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GEOGRAPHICAL ENVIRONMENT, DEPRESSION AND ACADEMIC ACHIEVEMENT

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Abstract—

The objective of the study is to determine the effect of Geographical Environment on depression and academic achievement in high school students. The sample comprised 540 (268 boys and 272 girls) 8th, 9th and 10th grade high school students from Gilan province. Depression scale (BDI) was administered on the student's group sample and Geographical Environment are explained by observable Environmental factors such as temperature, Humidity and Height from ground level.

The results have revealed that among the Geographical Environment variables, only Height from ground level has a negative correlation with depression and multivariate regression for this model revealed that combination of temperature, Humidity and Height from ground level can be a good predictor for depression but it cannot be a good predictor for academic achievement. On the basis of these findings, it was recommended that special environments should be considered as important factors in mental health and depression of students.

Keywords— Geographical Environment, Temperature, Humidity, Height from Ground Level, Depression and Academic Achievement

INTRODUCTION

The explorations of the reasons that influence academic performance of students have attracted the concentration and concern of researchers and school administrators. Achievement is a cumulative function of current and prior family, community, and school Humiditys (Steven et al, 2005) and a study of the entire process would require complete family, community, and school histories. House and family structure Environmental factors are essential aspects in development of student's personality and academic function. These variables as an important environmental and humans dimension are playing a basic role and there are many parents' Environmental factors that have been shown to be related to student academic achievement (Mc Farland, 2001) and their mathematics performance (Higbee & ThoBDI, 1999).

The psychological factors and their effects on academic situations are the growing concerns of the educational researchers and practitioners. Many learners experience depression in our schools today.

Geography (from Greek, geographia, lit. "earth description") is the science that studies the lands, the features, the inhabitants, and the phenomena of the Earth. A literal translation

would be "to describe or write about the Earth". The first person to use the word "geography" was Eratosthenes (276-194 BC). Four historical traditions in geographical research are the spatial analysis of the natural and the human phenomena (geography as the study of distribution), the area studies (places and regions), the study of the man-land relationship, and the research in the earth sciences. Nonetheless, modern geography is an all-encompassing discipline that foremost seeks to understand the Earth and all of its human and natural complexities - not merely where objects are, but how they have changed and come to be. Geography has been called "the world discipline" and "the bridge between the human and the physical science". Geography is divided into two main branches: human geography and physical geography.

GEOGRAPHIC INFLUENCES

Geography is more than memorizing names and places. Geographers organize space in much the same way that historians organize time. To help organize space, geographers

are concerned with asking three important questions about things in the world:

• Where is it?
• Why is it there?
• What are the consequences of its being there?
The five themes of geography help answer these questions:
• Location: Where is it located?
• Place: What's it like there?
• Human/Environment Interaction: What is the relationship between humans and their environment
• Movement: How and why are places connected with one another?
• Regions: How and why is one area similar to another?

No one theme can be understood without the others. The themes are connected with one another, as are all components of our world. No part of our world can be understood in isolation.

Into almost every anthropo-geographical problem the element of environment enters in different phases, with different modes of operation and varying degrees of importance. Since the causal conception of geography demands a detailed analysis of all the relations between environment and human development, it is advisable to distinguish the various classes of geographic influences.

Physical effects.

Four fundamental classes of effects can be distinguished.

1. The first class includes direct physical effects of environment, similar to those exerted on plants and animals by their habitat. Certain geographic conditions, more conspicuously those of climate, apply certain stimuli to which man, like the lower animals, responds by an adaption of his organism to his environment. Many physiological peculiarities of man are due to physical effects of environment, which doubtless operated very strongly in the earliest stages of human development, and in those shadowy ages contributed to the differentiation of races. The unity of the human species is as clearly established as the diversity of races and peoples, whose divergences must be interpreted chiefly as modifications in response to various habitats in long periods of time.

Variation and natural conditions.

Such modifications have probably been numerous in the persistent and unending movements, shiftings, and migrations which have made up the long prehistoric history of man. If the origin of species is found in variability and inheritance, variation is undoubtedly influenced by a change of natural conditions. To quote Darwin, "In one sense the conditions of life may be said, not only to cause variability, either directly or indirectly, but likewise to include natural selection, for the conditions determine whether this or that variety shall survive."1 The variability of man does not mean that every external influence leaves its mark upon him, but that man as an organism, by the preservation of beneficent variations and the elimination of deleterious ones, is gradually adapted to his environment, so that he can utilize most completely that which it contributes to his needs. This self-maintenance under outward influences is an essential part of the conception of life which Herbert Spencer defines as the correspondence between internal conditions and external circumstances, or August Comte as the harmony between the living being and the surrounding medium or milieu.

According to Virchow, the distinction of races rests upon hereditary variations, but heredity itself cannot become active till the characteristic or Zustand is produced which is to be handed down.2 But environment determines what variation shall become stable enough to be passed on by heredity. For instance, we can hardly err in attributing the great lung capacity, massive chests, and abnormally large torsos of the Quichua and Aymara Indians inhabiting the high Andean plateaus to the rarified air found at an altitude of 10,000 or 15,000 feet above sea level. Whether these have been acquired by centuries of extreme lung expansion, or represent the survival of a chance variation of undoubted advantage, they are a product of the environment. They are a serious handicap when the Aymara Indian descends to the plains, where he either dies off or leaves descendants with diminishing chests. Stature and environment.

Darwin holds that many slight changes in animals and plants, such as size, color, thickness of skin and hair, have been produced through food supply and climate from the external conditions under which the forms lived.4 Paul Ehrenreich, while regarding the chief race distinctions as permanent forms, not to be explained by external conditions, nevertheless concedes the slight and slow variation of the sub-race under changing conditions of food and climate as beyond doubt.5 Stature is partly a matter of feeding and hence of geographic condition. In mountain regions, where the food resources are scant, the varieties of wild animals are characterized by smaller size in general than are corresponding species in the lowlands. It is a noticeable fact that dwarfed horses or ponies have originated in islands, in Iceland, the Shetlands, Corsica, and Sardinia. This is due either to scanty and unvaried food or to excessive inbreeding, or probably to both. The horses introduced into the Falkland Islands in 1764 have deteriorated so in size and strength in a few generations that they are in a fair way to develop a Falkland variety of pony.6 On the other hand, Mr. Homer Davenport states that the pure-bred Arabian horses raised on his New Jersey stock farm are in the third generation a hand higher than their grandsires imported from Arabia, and of more angular build. The result is due to more abundant and nutritious food and the elimination of long desert journeys. Physical effects of dominant activities.

Oftentimes environment modifies the physique of a people indirectly by imposing upon them certain predominant activities, which may develop one part of the body almost to the point of deformity. This is the effect of increased use or disuse which Darwin discusses. He attributes the thin legs and thick arms of the Payaguas Indians living along the Paraguay River to generations of lives spent in canoes, with the lower extremities motionless and the arm and chest

muscles in constant exercise.10 Livingstone found these same characteristics of broad chests and shoulders with ill-developed legs among the Barotse of the upper Zambesi;11 and they have been observed in pronounced form, coupled with distinctly impaired powers of locomotion, among the Tlingit, Tsimshean, and Haida Indians of the southern Alaskan and British Columbia coast, where the geographic conditions of a mountainous and almost strandless shore interdicted agriculture and necessitated sea-faring activities.12 An identical environment has produced a like physical effect upon the canoemen of Tierra del Fuego13 and the Aleutian Islanders, who often sit in their boats twenty hours at a time.14 These special adaptations are temporary in their nature and tend to disappear with change of occupation, as, for instance, among the Tlingit Indians, who develop improved leg muscles when employed as laborers in the salmon canneries of British Columbia. Effects of climate. Both the direct and indirect physical effects of environment thus far instanced are obvious in themselves and easily explained. Far different is it with the majority of physical effects, especially those of climate, whose mode of operation is I much more obscure than was once supposed. The modern geographer does not indulge in the naive hypothesis of the last century, which assumed a prompt and direct effect of environment upon the form and features of man. Carl Ritter regarded the small, slit eyes and swollen lids of the Turkoman as "an obvious effect of the desert upon the organism." Stanhope Smith ascribed the high shoulders and short neck of the Tartars of Mongolia to their habit of raising their shoulders to protect the neck against the cold; their small, squinting eyes, overhanging brows, broad faces and high check bones to the effect of the bitter, driving winds and the glare of the snow, till, he says, "every feature by the action of the cold is harsh and distorted".15 These profound influences of a severe climate upon physiognomy be finds also among the Lapps, northern Mongolians, Samoyeds and Eskimo. Pigmentation and climate. The relation of pigmentation to climate has long interested geographers as a question of environment; but their speculations on the subject have been barren, because the preliminary investigations of the physiologist, physicist and chemist are still incomplete. The general fact of increasing nigrescence from temperate towards equatorial regions is conspicuous enough, despite some irregularity of the shading.20 This fact points strongly to some direct relation between climate and pigmentation, but gives no hint how the pigmental processes are affected. The physiologist finds that in the case of the negro, the dark skin is associated with a dense cuticle, diminished perspiration, smaller chests and less respiratory power, a lower temperature and more rapid pulse21 all which variations may enter into the problem of the negro's coloring. The question is therefore by no means simple.

Depression often does not make sense to those who have never experienced it. Depression is a serious medical condition that affects thoughts, feelings and the ability to function in everyday life. Depression results from abnormal functioning of the brain. The causes of depression are currently a matter of intense research (Morales, 2001). An interaction between genetic predisposition and life history appear to determine a person’s level of risk. Episodes of depression may then be triggered by stress, difficult life events, negative effects of medications, or other environmental factors.

Depression is not just feeling sad, “blue,” or discouraged. It is much more than the normal “downs” that can be a part of everyday living. It is an illness that affects the person’s thoughts, feelings, behavior and physical health. In its mildest form, depression can keep otherwise healthy individuals from enjoying their lives.

While researchers tend to agree that household quality is an important determining factor in influencing student outcomes, there is little consensus about the relationship between specific Environmental factors (e.g. temperature, Humidity and education) (Ingersoll, 2001), Secondly,

there is need for studies which will address variables in the levels of academic performance, or other psychological issues. The objectives of the presents study therefore focuses on the relationship between Environmental factors (temperature, Humidity and education) , depression and academic achievement and it assumed that combination of Environmental factors can be a good prediction for Depression and academic achievement.

Hypothesis

There are significant correlation between Geographical Environment, depression and academic achievement.
There are significant correlation between Geographical Environment and depression.
There are significant correlation between Geographical Environment and academic achievement.

METHOD

Sample

The participants of this study comprised of 540 students of 8, 9 and 10 grade including 268 boys and 272 girls, selected randomly from 16 high schools in Gilan province.

Tools and Materials

The instruments used in the research study are as follows:

a. Depression Rating Scale- (DRS): This questionnaire was developed by Kamile 2008; and contains 31 items of situations which causes depression. It has two subscales . Each item of this scale was rated on a five – point scale rating, from very much anxious – 5 to not at all anxious-1 . Psychometric properties of this scale are computed by the researchers. Two weeks test-retest reliability of the scale was 0.85 and internal consistency alpha coefficient was computed 0.88.
b. Academic achievement: This marks obtained from the students of the last class examination in their academic subjects.

RESULTS AND DISCUSSION

Coefficients of correlations between Geographical Environment, depression and academic achievement are presented in the correlation matrix table 1.

Table 1.Coefficients of correlation between Geographical Environment , Depression and academic performance.

Geographical Environment	Mean	S.D	Depression Mean =64.12 S.D=9.48	academic performance Mean =68.14 S.D=6.40
Humidity	1.92	.91	-.002	.225 (*)
Height from ground level	1.87	1.45	-.143 (*)	.109 (*)
parent's temperature	1.68	.732	.004	-.011

*Correlation is significant at the 0.01 level (1-tailed).
N= 540

The coefficients of correlations given in table 1 showed inverse relationship between Height from ground level and depression [r= -.09, p <.01], but the relationships between parent's temperature and Humidity with Depression was not significant [r= -.003, p >.05 for Humidity and depression and r= -.007 p >.05 for temperature and depression].

Concurrently, significant positive relationships between two sub variables of Geographical Environment and academic achievement are identified. Coefficients of correlation between parent's Humidity and academic achievement was positively significant [r= .33, p <.01]. It was also significant positive relationships between Height from ground level and academic achievement[r= .21, p <.01] but, the correlation between parent's temperature and academic achievement was not significant [r= .23, p >.05].

To test the prediction of depression and academic achievement by parent's variables, data were analyzed using multiple regressions.

The results of regression analysis for each of two dependent variables are shown in table 2.

Table 2: Coefficients of multiple regression analysis for two models

DV_a	IV_b	B	Beta	t	Adjusted R Square	F
depression	Humidity	-.023	-.002	-.057	.012	4.3**
	Height from ground level	-.99	-.151	-3.53**		
	parent's temperature	.151	.012	.27		
Academic performance	Humidity	1.652	.234	5.54**	.051	12.33**
	Height from ground level	.44	.103	2.44*		
	parent's temperature	-.43	-.050	-1.12		

a DV: Dependent variable, b IVB: Independent variable,
* p <.05. ** p <.01.

Table 2 shows results of multiple linear regression analysis by Enter method, using Geographical Environment as predictor of depression. The results indicated that combination of the independent variables included in the models, had a statistically significant negative prediction for depression and it can operate as a good calculation for Depression. With regard to independent variables separately also Height from ground level was found to be significant predictor for depression but Humidity and parent's temperature was not significant predictor for depression.

The results of multiple regression for second model with Enter method, also revealed that combination of Humidity , education and temperature can operate as a

good predictor for academic achievement in students . In this model also, with regards to the effect of independent variables separately, Humidity was found significant predictor of academic achievement and Height from ground level but parent's temperature was not a significant predictor for academic achievement.

DISCUSSION

The results demonstrated quite clearly that there are significant correlations between some parts of Geographical Environment with depression and academic achievement. The consequences of multiple regressions for two models revealed that, combination of the parent's temperature, Humidity and education can operates as a good estimate for depression and academic achievement. The results have revealed that, the depression of students can be influenced by temperature, Humidity and education of parent's. It is also reported by the other researchers that getting higher of these kinds of Environmental factors lead to decreasing in depression (Higbee, 1999). The second part of these study also demonstrated that there is significant relationship between these kinds of Environmental factors and academic achievement and the previous researches by Symons (2003) also supporting this results.

CONCLUSION AND RECOMMENDATIONS

This paper has used a sample of the students in three states in Gilan province to investigate the relationship between three sub variables of Geographical Environment with depression and academic achievement. According to the above - mentioned results: a. significant negative correlation between one sub variables of Geographical Environment and depression is found. b. A significant positive correlation between two parts of Geographical Environment and academic achievement is detected. It is also found that depression and academic achievement in students can be predicted by set of parent's temperature, Humidity and education.

With regard to mentioned results and importance of Height from ground leveled level in depression and academic achievement, it is recommended that parents should be prepared in counseling and pedagogical classes and developing special classes can increase their communicational and educational skills.

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