ACHIEVEMENT VIS-A-VIS ATTITUDE OF THE STUDENTS IN RELATION TO DIFFERENT BRANCHES OF GEOGRAPHY IN THE SECONDARY CURRICULUM IN WEST BENGAL

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ABSTRACT Students of secondary classes in schools in WB view different branches of Geography differently. In a bid to estimate the difference of the viewpoints the researcher has undertaken the study to prepare test on Attitude towards Geography and an achievement test in Geography comprising distinctly two sections Physical Geography &Economic Geography. Inter correlations were found among Attitude towards Geography(1), Physical Geography(2), Economic Geography(3) and Geography (4) itself. The inter correlations show that secondary students possess similar attitude towards the branches of Geography and the subject Geography itself included in their curriculum.

1.0 INTRODUCTION:

Geography is so useful subject in daily life that even British Indian Govt could not keep it beyond the school curriculum. Among the school subjects Geography is highly popular to the school students and a substantial part of the students pursueGeography in their higher studies. Geography curriculum has been enormously changed after independence of our country and it is also periodically modified. Gradually depending on higher needs of public life, different branches have been incorporated in the curriculum of secondary school Geography.

Curriculum of secondary school geography mainly concerns the study of (i) the surrounding environment of man (ii) people and places. The first corresponds to Physical & the second to Economic geography. The two branches together form the secondary school level Geography. Physical geography deals with the physical phenomena and Economic geography with different resources for living and development. The physical part of the geography is more associated with exact science and the other part is with humanities(Stachowiak & Artur Bajerski; 2016, Pp 203-220).

The learning or the educational outcome of a student depends upon the correspondence between the cognitive structure of the student and conceptual structure of the subject of learning (Novak-1966, p 252). The present credit system for different subjects of study, in fact, depends on the complexity of the conceptual structure of a subject
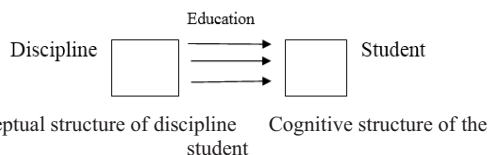

Education

Discipline → Student

Conceptual structure of discipline — Cognitive structure of the student

Fig:1 Correspondence between discipline and student(as per Novac)

The present style of teaching-learning demands higher cognitive abilities, critical thinking, innovative practices of the students in learning Geography. In the school geography the branches physical and economic geography don't comprise the same conceptual structure. Physical geography involves cause and effect study but such scope does not exist in economic geography. Physical geography can be studied by experiment and observation. A student hardly has any scope to study personally the status of production and distribution of crops, minerals and forestry in economic geography in that sense. Economic geography part is generally presented to the students through lecture method accompanied by description of some facts, figures and tables. Errors committed by the students in two branches are different. The development of attitude of a student towards a subject depends on the cognitive development of student and conceptual structure of the subject. The attitude of a student may shift from one subject to another as he grows. The visually handicapped students in most of the cases shift their attitude from mathematics to History or other humanities subject when they are promoted to upper classes(De & Bera;2012).The rate of change of complexity of mathematics is higher as the grade level of the students increases but VI students' rate of cognitive development is slow in comparison to

that. This slow cognitive development is one of the prime causes of shifting attitude to history from mathematics in the upper classes of the school. It may appear that at the conceptual structure of a subject is sometimes instrumental for developing attitude towards the subject. School students show their differential attitude towards a subject or its part(s) there of depending on the complexity of conceptual structure and cognitive demand of the subject or its parts, scope of achievement and its applicability in life. In the school Biology students prefer Zoology over Botany (Tamir,2010).

The branches of school geography differ a lot on the conceptual structure. So these parts might contribute differently in the development of attitude of a student towards the subject. Relation between attitude towards geography and achievement of the students in a part of the subject might reveal the relative contribution of the part towards devevelopment of attitude towards geography. Darchingpuri(89) and Kar(1990) found significant positive relation between attitude and achievement in science. Mehera & Chatterjee (2006) found (i) a significant and positive relation between achievement in mathematics and attitude towards mathematics.

A higher relation between Attitude towards Geography & a part/branch of Geography might ,therefore, demonstrate superior contribution of that part towards the development of Attitude towards Geography among the students. Stachowiak & Bajerski (2016) reported that Polish Geography suffers from poor internal integration . There remains a question-which part(s) of Geography plays vital role in developing attitude towards the subject.

2.0 VARIABLES IN THE PRESENT STUDY:

The variables involved in the present study may be noted as :-

Major variables:
1. Students achievement in geography.
Sub variable - a. Achievement in Physical Geography
b. Achievement in economic Geography

2. Students' attitude towards Geography
3.0 Definition & Operational Definitions :

3.1 ATTITUDE:

An attitude is "a relatively enduring organization of beliefs, feelings, and behavioural tendencies towards socially significant objects, groups, events or symbols" (Hogg & Vaughan ; 2005, p. 150). Attitude is the feeling or mental disposition of an individual which influences the human behaviour. Attitude is a vital ingredient for the success or failure of children in their optimum development. Attitude structure can be described in terms of three components:

Affective component: this involves a person's feelings / emotions about the attitude object.

Behavioural (or conative) component: the way the attitude, we have, influences how we act or behave.

Cognitive component: this involves a person's belief / knowledge about an attitude object.

Simpson et al. (1994, p.47) noted that "the key to success in education often depends on how a student feels toward home, self, and school." The behaviour a student exhibits during a learning process can be associated with student's satisfaction of a course (Arbaugh, 2000).

3.2 Operational Definition : ATTITUDE TOWARDS GEOGRAPHY:
Attitude towards a subject is the emotional attachment of a student towards the subject as a result of satisfaction derived through learning, learning ambience and participation in activities.

3.3 ACHIEVEMENT:
Achievement is defined as the accomplishment or proficiency of performance in a given skill or body of knowledge. The purpose of achievement is to measure some aspect of the intellectual competence of human beings, what a person learnt to know or to do. The concept of achievement involves the intersection of these factors such as aptitude for learning and opportunely for learning.

3.4 Operational Definition: ACHIEVEMENT
Outcome/performance of the school students in Geography test planned and constructed as per prescribed curriculum, instructional objectives and style of instruction is called Achievement in Geography. Generally it includes all types of performance a student does in Geography.

3.5 OBJECTIVES OF THE STUDY
1. To find the relation between ATG of the students & their achievement scores in Geography

2. To find the relation between ATG of the students & their achievement scores in Physical Geography(PGS)

3. To find the relation between ATG of the students & achievement scores in Economic Geography (EGS)

4. To compare the relationships of ATG with PGS and ATG with EGS.

3.6 HYPOTHESES OF THE STUDY
The following null- hypotheses have been formulated and proposed to be tested.

H_{01}: ATG of the students bears no significant correlation with their achievement scores in Geography

H_{02}: ATG of the students bears no significant correlation with their achievement scores in Physical Geography (PGS)

H_{03}: ATG of the students bears no significant correlation with their achievement scores in Economic Geography (EGS)

H_{04}:The coefficient of correlation between ATG & PGS and that between ATG & EGS do not significantly differ.

4.0 METHODOLOGY:
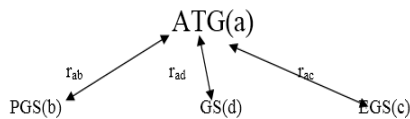4.1 A schematic diagram of the structure of the present relational study is shown below

Table 2: Structure of present study and list of abbreviations

PGS	Physical Geography scores	b
EGS	Economic Geography	c
GS	Geography Score	d
rac	coefficient of correlation between a&c	
rab	coefficient of correlation between a&b	
rad	coefficient of correlation between a&d	

The method adopted according to the nature and objectives of the present study is "Descriptive Survey Method". Descriptive studies are used to collection data. They involve measurement, classification, analysis, comparison and interpretation.

4.2 Tools:
(1). Attitude towards Geography(ATG) developed by Sarkar, De & Maiti (2012) was used to collect data on the attitude of the students towards Geography

(2).Achievement test: On Physical and economic Geography for IX students

4.2.1 Outline of preparation and standardization of tools.
1.(ATG) test :
The Attitude Towards Geography Test consists of 6 dimensions as follows:

(I). Liking Geography teacher
(ii).Curiosity to know a place
(iii).Choosing career in Geography
(iv).Choosing recreational activities
(v). Interest in learning the subject
(vi). Utilitarian value of the subject

The content validity of the items : To ascertain the content validity of the items , the services of 3 expert raters were taken and the mean agreement ratio was 0.754

Table-2 Reliability Statistics

Cronbach Alpha	N(no of Items)
0.720	23

The test contains in all 23 items. Dimensions: i & iii-vi each contains 4 items. Dimension: ii contains 3 items. There are in all 12 positive items and 11 negative items. Each item has 3 response options YES, NO AND UNDECIDED. Scores for YES is 1 and 0 for other options against positive item and reverse is for negative item. The discrimination value of each test item was determined by t-test. The sub test-total correlation coefficients are: 0.471, 0.536, 0.564, 0.490, 0.570, 0.553 respectively. Maximum and minimum marks for the entire test are 23 & 0 respectively

The test retest reliability of the test is- r=0.8252, df=98
Content Validity: Inter rater agreement ratio: (Gregory, 2005 in Banerjee & Mukhopadhyay; 2011). No. of discriminating items (n)=23

(2).Preparation of Achievement test: An achievement test was developed on Physical and Economic Geography meant for IX students of WBBSE. Types of objective included - Knowledge(04), understanding(06),application(06) & skill(04). No. of items-- 20. Items on Physical Geography(10); Economic Geography(10) Time of administration--20 minutes, Scoring technique: 1 OR 0. Test Retest Reliability Coefficient(r)=0.982 of df=98 Validity: content validity of the items was shown in terms of content on both the branches of Geography, objectives, types of questions & number of questions.

4.3 POPULATION OF THE STUDY:
Population comprised students of class IX, WBBSE, Bengali medium schools. The study was delimited to Kolkata and its adjoining districts (Howrah, North 24 Parganas and South 24 Parganas districts in West Bengal).

Sample: Cluster sampling method was used for data collection. The students of FOUR schools were involved in the data collection. The sample size was 100.

4.4 Method of collection of data: The questionnaire for testing students' attitude towards Geography and the achievement test in geography involving its different branches were administered on the students of class IX. Duration of the test was 15 minutes for the questionnaire and 20 minutes for achievement test.

4.5 PRESENTATION OF DATA:
. After the collection of data they were tabulated into frequency distribution. Cumulative % frequencies, mean, median, mode, standard deviation were computed with the help of (SPSS) version 20.0

Table 3.Frequency distribution of the scores on attitude of the secondary school students towards Geography(a)

Scores	Frequency(f)
42 - 45	2
46 – 49	8
50 – 53	23
54 – 57	32
58 – 61	31
62 - 65	4

Table 4. Descriptive Statistics of the Scores on Test of Attitude towards Geography

Mean	12.38
Standard Deviation	0.945235097
Kurtosis	-0.340769605
Skewness	-0.242977735

Table 6.Des. Statistics for Achievement in Geography

Curricular area	(b)Physical Geography	(c)Economic Geography	(d)Geography
Mean	11.55	12.19	11.78
SD	0.172	0.115	0.143

Table-6. Inter correlation® among the scores of Geography, Physical Geography, Economic Geography and Attitude towards Geography

Scores	ATG(a)	PGS(b)	EGS(c)	GS(d)
ATG(a)	-	0.478	0.412	0.453

Attitude towards geography(a) has coefficients of correlation with physical Geography(b), Economic Geography(c) and Geography(d) are respectively 0.478,0.412 & 0.453.

4.6 ANALYSIS AND INTERPRETATION OF DATA:-
Testing of hypotheses & Interpretation of correlations
H_{01}: ATG(a) of the students bears no significant correlation with their achievement scores in Geography(d).

Interpretation of coefficient of correlation (r) :- As rad =0.453 is significant at .05 level for df= 98, ATG scores bear significant correlation with Geography Scores . Therefore null hypothesis H01 is rejected.

H02: ATG(a) of the students bears no significant correlation with their achievement scores in Physical Geography PGS(b).

Interpretation of coefficient of correlation (r) : As (rab)= 0.478 is significant at .05 level for df= 98, ATG(a) scores bear significant correlation with PGS (b), the null hypothesis H02 is rejected.

H_{03}: ATG(a) of the students bears no significant correlation with their achievement scores in Economic Geography :EGS(c). So the null hypothesis is rejected.

Interpretation of coefficient of correlation (r) : As (rac)= 0.412 is significant at .05 level for df=98 ATG(a) scores bear significant correlation with EGS(c) , the null hypothesis H03 is rejected.

H04:The coefficient of correlation(rab) between ATG & PGS and that (rac) between ATG & EGS do not significantly differ.

Interpretation of difference of coefficients of correlation : Hotelling [td]r=.545<1.97 . So the difference between rab &rac is not significant at .05 level. The null hypothesis H04 is, therefore, retained.

Therefore, the correlation coefficient between ATG & PGS and the correlation coefficient between ATG& EGS do not significantly differ.

5.0 Findings:
(i) Attitude towards Geography is significantly correlated with Geography

(ii)Attitude towards Geography is significantly correlated with Physical Geography

(iii) Attitude towards Geography is significantly correlated with Economic Geography

(iv) The correlation between Attitude towards Geography & Achievement in Physical Geography, and correlation between Attitude towards Geography & Achievement in Economic Geography do not significantly differ.

5.1 LIMITATION:
- Sample size should be more and heterogeneous
- Though interview was more revealing, it could not be used for some practical difficulties.
- The test items were small

5.2 DISCUSSION: Attitude towards Geography bears a higher co-relation with PG than with EG but the difference between two coefficients of correlations is not significant. From the works of Stachowiak . & Bajerski (2016) it is seen that humanities oriented school students lean towards Economic Geography parts and Science oriented students lean more towards Economic Geography. So, there might be a possibility that students having preference for Economic Geography would demonstrate higher correlation between attitude towards Geogaphy and Economic Geography. Similar is the case with Physical Geography. So the two coefficients of correlation, both being high, do not materially differ. The present study revealed that ATG for the subject taken as a whole remains intermediate between those for the the parts. However to compare the attitudes of a student for the parts of a subject it is not always safe to correlate Attitude for the whole subject and the achievement scores for the parts. In this connection Tamir (2010) observed that even if a student likes a part say, Zoology of the subject Biology, s/he could have higher achievement in other part Botany. This is not unusual .There is likelihood of higher scoring in a less complex part of a subject irrespective of the pattern of distribution of attitude over the branches of the subject..

5.3 Implication of the study of the study:
This study may be of great importance particularly in educational guidance. The science minded students studying geography may develop apathy to social science part and vice versa. This tendency among the students at Post secondary stage can be reduced on the basis of the results of this study which show that differences of attitudes judged on the basis of achievement of the two branches of Geography carry no significance. Attitude of a student towards geography and its relationship with success on different branches are not invariant.

5.4 SUGGESTIONS AND RECOMMENDATIONS:
Such study should be repeated over the students of different localities, culture, ethnicity, linguistic groups, Education boards etc so as to increase the reliability of such investigations. Moreover, teaching at understanding level helps to elevate the conceptual level of the subject or its parts.

5.5 CONCLUSION: Attitude towards different parts of Geography may be different but attitude for a particular part might also be extended to other parts of Geography depending on the method of teaching of the parts, the personality of the teachers, scorability of those parts and other liked activities(Eva Walther, 1982) .

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