitment to protect biodiversity. **International Journal of Environmental & Science Education**, 5, 1, Pp. 31-49.

12. Nicolaou, C.T., Korfiatis, K., Evagorou, M., & Constantinou, C. (2009). Development of decision-making skills and environmental concern through computer-based, scaffolded learning activities. **Environmental Education Research**, 15(1), Pp.39-54.

13. Nordlund, A. M., & Garvill, J. (2003). Effects of values, problem awareness, and personal norm on willingness to reduce personal car use. **Journal of environmental psychology**, 23, Pp. 339–347.

14. NCFSE (2000). **National Curriculum Framework for School Education**, New Delhi.

15. Sahin, E. (2013). Predictors of Turkish Elementary Teacher Candidates' Energy Conservation Behaviors: An Approach on Value-Belief-Norm Theory. **International Journal of Environmental & Science Education,** 8, 2, Pp. 269-283.

16. Steg, L., Dreijerink L., and Abrahamse, W. (2005). Factors influencing the acceptability of energy policies: A test of VBN theory. **Journal of environmental psychology,** 25, Pp. 415–425.

17. Stern, P.C. (2000). Towards a coherent Theory of environmentally significant behavior. **Journal of social issues**, 56, Pp.407-424.

18. Stern, P.C., and Dietz, T. (1994). The value basis of environmental concern. **Journal of social issues**, 50, Pp. 65-84.

19. Stern, P.C., Dietz, T., and Kalof, L. (1993). Value orientation, gender and environmental concern. **Environment and Behaviour**, 25, Pp. 322-348.

20. Stern, P.C., Dietz, T., and Guagana, G.A. (1995). The new ecological paradigm in social psychological context. **Environment and behavior,** 27, 723-753.

21. Stern, P.C, Dietz T., Abel T., Guagnano, G.A., and Kalof1, L**. (**1999). A value-belief-norm theory of support for social movements: The case of environmentalism. **Research in human ecology**, 6, 2, Pp. 81-97.

22. Swhartz, S.H. (1992). Universal in the content and structure in values: Theoretical advances and empirical tests in 20 countries. In M.P. Zanna (Ed.) **Advance in experimental social psychology,** New York: Academic Press. 25, Pp. 1-65.

23. Thompson, S.C.G. , and Barton, M.A. (1994). Ecocentric and anthropocentric attitudes towards the environment. **Journal of Environmental Psychology**, 14, 149-157.

24. UNESCO. (1978). **Final report of intergovernmental conference on environmental education.** Organized by UNESCO in cooperation with UNEP, Tbilisi USSR, 14-26 October 1927, Paris UNESCO ED/MD/49.

25. Volk, T.L., and Cheak, ,M.J. (2003). The effects of Environmental Education Program on Students, Parents and Communities. **The Journal of Environmental Education,** 34, 4, Pp.12-25.

26. Yilmaz, A., Morgil, I., Aktug, P., and Gobekli, I.(2002). Knowledge of the secondary school and university students on the environment, environmental concepts and problems and suggestions. **Hacettepe University Journal of Education**, 22, Pp.156-162.

27. Zelezny, L.C, Chua, P.P., and Aldrich, C. (2000). Elaborating on gender differences in environmentalism. **Journal of Social issues,** 56, 3, Pp. 443-457.