THE BANGLADESH JOURNAL OF PSYCHOLOGY

VOLUME 10
1988

মোঃ কামাল উদ্দিন
(পিএইচডি, কিউটো ইউনিভার্সিটি, জাপান)
অধ্যাপক ও চেয়ারম্যান
মনোবিজ্ঞান বিভাগ, ঢাকা বিশ্ববিদ্যালয়

OPINION OF MANAGERS ON TRAITS NECESSARY FOR MANAGEMENT : BANGLADESH CONTEXT

Rowshan Jahan
Department of Psychology
University of Dhaka

ABSTRACT

A survey was conducted to see if managers of nationalized and private industries of Bangladesh have similarity in opinion in respect of traits necessary for management. A questionnaire was prepared in which traits along with their definitions were listed which asked the respondents to rank the traits in respect of importance. The questionnaires were mailed to the managers of representative sample of industries of both public and private sectors. The sample consisted of 99 male managers of nationalized industries and 56 male managers of private industries who responded to the questionnaires. The results showed that there was a very high correlation between the ranks (Rho = .98) as well as mean scorss (r = .97) of the the traits as selected by managers of public sector and those as selected by managers of private sector. This indicated that there is a great agreement among the managers regarding the qualities needed for management. The study recommends to develop a psychological test which would measure these traits in order to improve selection of managers in Bangladesh.

INTRODUCTION

Management jobs have been considered as most important in an industrial organization. Effective direction of human efforts, both in the public and private sector of economy, is a key to the efficient utilizations of human and material resources. Business management, termed as a special blend of arts and science, is as vital to technologically developed countries as it is to developing nations seeking progress through industrial modernization. Extensive research have been carriedout on business management – particularly on selection and training of managers.

Bangladesh is also organizing its efforts to develop management skill. Development of managerial expertise is regarded as vital to rapid improvement

of national economy. Its major industries were declared nationalized after independence in 1971. Later on, however, private ownership was allowed in order to improve the shattered economy of the country. At present mixed economy prevails and there are two types of industries in the country – public and private sector industries. Many of these industries have management development programs.

Development of management personnel only through training is not effective. Proper selection of managers is an essential pre-requisite for having good managerial forces. The importance of choosing right persons for managerial positions cannot be over-emphasized. "The task of training people in management is difficult enough without starting with the handicap of unsuitable human material. Some people never grow-up ⋯ the capacity for the acceptance of new ideas in some people, even when still young is very low indeed. The power to reason accurately and speedily is not given to everyone" (Brown and Raphael, 1948).

But the task of selection of managers has always been a challenging problem. This is because the job is a very complex one which is affected by multifarious factors, for example it varies with the type of organization, level of management etc., and even with the changes of country's economic and socio-political conditions. The major problem is to predict criteria of job success. The intellectual and personality characteristice are better predictors rather than specific abilities. Taylor and Nevis (1957) rightly point out that as the job is very complex, to isolate specific abilities may not be sufficient. Intelligence measures alone are not also good predictors because to get into management requires a fairly bright person in the first place. Thus personality factor is often considered as an important predictor for managerial job.

What are the personal qualities which are taken into consideration for effective management? During the past decades many attempts have been made to discover the personality characteristics that distinguish successful from unsuccessful managers. Although no distinctive profile of the successful managers has emerged, suggestions have indicated that successful managers tend to possess certain qualities normally not found in less effective ones. The positive qualities most frequently mentioned in these studies include drive or initiative, objectivity, emotional stability, flexibility, skill in human relations,

mental alertness and analytical skill, good judgement, willingness to take risks and breadth of knowledge and interest. Holden, Pederson and Germane (1968) interviewed 260 executives of fifteen leading industrial corporations and agreed that these qualities are extremely important for success in top management positions. Campbell et al. (1970) report a list of qualities said to be necessary for managerial effectiveness : able to sustain defeat, alert, achievement oriented, assertive, capable of good judgement, originality coupled with stability, competitive, decisive, dynamic, energetic, extraverted, honest, intelligent, self-controlled, group-oriented, confident etc. Jurgensen (1966) asked several groups of personnel men and executives numbering two hundred and ten persons, to sort 120 adjectives to describe 'most and least descriptive of successful key executives' and observed that decisive, aggressive, self-starting, productive, determined, energetic, creative, intelligent, responsible are some of the most descriptive of successful executives. Bower (1978) listed eight fundamental qualities for a leader today and also in the year 2000. These are character, initiative, desire to serve people, intellect, awareness and perception, foresight, flexibility and persuasiveness. Most of the research directed in this line has been concerned with prediction of managerial success on the basis of various trait measures. Of the personality traits that have been proposed as critical for management success, those described by Nash (1963), Dunnettee (1967) and Ghiselli (1963) are noteworthy. Nash found effective managers differed from ineffective ones in their preference for activities that are somewhat risky, require independent thinking, allow them to interact with and dominate others. Dunnettee observed that effective leaders tend to be bright and high in need for achievement, power and autonomy. Ghiselli's list of key traits consists of intelligence, initiative, supervisory ability, self assurance etc.

Research reports on executive selection published so far have admitted the need for further probing about personal attributes or some common traits. It has been observed that people of unquestioned high intelligence often turn to be ineffective in managerial position. This is because interpersonal relations are needed very much for the job. A good number of studies have shown the relationship of personality traits with executive jobs. Guilford (1952) found that the traits significantly related to success of executives are sociability, lack of inferiority feelings, cooperativeness and masculinity. Hicks and Stone (1962) intended to evaluate the effectiveness of a battery

of tests discriminating between successful and unsuccessful managers. The Ss were 76 supervisors and managers of a technical plant. The purpose was to identify certain basic characteristics for selection, promotion and training purposes. The results show that the four Rorschach Test sub-scores W(Theoretical) Dd (Pedantic), M (Activity Potential) and H (Human relations) had the highest relationship with the criteria. The S-O Rorschach identified certain temperamental characteristics which were related to managerial success. For example, it was interpreted that a successful manager is one who shows a great deal of emotional strength and tends to work at things from a broad theoretical point of view. Grimsley and Jarrett (1973) found that intelligence and personality measures are good predictors of managerial effectiveness. Their Ss were 50 top and 50 middle managers chosen randomly from 437 male candidates for key managerial positions. The Gordon Personal Profile, Gordon Personal Inventory and Guilford Zimmerman Temperament Survey were used for personality measurement. Significant differences were found between two groups in respect of general activity, ascendance, objectivity, personal relations, ascendance-sociability, general activity—restraint in Guilford Zimmerman scale and ascendancy, personal relations and vigour in Gordon Scales.

In the light of the above discussion, it can be argued that managerial effectiveness depends largely on the individual i.e. the personal characteristics that make an individual a good or poor leader. Thus prediction of managerial success can be made on the basis of various trait measures. The present study was done along such lines and an attempt was made in this survey to get a view from the Bangladesh context. A number of traits considered important for effective management were collected (Jahan, 1982). It became important to know the opinion of concerned persons (i. e., the managers who are actually doing the job) as well as to arrive at a general consensus regarding the importance of these traits. Thus the opinion of nationalized and private industries managers were intended to be collected. The reason behind this is obvious. These are the two types of industries now prevalent in Bangladesh. If there is similarity among the managers of these two types of industries, it will mean that the managers in general have this opinion. The study was conducted particularly in this line. The aim of the study was to investigate if managers of nationalized and private sector industries possess similar opinion regarding qualities required for management in Bangladesh.

METHODS

The Sample

The sample of this study consisted of 99 male managers of nationalized industries and 56 male managers of private industries. They were top (general manager, managing director), middle (deputy general manager, departmental head), and junior level managers (assistant manager). The mid and junior level managers were found to be from various departments : production, accounts, administration, marketing, store and engineering. The age of nationalized industries managers ranged from 25 to 54 years and the age of private industries managers ranged from 29 to 55 years. The experience of the former group ranged from 2 to 26 years and experience of the latter group ranged from 3.50 to 29 years. Educational qualification ranged from below SSC to Post graduation level.

Instrument

A questionnaire was prepared by the author which asked the respondents to rank the traits in respect of importance. There were 18 traits namely Leadership, Sociability, Objectivity, Responsibility, Honesty, Achievement, Initiative, Emotional Stability, Firmness/sticking to principle, Cautiousness, Adaptibility, Loyalty, Self-control, Originality or Creativity, Personal relations, Endurance, Risk taking and Vigour. Each trait was defined. The questionnaire included instruction as to how to rank order the traits i.e., the S is to put 1 in the box by the side of the trait he considers most important for management, put 2 he thinks next most important etc. They were also asked to add some more traits, if any, they think important for successful management. The questionnaire included items to collect information from the respondents regarding their age, experience, education, name of industry, department and title of the job.

Procedure

At first representative sample of industries, both public and private, were chosen randomly from lists of enterprises all over the country. Thereafter the questionnaires were mailed to the Heads of these selected enterprises. The top executive of each organization was asked to distribute the quetionnaires among his colleagues/subordinate officers of managerial rank. A stamped envelope was attached with each questlonnaire for the expected reply of the respondents. Some of the questionnaires were personally distributed by the author. Ninety-nine managers of nationalized sector and 56 managers of private sector responded to the questionnaires. The nationalized industries

included Adamjee Jute Mills, Kohinoor Group of Industries, Khulna Newsprint, Bangladesh Machine Tools Factory, Ashuganj Fertilizer Factary, Dhakesweri Cotton Mills, Mowla Textile Mills Ltd., National Ceramic Industries Ltd., Dhaka Vegetable Oils, Joypurhat Sugar Mills, Chittagong Steel Mills, Karnophuli Paper Mills Ltd., Bangladesh Insulator and Sanitary Ware Factory and Mohini Mills Ltd. The managers of the following private industries responded to the questionnaires : M/s Lever Brothers, Fisons Bangladesh Ltd. Bangladesh Oxygen Ltd, Glaxo Bangladesh Ltd., Hoechst Pharmaceuticals Co. Ltd., KSB Pumps, Bangladesh Tobacco Company, Philips Group of Companies and Pfizer Laboratory Ltd. Although all managers of the selected enterprises were the samples of this study, all did not reply .

RESULTS

Table 1 Compares managers of nationalised industries and private industries in respect and mean scores.

Table I. Mean scores and ranks for traits by managers of nationalized and private industries,

Traits	Nationalized Industries N=99		Private Industries N=56	
	Mean Score	Rank	Mean Score	Rank
Leadership	3.66	1	3.95	1
Sociability	8.76	10	9.12	12
Objectivity	6.20	5	5.79	4
Responsibility	4.03	3	4.43	3
Honesty	5.49	4	6.14	5
Achievement	8.23	9	7.50	8
Initiative	3.81	2	3.97	2
Emotional Stability	8.10	8	7.77	9
Firmness/Sticking to principle	6.81	6	7.29	7
Cautiousness	10.69	16	10.77	16
Adaptability	9.45	12	8.14	10
Loyalty	9.67	13	10.54	15
Self Control	9.01	11	9.02	11
Originality	7.42	7	7.10	6
Personal Relations	9.94	15	9.50	13
Endurance	10.70	17	10.95	17
Risk taking	12.45	18	12.69	18
Vigour	9.84	14	10.43	14

The Table shows that there was a very high correlation between the ranks (Rho = .98) as well as mean scores (r = .97) of the traits as selected by managers of public sector and those as selected by managers of private sector.

There were very few responses to the question 'add some more traits'. Suggested qualities, however, were overlapping the traits which had been enlisted,

DISCUSSION

The aim of the study was to see if managers of nationalized and private industries of Bangladesh have similarity in opinion regarding traits necessary for management. The results of the study show that there is high agreement between the two groups of managers. The correlation between two sets of ranks was very high (Rho = .98). The coefficient of correlation between mean scores of the traits as selected by private industries managers and nationalized industries managers was also very high (r = .97). On the basis of such finding it can be said that managers of Bangladesh consider these traits as important. This is supported by their virtually non-response to the question 'add some more traits'. In their remarks, however, some of the respondents reported that self-control can not be sharply differentiated from Emotional Stability. Initiative and vigour are also overlapping (as defined by the author). Thus the list of traits can be reduced, for example, Emotional stability rather than self-control and Initiative rather than vigour can be retained. And now from the list of traits the most important ones (i.e. on the basis of mean ranking) can be selected and considered for selection of managerial personnel. The author recommends that a personality test be constructed which would measure these traits. This can help to improve managerial selection in Bangladesh.

References

Bower, M. Corporate leaders for the year 2000. In W. H. Newman (Ed), Managers for the year 2000. New Jersy : Prentice-Hall, 1978.

Brown, W. B. D., and Raphael, W. Managers, Men and Morale London : McDonald and Evans, 1948.

Campbell, J. P., Dunnette, M. D., Lawler, E. E. 111, and Weick, K. E., Jr. Mangerial Behaviour, Performance and effectiveness, New York : McGrawHill, 1970.

Dunnettee, M. D. The motives of industrial managers. Oaganizational Behaviour and Human Performance 1967. 2, 176-182.

Ghiselli, E. E. The validity of management traits related to occupational level. Personnel Psychology, 1963, 16, 109-113.

Grimsley, G., and Jarrett, H. F. The relation of past managerial achievement to test measures obtained in the employment situation : Methodology and result. Personnel Psychology, 1973, 26, 31-48.

Guilford, J. S. Temperament traits of executives and supervisors measured by the Guilford Personality Inventories. Journal of Applied Psychology, 1952, 36, 228-233.

Hicks, J. A. and Stone, J. B. The identification of traits related to managerial success. Journal of Applied Psychology, 1962, 46, 428-432.

Holden, P. E., Pederson, C. A., and Germane, G. E. Top Management New York : McGraw Hill, 1968.

Jahan, R. Development of a Multitrait Personality Inventory for selection of managerial personnel in the industries of Bangladesh. Unpublished doctoral dissertation, University of Dhaka, 1982.

Jurgensen, C. E. Report to participants on adjective word sort. Minneapolis, Minneapolis Gas Company, unpublished report, 1966.

Nash, A. N. Development and Evaluation of a Strong Vocational Interest Blank Key for differentiating between potentially effective and less effective businessmen managers. Unpublished doctoral dissertaion, University of Minnesota, 1963.

Taylor, E. K., and Nevis, E. C. The use of projective techniques in management selection. Personnel 1957, 33, 462-474.

THE SHACKLES OF CREATIVE SOCIAL THINKING IN CONTEMPORARY SOCIETIES.

Sheikh M. Shahidullah
Department of Psychology
University of Dhaka

ABSTRACT

The present article is an attempt to understand how man's thinking is shaped by the realities of political economic structure characteristic to the world system. Creativity in contemporary social thinking, as revealed by this analysis, is being constantly suppressed all over the world although by differential historico-structural conditions associated with the dominant and the dominated classes in either of the dependent economies and their metropolitan centres.

For those concerned, it is a common observation today that there is an ever increasing deterioration of creative social thinking—the thinking needed so much for a promising future of humanity. We often wonder about the likelihood that born in the twentieth century, thinkers like Shakespear and Karl Marx would have been top grade bankers or computer scientists. Nevertheless, creative thinking is a precondition for revolutionary (Turok, 1980) and for that matter humanistic social change. This analysis is an humble effort toward the identification of some global structural features that stand ultimately responsible for the wane of human thinking.

Man's uniqueness lies in his cognitive capacities rather than in his emotional or motivational life. As stressed by Boas (1911), the possession of language, and the use of tools, and the power of reasoning distinguish man from other animals. Thinking, as we understand, is an intrinsic mediational process between prior experience and response pattern while creative thinking partakes of reasoning by producing a tangible and orderly product. What we mean by creative social thinking is constructive (and not destructive or manipulative) self-initiated new ideas as synthesised from awareness of ongoing

F—2

social process. Such creative thinking is most impaired by lack of freedom and spontaneity.

Man's thinking has improved enormously since the beginning of civilization while animal thinking remained almost static. If there is any change at all in animal thinking that is only to the extent necessitated by survival needs in terms of adapting to changing physical environment. In contrast, with the assumption of control over nature man now determines, to the greatest part, his destiny as a race as well as the relationship between the cognitive and the social spheres of human functioning. This relationship and its context has long been the central theoretical concern of social and behavioral scientists.

The fact hardly needs to be emphasized that human thinking is essentially social in nature. As stressed by Mead (1934) both mind and self evolve in a social context. Even though preoccupied with the acquisition of knowledge about the physical rather than the social world Piaget (1965) too acknowledged an interaction between logical and social development. For Marx (1953) man's consciousness is determined by his social being. This analysis draws upon Marx's contention that human thinking is founded in human activity and in the social relations brought about by this activity. Such an intraindividual process is effected directly or indirectly by man's need for adaptation to the structure of which he is a part. This structure shaped to the greatest part by man himself also, in a dialectical interplay, conditions man's cognition. Creative social thinking is no exception to this rule.

The world today is a much closer, unified and integrated system than it was in the past. In this modern world system few countries evolved over time as the core, closely served by some semiperipheral ones while the majority countries rest as the periphery (Wallerstein, 1974). The core countries, because of their economic and (consequent) political domination, have set into motion a definite process of change in the peripheral countries. In the process of domination and profiteering the core countries too couldn't but give way to imminent and even more vigorous change in their own economic, political, social and cultural environment. As part to the world capitalist system both core and peripheral countries were assigned specific economic roles, developed differential class structures and profited unequally from the workings of the system. For the sake of analytical simplicity we fuse the socioeconomic classes of people

in both core and peripheral countries into two broad catagories namely the "dominant" and the "dominated" while examining the shackles of their thinking.

The dominated section in a peripheral society like that of Bangladesh includes the vast mass belonging to the lower and lower-middle socioeconomic classes. They are too poor and inarticulate. They sell their labor power and sometimes their small produce in the market controlled by others. They are compelled to undergo the vices of this market characterised by the built-in crisis inherent in the broader capitalist system while the benefit of their contribution to this system is withheld from them through shrewd manoeuvering. Under a condition of constant impoverishment immediate survival remain all and the only concern for them. Thus they lack the zeal, information and above all. the freedom necessary for the development of independent creative thinking.

The dominant section in this society is the minority consisted the upper and the upper-middle socioeconomic classes. The latter class, mostly beaur-ocrats, professionals, intellectuals and literary personalities through their activity collaborate with the former who serve as agents of external interest. These "dominated dominators" as a whole respond more to the demand and need of the interest of core societies than that of their own. The politico-cultural superstructure they erect and popularize in order to provide legitimacy to the exploitative structure they run on behalf of their external manipulators is infil-trated and fashioned by alien values, knowledge and information. Thus their thinking is neither originated from nor nourished by local realities. Cultural values and sanctions buttressed by the motives for consumption and acquisition and the mystry of technology act as the principal lever for their thinking. In fact this section of people in peripheral societies do not think for themselves. They just immitate, repeat and transmit. For them, search for genuine social insight is replaced by routinized intellectual practices in an atmosphere of conformity and opportunism.

In the core societies, the dominated are the vast majority of floating wage earners. They include the lower and middle socioeconomic classes who survive on selling their labor power, skill and expertise. Far from enjoying the free-dom of thinking as often publicized, this section of people are in reality tied to the lustre of an artificially differentiated market. Unlike their counterpart in the periphery tied mostly to physiological priorities these people are engaged in the task of selling themselves at optimum prices in the job market

in order to chase the goal of unsatiable consumption. In a fast changing climate of consumption and obsolence they seek personal fulfilment in mere consumption. As participants in the rat race they are too preoccupied to seek meaningful information and to carry out independent analysis. They just keep satisfied to consume "ready-made thinking" dispensed mainly through mass media by quarters interested in controlling their action. Thus the dominated in the core societies are much similer in orientation but not in task to the dominant section in the peripheral cultures.

Lastly, the dominant minority in the core societies are assumed to be the combination of those in control of capital and innovators who reinforce their hands of control. Unlike the foregoing sections, the dominant people in the core societies are conditioned more by self-imposed rather than externally imposed restrictions on their thinking. In a climate of built-in crisis they are under chronic threat of loss of position and possession. In order to overcome this threat they need to devote most of their time and energy to innovate and strengthen means for controlling the action of all other sections mentioned. Because of constant urgency such means of control, both physical and social, turns out to be mechanical in nature and is seldom the product of creative thinking. Thus within a vicious circle of ever increasing urgency, potency and artificiality of solution of problems in an era of sky-rocketing speed of advancement of our civilization there goes hand in hand a steady deterioration in the quality of human thinking. It is always manipulative intelligence that gets upper hand over creative social thinking. Mankind has already begun to experience the dire consequences of such irresponsible and amoral intelligence. At the same time the varieties of dominated majority, because of lack of social creativity, fail to build up necessary resistance to this trend for the attainment of a social change meaningful for humanity. But the deplorable everincreasing isolation, simplification and narrowing of man's cognitive structure can be contained with the provision of a social condition not overburdened with the urgency of great needs, enclosed presentation of knowledge and information, and media-based repetition of motivated messages and assurances. The realization of a condition like this must be preceded by a general awakening that is possible only in dialectical ripples through conscious effort.

References

Turok, B.(ed.), **Revolutionary Thought in the 20th Century**, Zed Press, London, 1980.

Boas, F. **The Mind of Primitive Man**. New York : Macmillan, 1911.

Mead, G.H. **Mind, Self and Society**, Chicago : University of Chicago Press, 1934.

Piaget, J. **The Moral Judgement of the Child**, London : Kegan Paul, 1965 (originally published, 1932).

Marx, K. **Die fruhschriften**, Stuttgart : Kroner, 1953.

Wallerstein, I. **The Modern World-System**, Capitalist Agriculture and the origins of the European world-economy in the Sixteenth Century. New York : Academic Press, 1974.

AGGRESSION AS A FUNCTION OF SEX AND BIRTH ORDER

Dilruba Afrose

and

Helen Shamsi

Department of Psychology

University of Dhaka

ABSTRACT

The present study tries to verify the stereotyped notion that males are more aggressive than the females and first-borns show more aggression than later-borns. Scores obtained by 100 male and 100 female subjects on a scale measuring aggressiveness were analysed by a 2×3 analysis of variance. Results showed that the factors of sex and birth-order had no significant effect on aggressiveness. However, aggressivness was found to vary significantly due to an interaction between sex and birth-order. thus in case of males first-borns were found to be more aggressive than the later-borns whereas in case of females last borns were found to be mare aggressive than those born earlier.

INTRODUCTION

In every society certain differences may be observed between the personality characteristics of the two sexes and aggression is one of such personality characteristics where sex difference is mostly expected. It is believed that these sex differences result from differences in the ways boys and girls are reared. Parents try to rear their children in a way so that they fit into their stereotype masculine or feminine role. In most of the cultures aggression is allowed in boys during their developmental years, but not in girls because it does not fit the feminine image. Thus it is expected that boys will display more aggressiveness than girls. Moreover, in the light of the frustration-aggression hypothesis it may be suggested that, the fact that parents have greater expectations for their sons than for their daughters may produce frustration in boys which in turn stimulates aggressive reaction. Oetzel (1962) compiled the findings of 30 studies and concluded that in most of these research reports, boys were found to be significantly more aggressive than girls. In only a few cases the differences are too small to

be significant. Besides, children themselves perceive boys as the more aggressive of the sexes (Winder and Rau, 1962; Eron et al 1961).

The studies cited so far may have established the fact that differences in sex produce differences in aggressiveness but other research reports in the area of birth-order show that ordinal position is also none the less important determining aggressiveness. Sears (1951) noted less doll-play aggression among older than among younger siblings. Dean (1947) in a study showed that mothers described their younger children more physically aggressive than their older ones. It is suggested that at least in the family settings, the older sibling experiences fewer frustrations than the younger siblings and thus less aggressiveness is observed in the first-born child. Hurlock (1978) stated that older child lacks aggressiveness whereas middle childern show more aggressiveness than the older and the younger ones. But Benjamin and his co-workers (1980) found that first-born and only children show more aggressiveness than the later-born.

These contradictory findings suggest that it should not be assumed that the first-borns are inevitably more aggressive than the later-born or vice-versa. Because when rearing a child parents consider not only the ordinal-position but also the sex of the child, therfore, it is possible that aggression is a joint function of both sex and ordinal birth position of the child. In statistical terms, there may be a significant interaction between sex and birth order. The present study, was thus, undertaken to investigate the joint effect of sex and birth-order, along with their independent effects, on children's aggression.

METHOD

Sample

The subjects were 100 male and 100 female students from the 1st year Intermediate class of 4 different colleges of the Dhaka city and all of them voluntarily participated in the test. Their age range was from 16 to 18 years and they belonged to the middle-class families. On the basis of ordinal position the subjects were divided into three groups. The first group consisted of firstborns—32 adolescent boys and 29 adolescent girls; the second group consisted of middle-borns—47 adolescent boys and 50 adolescent girls and third group consisied of last-borns—21 adolescent boys and 21 adolescent girls.

Instrument Used

A modified version of the Aggression Questionnaire by G. C. Pati (1974) an Indian Psychiatrist was used to measure aggression. The authors of this paper modified the original questionnaire with a view to make it suitable for use in Bangladeshi culture. The reliability was studied on a group of 40 adolescent boys and girls in the age range of 16 to 18 years and the test-retest reliability over a period of two weeks were 0.72. For validity correlations were calculated between scores obtained by 20 adolescent boys and girls (10 scoring very low and 10 scoring very high) and peers'rating. The obtained value of correlation was 0.59.

The Aggression Questionnaire consisted of 16 items and each item is a description of a situational problem. There are three possible answers for each problem and the subject was to choose one of these three answers.

The aggresssion questionnaire was administered to the subjects in the classroom situation following standard procedure. To ensure frankness of answer the subjects were asked not to write their name in the bio-data sheet.

RESULTS

In order to find out whether aggressiveness varies as a function of sex and ordinal birth position the obtained aggression scores were analysed by a 2×3 analysis of variance. The results are presented in Table 1.

Table I. Summary of the Analysis of Variance of Aggression Scores as a Function of Sex and Birth-order of the Subjects

SV	df	SS	MS	F
Sex	1	.02	.02	.036
Birth-order	2	2.21	1.105	1.984
Sex X Birth-order	2	7.09	3.545	6.364*
Within cells	194	108.12	.557	

$*p < .01$

The Table shows that the main effects of sex and birth-order have failed to reach the level of significance. This indicates aggression does not vary as a function of sex or birth-order. However, aggression was found to be a joint function of sex and birth-order as the interaction between the two was significant. ($F = 6.36$; $df = 2,194$; $p < .01$). It was found that in case of males the first-borns ($X = 18.01$) and in case of females the last-borns ($X = 17.95$) are the most aggressive compared to the other groups. Moreover, last-born adolescent boys ($X = 14.17$) and first born adolescent girls ($X = 14.04$) were found to be the least aggressive.

DISCUSSION

The results of the present study indicated that there is no significant differences between the males and the females in aggressiveness. Though these findings contradict the popular belief as well as some research reports (Begum et al, 1982) that males are more aggressive than the females, Bandura (1965) found little sex difference in aggression. Mallick and McCandless (1966) also showed that girls are just as aggressive as boys if they are assured no one is going to find about it. As mentioned earlier, the subjects in this study were asked not to write their names and it is possible that the girls took the opportunity to express aggressiveness freely. Moreover, though it is true that any overt aggressiveness on the part of the girls is met with disapproval and rejection from the parents and the peers but that does not mean the end of aggressiveness in them. They become verbally more aggressive. The test used in this study being verbal in nature may have elicited aggressiveness in the female subjects.

The results of the present study also revealed that the overall effect of birth-order on aggressiveness is not significant. This suggests that treatment of the children by their parents may not be differentiated to any significant extent only because they happen to be the first-borns, the middle-borns or the last-borns. Besides, birth-order effects are complicated by a number of related variables such as family size, age-spacing and sex of the child.

An interaction between sex and birth-order found in this study may account for differences in aggressiveness of males and females in different ordinal positions, The first-born females were found to be less aggressive than the later-borns. This may be explained by the findings of a study by Kammeyer (1966). He showed that first-born girls as compared with later-born girls had a more traditional view of feminine role behaviors and personality traits. The firstborn

F—3

males were found to be more aggressive than the later-born males. This may be due to the fact that first-born males are expected to be independent, responsible, achievement oriented, dominant and aggressive. In short, in case of both males and females the parents expect their first-borns to be truly masculine or feminine so that they can act as model to their younger siblings.

However, before we accept the proposition that sex and birth-order do not have any differential effect on aggressiveness further research is needed. Probing of relevant factors and using an appropriate measuring instrument are suggested to ensure more conclusive results.

References :

Bandura,   A. Influence of models' reinforcement contingencies on the acquisition of imitative responses. Journal of Personality and Social Psychology 1965, 1, 589-595.

Begum,   H., Jahan, R., Begum, R., anb Banu, S. Birth-Order, sex and personality traits. Dhaka University Journal of Psychology, 1982, 12, 1-11.

Benjamin, B.L., Hanmer, D., Pawla, L., Crumrine, and Forehead, R.L. Birth-order and sex interaction in child behavior problems. Developmental Psychology. 1980, 16, 608-615

Dean, D.A., The relation of ordinal position to personality in young children. Master's thesis, State University of Iowa, 1947.

Eron, L.D., Banta, T.J., Walder, L.O., and Laulicht, J.H. Comparison of data obtained from mothers and fathers on childrearing practices and their relation to child aggression Child Development, 1961, 31, 457-472.

Hurlock,   E.B. Child Development. New York : McGraw-Hill, 1978.

Kammeyer, K. Birth order and the feminine sex role among college women. American Sociological Review, 1966, 31, 508-515.

Mallick, S.K., and McCandless, B.R. A study of catharsis of aggression. Journal of Personality and Social Psychology. 1967

Oetzel, R.M Selected bibliography on sex differences. Stanford : Stanford University. (Mimeographed) 1962.

Sears, P.S. Doll play aggression in normal young children. Influence of sex, age, sibling status, father's absence. Psychological Monograph. , : General and Applied 1951, 65, No.6.

Winder, C.L., and Rau, L. Parental attitudes associated with social deviance in pre-adolescent boys. Journal of Abnormal and Social psychology, 1962, 64, 418-424.

LEARNING STYLES OF BOYS AND GIRLS OF SECONDARY SCHOOLS IN DHAKA CITY

Sultana Banu
and
Nazir Ahmed
Department of Psychology
University of Dhaka

ABSTRACT

The study attempted to see the differences in learning styles between boys and girls attending secondary schools. The sample consisted of 50 boy and 50 girl students from Class VIII to X of different High Schools of Dhaka City. A structured questionnaire was developed for measuring learning styles under six intellective (such as, reading style, memory organization, writing style, handling subject-matter, characteristics of thinking and categorization of ideas) and four attitudinal dimensions (such as, preference for types of tests administered, for ways of handling courses, learning condition and mode of learning). No significant differences were observed between boys and girls in respect of six intellective dimensions. With regard to four attitudinal dimensions significant differences were observed between two groups only in preferences for type of tests ($x^2 = 10.88$, df $= 4$, p $< .05$) administered in the Classroom.

INTRODUCTION

The concept of learning styles or modes of information processing have been investigated widely by the modern learning theorists. Learning styles refer to the different ways which an individual adopts for processing information in course of acquiring knowledge. It has been known from various researches that learning style involves individual preference in both perceptual categorizattion that is, perceiviug, thinking, remembering and solving problems (Ausubel, 1968). Reissman (1966) identified three basic types of learning strategies such as, visual (reading), aural (listening), and physical (doing) and that most people show a distinct preference for one of these modes compared to the other. It

was also found that one's mode of response and thinking pattern also indicate his style of learning. Response mode in this sense, refers to the manner in which an individual prefers to work alone or in a group. Thinking pattern refers to the tendency of gathering details first and organizing them later, as compared to the tendency to looking for the overall picture first and obtaining information afterwards. Recent studies on information processing revealed that the process involves two dimensions viz., intellective and attitudinal (Haque, 1981). Inteliective variables include reading style, memory organizaiion, writing style, handling subject matter, patterns of thinking and categorization of ideas. Attitudinal factors refer to attitude towards pursuit of knowledge, learning condition, preference for types of examination or classroom tests, for ways of handling academic course, role in a group discussion, handling of individual assignment. Annis and Davis's (1978) study on the effect of study technique and cognitive styles on recall and recognition showed that note takers and underliners among college stndents did better on tests of recall than who merely read the material. Results of a longitudinal study using two contrasting ways of processing information (i.e. field dependent field independent) revealed that the cognitive style of the students tends to influence their academic and vocational education. Study on cognitive style of Nursery School Children stressed the importance of individual preference for learning to associate words with objects (Coop & Brown. 1970). But results of some studies, however, were found to be contradictory to such findings. One study, for example, on the camparative effectiveness of different study techiques snch as, reading, underlining and marginal note making, outlining and precis writing for studying historical prose found no significant differeces among these techniques on either immediate or delayed recall tests, except that underlining and marginal note making group showed more tendency to achieve higher scores (Arnold 1942). Two experiments by Idstein and Jenkins (1972) while investigatmg the usefulness of two study techniques such as, repeated reading and underlining in a Completion Test given after a delayed review period observed no significant differences between those who used repetitive reading and those used underlining. But he found that when duration of review period was varied significant differences were observed in the performances of the subjects adopting two study techniques. In spite of these contradictory findings relating to differences in the effectiveness of some study techniques on school learning, sex differences in both academic and non-academic experiences

have been supported extensively by research findings. An exhaustive review on studies relating to styles of learning or modes of processing information among the student group (Haque, 1981) revealed significant effect of sex on learning. In one study differences were observed in attitude towards learning among High school boys and girls. Differences found between boys and girls in verbal Skills were assumed to be due to the fact that boys were found to have more reading problems than the girls (Maccoby and Jacklin, 1974). But the same study observed negligible differences between the two sexes unitill they reach adolescence.

In every school some students are identified as high achievers (good students) and some are as low achievers, whereas the rest as failures on the basis of marks obtained in examination. Inter-individual Intra-individual differences in aptitudes and learning abilities are well-recognized phenomena. In our country, the traditional systems of education starting from elementary level through secondary to higher level are characterized by teacher-dominated approach. Under this system students in classroom or learning situations are expected to merely listen to what the thacher has to say, to commit to memory what he heard and thereafter, required simply to mechanically repeat them in the form of writing in examination. Strictly speaking, their learning experiences are completly controlled by the teachers. But each individual learns or processed information in his own way. In addition, due to existing differences in sex role typing boys and girls differ in certain abilities and develop different attitude towards academic matters during growing up process. It is quite likely that male and female students adopt different techniques while receiving information in learning situations which is completely overlooked in the prevalent system of education in our country. No study has yet been done either to determine the strategies being adopted by the students of secondary levels or to see whether male and female students followed different techniques while acquiring knowledge. The purpose of education will not be fruitful if we donot know as to how children learn. This type of investigation will help teachers, parents, and guardians to make better plans for education and to make learning enjoyable to their children. The present study, therefore, attempted to investigate into the strategies of learning adopted by male and female students of secondary schools in Dhaka.

METHOD

Subjects

A total of 100 students (50 boys and 50 girls) of class VIII to X from several government and non-government High Schools of Dhaka City were used as subjects for the study. Their age ranged from 14 years to 16 years. Two groups of subjects were matched in respect of age, class performance, and socioeconomic status.

Description of the questionnaire

Following N.Y. Haque's (1981) questionnaires on learning styles, a structured questionnaire were developed. The questionnaire were divided into two parts. In the first part, six questions measuring reading style, memory organisation, style of writing, handling subject matter, characteristics of thinking and characterization of ideas indicated intellective modes. The second part contained four questions, such as, preferences for types of classroom tests, preferences for handling academic courses, learning condition, and mode of handling and individual assignment which indicated attitudinal variables. Each of the questions were followed by several statements reflecting different strategies of learning. The respondent was asked to put a tick mark against a particular statement that indicates his usual mode of dealing with a particular matter. In the pilot study the questionnaire were administered to a small group of subjects consisting of 10 boys and 10 girls to determine the face validity of the questionnaire and the statements as well. Percentage of boys and girls responding to each statement under each of the dimensions were calculated to see the suitability of the question naire. Description of each of these modes of learniog were as follows :

1. **Intellective Dimension**

   a) **Reading Style :** Various ways of reading an article from journal, magazine, newspaper, books etc.

   Possible Modes : Thorough reading, scanning, reading introduction and conclusion only and so on.

   b) **Memory Organisation :** Various ways of memorizing of what have been read.

   Possible modes : Reading several times, reading and preparing notes in the form of a summary, rote memorization, mnemonics and so on.

c) **Writing Styles** : Various ways of organising information while writing an essay, or story etc.

Modes : Gathering details first and organise thereafter, having an overall view and thereafter gathering supporting information, making an outline first then elaborate, and so on.

d) **Handling Subject matter** : Basis for understanding a given subject matter.

Modes : Looking for facts, data, ideas, concepts, etc.

e) **Characteristics of thinking** : Rigity and flexibility of thinking.

Modes : Whether finds it difficult or not to consider alternative data or additional information that might change ones frame of reference especially in a situation where some kind of closer in thinking has been reached.

f) **Categorization of ideas** : Classifying ideas after reading a topic.
Modes : Either into a broad or narrow details, or in any other ways while taking notes after reading a topic.

II. Attitudinal dimension :

a) **Types of Examination or teacher-made tests** :
Preference for any one type of tests.

Modes : Written, oral, practical, essay type, objective-type or any specific type of objective tests, quizzes and so on.

b) **Ways of handling courses** : Preference for types of courses offered.
Modes : Attending seminars, lectures, demonstration with lecture, workshop etc.

c) **Learning conditions** : Whether one can learn more effectively under some kind of pressure.

Modes : A test or a deadline, in the absence of these according to schedule.

d) **Mode of Learning** : Basic modes of acquiring knowledges.
Possible Strategies (or modes of response) : reading, listening, speaking, discussing, and so on.

Based on the responses (percentages) obtained in the pilot study five answers (modes of learning) considered to be reflecting individual's modes of responses (50% or more) were selected for the final questionnaires. The questions were written in Bengali. A standard instruction written in simple words were printed on the front page of the questionnaire. A separate answer sheet were used for recording answers. The qutionnaire were administered to a small group consisting of 10 students in the recess hours of the schools.

Frequency distributions of five categories of rsponses for male and female subjects were calculated.

RESULTS

Major statistical techniques for analyzing data were Frequency Distribution and X^2 analyses. The following Tables give the results of the analysis.

Table—1. Distribution of male and female students responses regarding different strategies of resding style (Intellective dimension)

Nature of Responses

	A	B	C	D	E	Row Total
Male	19	13	1	14	3	50
	(38%)	(26%)	(2%)	(28%)	(6%)	
Female	12	10	2	18	8	50
	(24%)	(20%)	(4%)	(36%)	(16%)	
Col. Total	31	23	3	32	11	100

$x^2 = 3.938$ not significant

A. Read once attentively
B. Read keeping inview experience of daily life
C. Read attentively several times
D. Read minutely ins and out
E. Read paying attention only to introduction and conclusion.

Table—1 shows that 38% of male students preferred the mode of reading once attentively (A); girls (36%) on the contrary preferred more of reading minutely ins and out of a topic (D).

Table—2. Distribution of male and female students responses regarding different strategies of memory organization (Intellective Dimension)

Nature of Response

	A	B	C	D	E	Row Total
Male	7	11	12	15	5	50
	(14%)	(22%)	(24%)	(30%)	(10%)	
Female	5	12	14	17	2	50
	(10%)	(24%)	(28%)	(34%)	(4%)	
Col. Total	12	23	26	32	7	100

$x^2 = 1.934$ not significant

A. Remember by reading every two or three days
B. Recalling several times of what has been learnt during leisure
C. Recall by taking brief notes
D. Pay attention only the gist and remembering accordingly
E. Remember by reading again and again without knowing its meaning.

Results indicated that among boys 30% adopted the mode of paying attention only to the gist (D), 24% taking brief notes (C), and 22% repeating severl times of what has been read (B) as strategies for learning. Among girls 34% students pay attention only to the gist (D), 28% learned by taking brief notes (C), and 24% by reading several times of what has been learnt (B).

Table-3. Distribution of male and female students responses regarding writing style (Intellective Dimension)

Nature of Response

	A	B	C	D	E	Row total
Male	11	16	5	11	7	50
	(22%)	(32%)	(10%)	(22%)	(1%)	
Female	21	8	3	13	5	50
	(42%)	(16%)	(6%)	(26%)	(10%)	
Col. total	32	24	8	24	12	100

$x^2 = 6,788$ not significant

4—

A.   Learn through concept and then write orderly

B.   Learn overall idea and then write more relevant points

C.   Determine an outline and then elaborate

D.   Preparing notes to maintain originality

E.   To take general idea and then write keeping a standard

Results in Table -3   shows that to learn overall idea first and then write more relevent points (B) was the preferred mode or writing by the majority of boys (32%) whereas learn through concept and then write orderly (A) was the widely used mode of writing among the girls (42%).

Table—4. Distribution of male and female students responses regarding handling of subject-matter (Intellective dimension)

Nature of Response

	A	B	C	D	E	Row total
MALE	13	3	4	24	6	50
	(26%)	(6%)	(8%)	(48%)	(12%)	
FEMALE	22	1	2	23	5	50
	(44%)	(2%)	(4%)	(46%)	(4%)	
Col. Total	35	4	6	47	8	1C0

$x^2 = 9.488$ not significant

A. Paying attention only to data

B. Paying attention to the gist

C. Paying attention only to the artistic characteristice of composition.

D. Paying attention to what the idea wants to convey

E. Paying attention only to the snbject-matter related to daily life.

Table—4. shows that paying attention to what the topic wants to convey (D) was the most preferred technique by most of the male students (48%). Among girls paying attention to the inherent themes (D) and to pay attention to data presented there in (A) were found to be more preferred strategies (46% and 44% respectively) for handling a particuler subject-matter,

Table—5. Distribution of male and female students responses regarding characteristics of thinking process (Intellective dimension)

Nature of Response

	A	B	C	D	E	Row total
MALE	7	1	20	8	14	50
	(14%)	(2%)	(40%)	(16%)	(28%)	
FEMALE	5	2	15	5	23	50
	(10%)	(4%)	(30%)	(10%)	(46%)	

$x^2 = 4.258$ not significant

A. Try to eliminate the rigidity
B. Retain the idea so that it may not change
C. Try to add new information to enrich the topic
D. Try to explain more of the brief topic
E. Try to take help of others in respect of addition or subtraction.

Results show that 40% male students adopt the strategy of adding new information to what has been learnt for enriching the knowledge about some thing (C). The characteristic mode of thining of most of the girls involved taking help of others in respect of addition or subtraction (E).

Table—6. Distribution of male and female students responses according to categorization of ideas as a style of learning (Intellective dimension)

Nature of Response

	A	B	C	D	E	Row total
MALE	9	3	22	1	15	50
	(18%)	(6%)	(44%)	(2%)	(30%)	
FEMALE	10	7	20	3	10	50
	(20%)	(14%)	(40%)	(6%)	(20%)	50
Col. total	19	10	42	4	25	100

$x^2 = 3.746$ not significant

A. Take notes on obtained idea in brief
B. Take notes emphazing on introduction or conclusion
C. Write down only the important points
D. Very careful about notes for not making it either elaborate or short
E. Making excellent notes by adding more information.

Table shows that writing down only important points in a topic (C) were found to be the most widely used mode by both male (44%) and female students (40%) for categorizing ideas relating to a subject-matter.

Table—7. Distribution of male and female students responses regarding preference for types of test (Attitudinal dimension)

Nature of Response

	A	B	C	D	E	Row total
MALE	4	5	13	16	12	50
	(8%)	(10%)	(26%)	(32%)	(24%)	
FEMALE	5	2	3	20	20	50
	(10%)	(4%)	(6%)	(40%)	(40%)	
Col. Total	9	7	16	36	32	100

$x^2 = 10.088$ with df 4 significant at $P < .05$

A. Prefer marrative or eassy type tests
B. Do better in oral examination
C. Do better in quizztype tests
D. Prefer yes/No/Tick/fill up the gaps types questions
E. Do better in mixed questions.

The results showed significant differences between male and female studen-ts as regards five categories of preferences for types of tests and examinations under attitudinal dimension of information processing. It was found that 32% boys preferred objective tests (D) (yes/No/Tick and soon), 26% liked quizztype (C), and 24% boys preferred mixed questions (E). Among girls 40% liked objective type (D) and mixed type questions (E). While 6% preferred quizz type examination. The results suggests that compared to boys both objectiv and mixed type of questions were more preferable and quizztype tests wer less preferable to the girls.

Table—8. Distribution of male and female students' responses regarding preference for ways of handling course (Attitudinal dimension)

Nature of Response

	A	B	C	D	E	Row total
Male	10	3	12	4	21	50
	(20%)	(6%)	(24%)	(8%)	(42%)	
Female	7	2	18	2	21	50
	(14%)	(4%)	(36%)	(4%)	(42%)	
Col. total	17	5	30	6	42	100

$x^2 = 4.116$ not significant

A. Understand easily by reading myself
B. Learn quickly hearing from others except teacher
C. Learn easily by doing practical
D. Learn better by hearing the lecture of the teacher first and then discussing him about the course.

Results showed that 42% boys believed that they would learn better by hearing the lecture of the teacher and discussing with him about what has been taught (E). 24% boys expressed the view of learning easily by doing practical work (C). Among girls 42% expressed the same feeling held by the boys (E). 36% of the girls believed that they would learn better by doing practical work (C). Learning by hearing from others except teacher (B) were found to be the least preferred strategy for learning to both sexes (6% and 4%).

Table—9. Distribution of male and female students responses regarding condition of learning (Attitudinal dimension)

Nature of Response

	A	B	C	D	E	Row total
MALE	12	3	6	2	27	50
	(24%)	(6%)	(12%)	(4%)	(54%)	
FEMALE	15	5	2	5	23	50
	(30%)	(10%)	(4%)	(10%)	(46%)	
Col. total	27	8	8	7	50	100

$x^2 = 4.438$ not significant

A. A place where only I shall be
B. Want other's instructions while studying
C. Donot want others instructions in study situation
D. Others presence does not create disturbance
E. Want necessary aids and instruments for learning.

Table shows that of the five conditions, lonely situation (A) and need for necessary aids and equipments (E) were the most preferred attitudinal modes among boys (24% and 54%) and girls (30% and 46%).

Table—10. Distribution of male and female students responses regarding mode of handling an individual assignment (Attitudinal dimension)

	Nature of Response					
	A	B	C	D	E	Row total
MALE	11 (22%)	27 (54%)	4 (8%)	7 (14%)	1 (2%)	50
FEMALE	12 (24%)	23 (46%)	1 (2%)	13 (26%)	1 (2%)	50
Col. Total	23	50	5	20	2	100

$x^2 = 4.042$ not significant

A. For better understanding read alone attentively
B. Understand better if teacher discusses with the class
C. Understand better if teacher only delivers lectures
D. Understand better of discussing with friends
E. Understand better in lecture/seminar

Table shows that 54% boys felt that for better understanding a teacher should discuss the lesson with the class (B). The same feeling were expressed by majority of the girl students (46%). For better understanding the mode of attending lecture seminar were found to be the least preferred modes (E) to both boys and girls (2% and 1%) respectively.

DISCUSSION

The results of the present study revealed significant difference between male and female students with regard to "preferences for type of tests" under attitudinal dimension. Results showed that compared to boys, both objective

and mixed type questions in examination were more preferable to the girls while quizz type and oral examination were least preferred method for examination. Boys also prefer objective and mixed type questions in examination but compared to girls quizz type tests were found to be more preferable to them. It is interesting to note that only narrative or essay type tests were disliked by both male and female students. The main finding of the study, therefore, suggests that the existing system of classroom examination needs to be improved so that it can be a positive source of furnishing feedback regarding academic achievement to both male and female students.

Except in one attitudinal dimension, the overall results, though, did not reveal significant difference between male and female students as regards modes of learning under intellective and attitudinal dimensions, yet observed trends of learning strategies among high school boys and girls of our country need to be pointed out. In intellective dimension differences among boys and girls were found in respect of reading style, writing style, and characteristics of thinking process, while learning something boys were found to adopt more of "reading once attentively", learn overall idea first and then write more relevant points, "paying attention to what the topic wants to convey", "try to add new information to enrich the topic" as strategies of acquiring knowlede. Girls, on the contrary while pursuing knowledge were found to adopt different strategies, such as, "read minutely ins and out of a topic", learn through concept and then write orderly," "try to take help of others in respect of addition or subtraction." In attitudinal dimension, however, except in preference for types of tests, both boys and girls were found to have more or less the same type of preferences for dealing with a particular course, learning conditions, handling an individual assignment and the like. Overall findings of the study, however, were found to be consistent with the findings of a cross-cultural study conducted by Haque in Phillippines in 1981 on graduate students.

In the conclusion, it should be pointed out that the size of the sample was too small. Majority of the schools selected for drawing samples were financed by government fund where children having good socio-economic condition generally read in. Validity of the questionnaire were not established. So from the findings of this pilot study no definite conclusion can be drawn regarding learning styles of boys and girls of secondary schools of Dhaka City. In future more studies with larger sample are needed to draw any firm conclusions.

Suggestions for future studies

a) Information processing involves multiple strategies which should be duly recognized for these tend to function in relation to achivement of the students. Therefore, it is essential to differentiate effectiveness of some learning styles over others for a specific academic task for the benefit of the students.

b) While developing a questionnaire for evaluating class performance and overall academic achievement a teacher must have sufficient knowledge of the learning styles of his students.

c) Considering the adoptive value of learning styles in general, it is suggested that teaching methods should be varied enough to accommodate various strategies in a classroom situation.

Taking into account of all these information and guideline, future study may give more scientific information about learning styles of secondary school student of our country.

References

Annis, L. & Davis, J. K. Study techniques and cognitive style : Their effect on recall and recognition, **The Journal of Educational Research**, Vol. 71, No. 3, 1983, 175-178.

Arnold, H. F. The comparative effectiveness of certain study techniques in the field of History, **Journal of Educational Psychology** Vol. 33, 1942, 449-457.

Ausubel, D. P. **Educational Psychology : A cognitive view**, N. Y : Holt, Rinehart & Winston, 1968.

Coop, R. M, & Brown, L.D, Effects of Cognitive Styles and teaching methods on categories of achievement, **Journal of Educational** Psychology, Vol. 61, No. 5, 1970, 400-405.

Haque, N. Y. **Learning Styles of selected groups of graduate students** in the **University of the Philippines : Psycho-socio-cultural dimensions,** unpublished thesis, college of Education, University of the Philippines, 1981.

Idstein, P. & Jenkins, J. R, Underlining Vs. Repetitive reading, **The Journal of Educational Research,** Vol. 65, No. 7, 1972, 321-323.

Reissman, F. Styles of learning, **NEA Journal**, 1966, 15-17.

EFFECT OF MATERNAL INTEREST AND ATTITUDE ON THE ACADEMIC ACHIEVEMENT AND SCHOOL ADJUSTMENT OF CHILDREN

Roquia Begum

and

Parveen Huq

Department of Psychology
University of Dhaka

ABSTRACT

This study observed the school achievement and school adjustment of 64 children (36 boys and 28 girls) in terms of their mothers' interest and attitude. Rosenberg's Maternal Interest questionnaire (1976) and Parental Orientation Inventory Developed by Ravichandra and Parameshwaren (1972) were used to measure maternal interest and attitude respectively. Total marks obtained by each student in the last annual examination was taken as a measure of school achievement while Cowen's AML scale (1973) served as a measure of school adjustment. Results showed that both maternal interest and attitude had significant effect upon school achievement. However, in case of school adjustment only maternal interest was found to be significant.

INTRODUCTION

Research findings have demonstrated that a variety of parental factors influence a child's academic achievement. These include the emotional relationship between parent and child, the attitudes of the parents toward school and school achievement and parental concern for and interest in the child's performance. (Johnson and Medinnus, 1969). Studies have shown that high achieving students perceived their family relationships in a positive way. They described their parents as approving, trusting, affectionate, relatively nonrestrictive and encouraging but not pressuring with respect to achievement. Moss and Kagan (1961) have demonstrated a close relationship between maternal acceleration

5—

and child's intellectual competence. Shaw and Dutton (1962) also demonstrated that there is a relationship between underachievement of children and parental attitudes. According to Ravichandra and Parameshwaran (1972) parental attitude towards child's rearing may be either achievement oriented or development oriented. Achievement oriented child rearing practice refers to parents' stress on rapid development, achieving excellence, specialization, competence and productivity. Development oriented child rearing practice, on the other hand, refers to parent's stress on spontaneity of behavior, all round development, happiness rather than acquisition, cooperation, creativity and originality among children.

Like academic achievement, adjustment in school is also influenced by parent-child relationship which in turn refers to maternal interest and attitudes. The term 'adjustment' refers to the extent to which an individual's personality functions efficiently in the world of people. Good adjustment of individuals indicates a kind of inner harmony in the sense that they are satisfied with themselves and have harmonious relationship with the pepole with whom they are associated (Hurlock, 1978). Zaman (1975) has shown that the mothers who would give more rewards, more suggestion, show more cooperation and participate in interactive play would have children who would be classified as adjusted in school. Well adjusted children appeared more cooperative, honest, emotionally stable, friendly and cheerful (Levy, 1943; Baldwin et. al, 1949; Becker et al, 1959; Sears et al, 1957; Stendler, 1950; Radke, 1946). In contrast, lack of maternal acceptance frustrates the child's need for love and increases his/her resistance to adopt the rules of the society in which he or she lives. It has been observed that rejected children are emotionally unstable and rebellious against social norms (Symonds, 1939).

On the basis of the above observations, it seems reasonable to believe that maternal interest and attitude might have an important effect on the child's academic achievement and adjustment in school.

Tne present study was, therefore, designed to observe the effect of maternal interest and attitude on the child's academic achievement and school adjustment.

METHOD

The Sample

The sample of this study consisted of 64 children (36 boys and 24 girls) and their mothers. The children were the students of classes VII, VIII, IX

and X from diffierent schools of Dhaka City and their ages ranged from 12 to 16 years. Mothers were from middle and upper middle class families and their educational qualification ranged from B.A./B.Sc. to Ph.D. level. They were engaged in different occupations such as teaching, practicing medicine, administrative service and house-hold work. One of the criteria for selection of subjects was that only those children were selected whose mothers were alive and their educational qualification was minimum graduation level.

Measurement of Maternal Interest

Maternal interest was measured by a Bengali version of a questionnaire developed by Rosenberg (1976). The questionnaire covered three different areas of life which represented fairly specific points of contact between the mother and the child. The three areas were— (1) Reactions to child's friends, (2) Reactions to the child's academic performance and (3) Responsiveness to the child at mealtime.

The questionnaire was a 5-point scale consisting of 15 statements taking five from each area maternal interest. The five response categories were "always", "most of the time", "sometimes", "seldom", and 'never", and the numerical weightage ranged from I to 5. Higher scores were indicative of more maternal interest and lower scores indicated less maternal interest in her child.

Measurement of Maternal Attitude

Maternal attitude was measured by the Parental Orientation Inventory developed by Ravichandra and Parameshwaren (1972). The scale consists of pairs of statements. In each pair of statement one indicates achievement oriented attitude and another is directed to development oriented attitude. The ratio of development orientation score to achievement orientation score is taken as a measuring index. All those who obtained a score of more than one were identified as development oriented and those who obtained less than one as achievement oriented.

Measurement of School Achievement

Children's total marks in the last annual examination were taken as a measure of children's school achievement.

Measurement of School Adjustment

School adjustment was measured by AML (Cowen, 1973) rating scale which is a brief 11 item scale designed to measure three dimensions of school children's

behavior. Acting out (A), Moodiness (M), and Learning Disorders (L). The (A) scale consisted of 5 items measuring such acting out behaviors as fighting, impulsivity, and restlessness. The (M) scale consists of 5 items measuring such behaviors as depression, hypochandriasis, and moodiness. The (L) scale consists of a single item (has difficulty learning). Each of the behavior of children were rated on a 5 point scale ranging from "seldom" or "never occurs" to "all of the time occurs" Sum of all the scores in three scales provided the children's adjustment in school. Lower scores in the AML scale were indicative of better school adjustment and high scores in the scale were indicative of poor adjustment in school.

Procedure

The questionnaire measuring maternal interest was administered to only those students who were selected for the present study. Students of different classes of a particular school were brought together in a room which was arranged beforehand for the administration of the questionnaire. They were asked to follow the instructions printed on the top of the questionnaire. In case of problems faced by the respondents the investigators offered necessary explanations. Children were told that the investigators were interested to know about their mothers' interactions with them in different situations. They were also assured that the information given by them would only be used for research purpose and would be kept confidential. The questionnaires measuring maternal attitude were sent to the mothers through their children and they were requested to return them the following day. A separate letter attached with the questionnaire was also sent to each mother requesting them to fill up a short bio-data sheet and the questionnaire. They were also assured that the information given by them would be kept secret.

RESULTS

The main purpose of the present investigation was to observe whether a child's school achievement and school adjustment varies as a function of maternal interest and attitude. For this children were first divided into two groups according to their scores on Maternal Interest Scale by splitting them at the median. The attitude scores of the mothers were divided into two (developmental and achievement oriented) according to their attitude towards child rearing. Data were then analyzed by 2×2 Analysis of Variance. Results of these analysis are presented in Tables 1, 2, 3, and 4.

Table-1.   Means of achievement scores of subjects according to maternal interest and attitude.

Type of Attitude	High Interest	Low interest
	Mean	Mean
Development oriented attitude	60,88	57·25
Achievement oriented attitude	69,19	62,50

Table 1 shows that the highest mean achievement scores were obtianed by high interested achievement oriented mothers, while lowest scores were obtained by low interested development oriented mothers.

In order to see whether achievement of children varies as a function of maternal interest and attitude the obtained scores were analyzed by Analysis of Variance.

Table 2.   Summary of the Analysis of Variance of performance scores of subjects with two levels of interest and two levels of attitude,

SV	df	SS	MS	F
Total	63	5495·86		
A (Attitude)	1	735·76	735·76	10·27*
B (Interest)	1	425·39	425·39	5·94**
AB	1	37·52	37·52	0·52
Error	60	4297·19	71·62	

* $p < .001$

** $p < .05$

Analysis of variance of performance scores show that main effects of both attitude ($F = 10.27$; $df = 1,60$, $p < ·001$) and interest ($F = 5.94$; $df = 1,60$; $p < ·05$) were significant.

However, the interaction between attitude and interest was not significant.

Table 3. Means of adjustment scores of subjects according to maternal interest and attitude of mothers.

Type of Attitude	High Interest	Low Interest
Development oriented attitude	22.06	32.81
Achievement oriented attitude	23.43	29.93

Table 3 shows that better school adjustment scores were obtained by children of both high interested development and achievement oriented mothers.

In order to see whether adjustment of children varies as a function of maternal interest and attitude, the obtained scores were analyzed by Analysis of Variance.

Table 4. Summary of the analysis of adjustment scores of subjects with two levels of interest and two levels of attitude.

SV	df	SS	MS	F
Total	63	5953.75		
A (Attitude)	1	9.0	9.0	0.115
B (Interest)	1	1190.25	1190.25	15.25*
AB	1	72.25	72.25	0.93
Error	60	4682.25	78.0375	

* $p < .001$

Analysis of variance of the adjustment scores show that the main effect of interest was significant at .001 level ($F = 15.26$; df 1, 60), i. e. adjustment varied as a function of interest. However, the main effect of attitude and the interaction between attitude and interest were not significant.

DISCUSSION

The results of the present study reveal that school achievement of children varied significantly as a function of both maternal interest and attitude. Mothers whose interest scores were higher were found to have children whose achievement in school were better than mothers whose interest scores were lower. This findingis consistent with Morrow and Wilson (1961), Moss and Kagan

(1961) who found that high maternal interest was positively related to a child's high intellectual competence.

Though it is true that the single factor most related to academic achievement is the child's intellectual capacity, yet other factors have also been found to play important role. One of these important factors is parental concern for their children. The results of the present study have demonstrated that parents who take more interest in their child's academic activities, such as inquiring about child's performance, giving rewards, suggestions and showing concern about any difficulties in school have children whose academic achievement is high. This suggests that when children feel that parents are concerned about their studies, they get inspiration to work harder and achieve better results in school. This result also lends support to the study of Shaw and Dutton (1962) who showed parental unconcern for their children was positively related to their underachievement in school.

Similarly, like interest attitudes of the mothers were found to be a significant determinant of children's academic performance. A glance at table I, will show that highest mean performance scores were obtained for high interested achievement oriented mothers. This finding is consistent with some earlier studies (Shaw and Dutton, 1962; Kaltovsky, Preston and Crandall, 1964) who showed that achievement oriented parents stress intellectual achievement for their children. It seems reasonable to believe that excessive pressure for achievement accompanied by satisfactory and rewarding relationship with parents does not produce anxiety and resentment in the child. As a result the child gets inspiration to work with full capacity and try to fulfil their expectations.

Another purpose of the present study was to see whether school adjustment of children vary as a function of maternal interest and attitude. The results showed that adjustment is influenced by only maternal interest. The child who grows up in a healthy home environment where his mother accepts him and shows interest in him makes good adjustment in and outside the home.

The study however failed to show any significant effect of maternal attitude on child's adjustment in school. This may be explained by the fact that attitude whether development or achievement oriented did not have any adverse effect on school adjustment since it was associated with maternal interest. As mentioned earlier excessive pressure for achievement or all round development of

children accompanied by a satisfactory and warm relationship with parents will result in better adjustment of children.

The present study has some limitations. The subjects were selected from Dhaka City and all the mothers were highly educated and they come from upper and middle class families. It would be interesting to observe if similar findings occur with samples varying in income, education and other socioeconomic conditions. Further research in this area is needed to provide detailed accounts of the impact of parents' interest and attitude on child's academic achievement and adjustment.

References

Baldwin, A.L.; Kalhorn, J., and Breese; F.H. The appraisal of parent behaviour. **Psychological Monographs,** 1949, 63; Whole No. 4.

Becker, W.C.; Peterson, D.R.; Hellmer, L.A.; Shoemaker, D.J.; and Quay, H.C. Parental attitudes and child adjustment. **Child Develpment.** 1959, 30, 119-130.

Cowen, E.L. The AML, A quick screeing device for early identification of school maladaptation. **American Journal of Community Psychology,** 1973, 1, 12-35.

Hurlock, E.B. **Child Development** McGraw Hill; International Student Edition, 1978.

Johnson, R.C. and Medinnus, G.R. **Child Psychology : Babaviour and Development** (2nd Ed), New York : John Wiley, 1969, 459-450.

Katkovsky, W., Preston, A., and Crandall, V. Parents' attitudes toward their personal achievements and toward the achievement behaviour of their children, **Journal of Genetic Psychology,** 1964, 104, 67-82.

Levy, D.M. **Maternal Overprotection** Columbia University Press, New York, 1943.

Morrow. William R., & Wilson, Robert R. (Fulton State Hospital) Family relations of bright high-achieving and under-achieving high school boys. **Child Development.** 1961, 32, 501-510,

Moss, H.A. and Kagan, J. Stability of achievement and recognition behaviour from early childhood through adulthood. **Journal of Abnormal and Social Psychology,** 1961, 62, 504-513.

Radke, M.J. The relation of parental authority of childrens Behaviour and attitudes. **University of Minnesota Institute of Child Welfare, Monograph No.** 22, 1946.

Rivichandra, K. and Parameshwaran, E.G. Construction of parental orientation inventory. **Osmania University Research Bulletin,** 7, 1972.

Rosenberg M. Parental interest and children's self-conceptions. **Sociometry,** 1976, 57, 35-49.

Sears, R.R. Maccoby, E.E. and Levin, H. **Patterns of Child Rearing,** 1957, Evanston III, Row, Peterson.

Shaw, M.C. and Dutton, B. E. The use of the parent attitude inventory with the parents of bright academic underachievers. **Journal of Educational Psychology,** 1962, 53, 203-208.

Stendler, C.B. Sixty years of child training practices. **Journal of pediatrics,** 1950, 36, 122-134

Symonds, P.M. **The Psychology of Parent Child Relationships,** 1939, Appleton-Century-Croft, New York.

Zaman, S.S. Mother-child interactions as a function of child's level adjustment and intelligence. An unpublished doctoral dissertation, 1975.

IDENTIFYING CREATIVITY

Mehtab Khanam

Department of Psychology
University of Dhaka

ABSTRACT

The present paper reviews creativity research on five parameters of creativity as they affect the individual : (a) Creativity as related/unrelated to intelligence, (b) Cognitive factors associated with creativity, (c) Personality aspects of creativity, (d) The potential creative and (e) Motivational characteristics associated with creativity. Despite differences in age, cultural background, area of operation or eminence, a particular constellation of psychological traits emerges consistently in the creative individual and forms a recognizable pattern of creative personality. These persons also appear distinguished more by interests, attitudes and drives, rather than by intellectual abilities. If some small numbers of parameters can be isolated and defined in behavioural terms, great use of this might be mobilised for identifying creative potential.

The concept of creativity has been defined in many ways. For the purpose of understanding what creativity means we can mention some of important definitions given by different psychologists. Bartlett (1958) defined creativity in terms of "effective adventurous thinking ability". Kagan (1967) says, "creativity refers to a product, if made by a man, we give him the honour of objective". Torrance (1969) presented his views in favour of, "sensitivity to problem solving in a unique way". Barron (1969) says, "creativity may be defined quite simply as the ability to bring something new into existence". Renzulli (1981) has given a more precise definition. According to him, "creativity is a function of characteristics, such as originality of thinking, freshness of approach, the ability to set aside established conventions and procedures and it is the originality, novelty or uniqueness of a person's unique contribution".

The purpose of this review of research is to probe the psychological makeup of the creative individual. Studies have focussed on two tangential but highly relevant topics dealing with creativity. First, is creativity independent of intelligence ? Second, is personality per se a vital aspect of creativity ? In the

present paper a special consideration is given to characteristics consistent with creative performance and issues involved in these domains. These include, (a) creativity as related/unrelated to intelligence, (b) cognitive factors associated with creativity, (c) personality aspects of creativity, (d) the potential creative and (e) the motivational characteristics associated with creativity.

Creativity and Intelligence

Many studies were conducted to probe the relationship of creativity with intelligence and to find out the distinction between them. Several prominent investgators in this field, Getzels and Jackson (1962), Guilford (1967) and Torrance (1962) maintain that a valid distinction exists between the cognitive function designated 'creativity' and the traditional concept of general intelligence. In recent years it has become widely accepted (Feldman, 1980; Keating, 1980; Kagan, 1983, 1981; Wallach, 1970, 1971) th t one form of cognitive functioning in particular is minimally correlated with general intelligence. This ability is known as ideational fluency or the tendency to generate many ideas or associations. This work has its origin in the 1950s with Guilford's structure-of-intellect model (e. g. Guilford, 1956, Wallach, 1970). A formulation that included a major distinction between two kinds of operations—convergent and divergent thinking. Although convergent thinking fit the intelligence testing notion of finding a right answer as in vocabulary, verbal reasoning, verbal comprehension etc. divergent thinking involved generating multiple possibilities. The divergent thinking looked promising as an index of creative ability of potential (Guilford and Christensen, 1973). Studying highly gifted adolescents Getzels and Jackson (1962) found the correlation between IQ and Guilford's derived creativity measures to be on the order of .30. Torrance (1962) obtained essentially similar results. His correlations with various intelligence tests ranging from .16 to .32. Using seven creativity instruments, Flescher (1962) reported the average correlation with California Mental Maturity scores was .04 for his sample of 110 six graders, suggesting definite independence of creativity indices from intelligence. Barrons (1963) suggested that the relationship between intelligence and creativity might depend on the type of creativity being considered. He found that creative writers who produce original work have mean IQ around 140 or higher. Also where subject-matter itself requires high intelligence for the mastery of its fundamentals as in mathematics and physics, he found that correlation with creativity is higher than it is for artists. Walberg

(1961; 1971), Rasher and Hase (1978) studied childhood characteristics of the highly eminent, focussing upon their childhood IQ. They found philosophers to have the highest mean IQ followed by scientists, writers and artists. In the light of these findings, we may say that intellectually gifted people may or may not be creative and intelligence should be considered necessary but not sufficient condition for creativity. The degree of correlation between these varies from slight to substantial depending upon the range and type of creativity.

Cognitive Factors

One of the variables emerging as particularly distinctive of the creative is cognitive preference for complexity — the rich, dynamic and assymetrical as opposed to simplicity. This perceptual style is typical to the creator in various fields. Using Revised Art (RA) scale of the Welsh Figure Preference Test, that successfully discriminated artists and non-artists, Barron (1953), Barron and Welsh (1952), and Gough (1961) demonstrated this predisposition as characteristic of research scientists, creative architects and creative writers.

Ray Chaudhury (1966) using this same instrument in India furnished supporting cross-cultural evidence. Investigating musicians and painters, he reported that the mean RA scores of these artists were significantly higher than those of non-artists. Eisenman and Robinson (1967) found cognitive preference for complexity was significantly related to a high score on a paper-and-pencil personality measure of creativity. The reported lack of significant correlation value (.14) between the Standord-Binet and the creativity test scores also suggested that this dimension was independent of IQ domain. Thus a cognitive predisposition for complexity appears to be a distinguishing feature of the creative person, regardless of the field of creative endeavour at various developmental levels. Apparently the creative individual has the capacity to integrate this richness of experience into a higner order synthesis.

Personality Characteristics

The most provocative concepts regarding personality characteristics of the creative individual has been derived from eminent and well-established individuals. Some of the most useful findings have emerged from the Institute for Personality Assessment and Research in CPI (California Psychological Inventory), highly creative architects emerged as self-confident, aggressive, flexible, self-accepting, little concerned with social restraints or others'

opinions and strongly motivated to achieve primarily in those situations where independent thought and action, rether than conformity were required. Ray Chaudhury (1966) established on the basis of Rorschach, TAT and Szondi Test that professional musicians in India were more distinctly marked by emotional and temperamental, than by cognitive characteristics. As compared to noncreatives, they appeared to be more egocentric, exhibitionistic, more stimulated by frustration and preferred activities that permitted a greater range of individualism and self-expression. Cattell and his associatiates (1955), using a factor-analytic approach with the sixteen Personality Factor Test, which yields more easily quantifiable results, have come up with essentially similar data. Creative artists and writers demonstrated the same salient traits of ego-strength, dominance, self-sufficiency, sensitivity, introversion, desurgence and radicalism. Creative psychologists (Drevdahl, 1964) displayed the characteristics independence and nonconcern with social environment.

Despite the various approaches and heterogeniety of instruments, many similarities in the results can be seen across samples differing in cultural background, eminence and profession. Independence manifested not only in attitudes but also in social behaviour consistently emerged as being relevant to creativity as did dominance, introversion, openness to stimuli and wide interests. This evidence points up a common pattern of personality traits among creative persons and alao that these personality factors may have some bearing on creativity regardless of the field.

The Potential Creative

One of the questions with which creativity research is concerned regards the similarity of personality traits of young creatives to those of recognised creative adults. Investigations of undergraduates (Drendahl, 1956; Garwood, 1964; Rees and Goldman, 1961), high school adolescents (Cashdan and Welsh, 1966; Getzels and Jackson, 1962; Holland, 1961; Littlejohn, 1966; Parloff and Datta, 1966) and elementary school children (Torrance, 1962; Wesberg and Springer, 1967) found that highly creative students have personality structures that are congruent to but less sharply delineated than those of the mature, recognised creatives.

Motivational Characteristics

In identifying the creatives there is also the "why" aspect which focusses on the nature and degree of motivations—conscious and unconscious—assumed to energise these individuals. From one point of view, motivation for creativity is seen as a desire to maximise the experience of ones own expressive potentials. Golann's, (1962) study of highly creative males, identified on the basis of RA scale, who indicated a preference for activities allowing for self-expression, independence and the use of creative capacity, while low creatives tended to prefer activities essentially opposite.

Torrance (1965) probing this motive in high school seniors through expressed aspirations suggested that their subjects' greater striving and need for excellence and greater attraction to unusual and unconventional types of achievement, indicated a strong desire to discover and use potentialities. This tendency is consistent with Maddi's (1965) contention that the true creative is motivated by an intense need for quality and novelty and this may be viewed as relatively concrete expressions of general tendency toward self-actualisation. He has presented empirical findings to buttress the posited relationship between creativity and need for novelty by citing significant correlations between novelty or imaginative productions and a tendency to prefer novel endings.

If we look at the above mentioned studies critically, we may say that the most glaring deficit in the research on creativity has been the absence of both replicative studies, as well as the followup investigations. The reader, seeking a clear picture of populations or wishing to relate findings from one investigation to another experiences particular difficulty when encountering such terms as 'creative thinker', 'divergent thinker' and 'original thinker', insufficiently and inadequately defined. Besides this, a host of studies deal with relatively small samples, thereby increasing the possibility of error and biased results. The necessity of longitudinal studies is obvious for determining qualities that contribute to creative performance, personality changes within the developing creator and the interaction of personality. These longitudinal studies would also be basic to any developmental theory of creativity.

Instruments that can be used for early identification is needed. If the results of future investigations are to become meaningful contributions to the cumulative literature on creativity, the data suggest that the assessment of

creative potential cannot merely rely on singular intellectual traits, factor-analytically derived, but must also include cognitive styles and personality variables rooted in theoretical concepts.

In concluding this article, it may be mentioned that the studies reviewed here were conducted outside Bangladesh. Tremendous creative potentials must also exist in Bangladesh, which can only be identified through the use of appropriate instruments or tests and also conducting research in this area.

References

Barron, F., **Creativity and Psychological Health** : Origins of personality and creative freedom. Princeton, N.J. Van Nastrand, 1963.

Barron, F.: Complexity — Simplicity as a personality dimension. **Journal of Abnormal and Social Psychology,** 1953, 48, 163-172.

Barron, F., & Welsh G.: Artistic perception as a possible factor in personality style. Its measurement by a figure preference test. **Journal of Psychology,** 1952, 33, 199-203.

Bartlett, F.C. **Thinking—An experimental and Social Study,** London : Allen & Unwin, 1958.

Cashdan, S., & Welsh, G.S. Personality correlates of creative potential in talented high school students. **Journal of Personality.** 1966, 34, 445-455.

Cattell, R.B., & Drevdahl, J.E. A comparison of the personality profile (16 PF) of eminent researchers with that of eminent teachers and administrators, and of the general population, **British Journal of Psychology,** 1955, 46, 848-261.

Chaudhury, Ray M. Creativity : A review of psychology researches **Indian Psychological Review,** 1966, 2, 91-102.

Chaudhury. Ray M. Studies in artistic creativity : Personality structure of the musician. Calcutta : Express printer private Ltd., 1966.

Drevdahl, J.E. Some of the developmental and environmental factors in creativity. In C.W., Taylor (Ed.), **Widening Horizons in Creativity.** New York, Wiley, 1964.

Eisenman, R., and Robinson, N. Complexity-Simplicity, creativity, intelligence and other correlates. **Journal of Psychology.** 1967, 67, 331-334.

Feldman, D.H. A developmental framework for research with gifted children. In D.H. Feldman (Ed.), **New Directions for Child Development**. No. 17, Developmental approaches to giftedness aud creativity (pp. 31-45). San Francisco : Jossey-Bass : 1982.

Flescher, I.: Anxiety and achievement of intellectually gifted and creatively gifted children. **Journal of Psychology**, 1963, 56, 251-268.

Garwood, D.S.: Personality factors related to creativity in young scientists. **Journal of Abnormal and Social Psychology**, 1964, 68. 413-419.

Getzels, J.W. & Jackson, P.W.: Creativity and intelligence : Explorations with gifted students. New York : Wiley, 1962.

Golamn, S F. The creative motive **journal of Personality**, 1962, 30, 588-600.

Gough, H.G.: Techniques for identifying the creative research scientist. In; Conference on the creative person, Berkley : University of California. Institute of Personality Assessment and Research, 1961.

Guilford, J.P. : The structure of intellect, **Psychological Bulletin**, (1956) 53, 267-293.

Guilford, J.P.   **The Nature of Human Intelligence** New York : McGrawHill, 1967.

Guilford, J.P. & Christensen, P.R. The one-way relation between creative potential and IQ. **Journal of Creative Behaviour**, (1973): 7, 247-252.

Holland, J.L. Creative and academic performance among talented adolescents. **Journal of Educational Psychology**, 1961, 52, 136-147.

Kagan, J., Introduction : In J. Kagan (ed.) **Creativity and Learning**. Boston Houghton Mifflin, 1967.

Keating, D.P. The creative potential of mathematically precocious boys. In R.S. Albert (Ed.), **Genius and Eminence : The social psychology of creativity and exceptional achievement** (pp. 128-138), Elenford, Ny: Pergamon press. 1983.

Kagan, N. Stylistic variation in childhood and adolescence : creativity, metaphor and cognitive styles. In J.H. Flavel & E.M. Markman (Eds.), **Handbook of Child Psychology** : Vol. 3, Cognitive development (4th ed. pp. 630-706), New York : Wiley 1983.

Little John, M.A., A comparison of responses of ninth graders to measures of creativity and maseulinity-femininity. Unpublished doctoral dissertation, University of North Carolina, 1966.

Maddi, S.R. Motivational aspects of creativity. **Journal of Personality**, 1965, 33, 330-347.

Parloff, M.D., and Datta, L.E.: Personality characteristics of the potentiality creative scientist. **Science and Psychoanalysis**, 1965, 8, 91-106.

Perkins, D.N. **The Minds' Best Mork.** Cambridge, M.A: Harvard University Press. 1981.

Rees, M.E., & Goldman, M. Some relationships between creativity and personality. **Journal of General Psychology**, 1961, 65, 145-161.

Renzulli, J.S. What makes giftedness, Re-examining a definition. **Ph Delta Happen**, 66, 180-184 and 261, 1978.

Torrance, E.P. **Guiding Creature Talent.** Englewood Cliffs, N.J: Prentice-Hall, 1962.

Torrance, E.P. and Dauw, D.C. Aspirations and Dreams of three groups of creativity gifted high school seniors and comparable unselected group. **Gifted Child Quarterly**, 1965, 9, 177-182.

Walberg, H.J., Rasher S.P. and Hase, K. IQ correlates with high eminence. **Gifted Child Quarterly**, 1978 22, 196-200.

Wallach, M.A. **Creativity.** In P.H. Mussen (Ed.), Carmichaels' manual of child and psychology Vol. 1 (3rd ed., pp. 1211-1272), New York : Wiley. 1970.

Wallach M.A. **The Intelligence/Creativity Distinction.** Morristown, N.J: General Learning Press. 1971.

AN EARLY INTERVENTION PROGRAM FOR MENTALLY RETARDED CHILDREN OF BANGLADESH : A PORTAGE SERVICE

Shaheen Islam

Department of Psychology
University of Dhaka

ABSTRACT

The present study evaluates the effectiveness of an early intervention model i. e., Portage Guide to Early Education (FGEE), to provide services to the mentally handicapped children of Bangladesh. Attempts had been made to involve parents in the education and training of their children with handicap. The study covered two areas of the guide i. e. Cognitive area and Infant Stimulation. The behavioral checklist and the curriculum cards were translated in Bengali and was applied to train 13 handicapped children (I.Q. below 70) of 6 to 18 years age range. Five handicapped infants, aged 8 to 19 months were also included in the study. Results indicated greater progress in younger groups of children than the older group. No significant effect of mothers was found. In general almost every child made substantial gain from the Portage Services provided to them. After proper adaptation Portage Guide is likely to be successful in training new and additional skills to the handicapped children of Bangladesh.

INTODUCTION

Improving the fate of the mentally disabled living in the developing countries is a difficult and challenging task. In Bangladesh the overwhelming majority of children are deprived of the basic conditions of proper growth and development, but those who suffer the most are the mentally handicapped (Ahmadullah et al 1979). Instead of special care and support they are subject to negligence and charity. There is a general lack of awareness that a child with mental limitation can become a productive and self supporting citizen like any other normal child Moreover inadequacy of trained personnel to deal with these mentally handicapped children is also a major problem faced not only in developing countries like ours but also in the developed countries. Recent

movements towards innovative preschool early education programs have shown promising results (Jesion, 1984). Early detection of disability with early intervention is of prime importance in reducing the risk of secondary problems and helping children to develop their full potentials (Thornburn 1981). Current views also emphasize the involvement of parents, the primary caretakers, as crucial in child's development (Brecker and Casuso 1979; Johnson et. al., 1980; Shearer 1976; Bronfenbrenner 1975; Anderson, 1980). Research evidence indicates that intervention programs that began as early as possible and that involve parents in working with the children had greater and long-term impact on child's development (Hunt 1969; Bloom 1964; Bronfenbrenner 1979; Pollit 1979). One of such low cost community based training model is the "Portage Guide to Early Education (PGEE)". It is an early intervention model developed to serve as a guide to teachers, aids nurses, parents and others who need to assess a child's behaviour and plan realistic curriculum goals that lead to additional behaviour skills (Bluma, Frohman and Helliard 1976).

PGEE is devised for use with normal preschool children and preschool handicapped children between mental ages from birth to six years and attempts to involve parents in the education of their children. Since the first few months of life is a critical period in infants' development, the skills from birth to four month level were separately included in the guide.

In Bangladesh facilities for the care of mentally retarded people are very limited. There are only two voluntary organizations which run training programs for retarded children and adults (Zaman, 1986). Innovation of any intervention programme for mentally handicapped in Bangladesh calls for awareness building of parents, professionals and even the policy makers. So far all efforts have been taken up by voluntary non-government organization. One innovative idea had been the application of 'WHO Training Manual for the Disabled'. It had been found to be very effective for the handicapped children of rural as well as urban areas of Bangladesh with very little expenses involved (Zaman 1986). It seems necessary to develop appropriate inexpensive, low cost techniques for diagnosis and special education of mentally retarded children of Bangladesh considering the cultural content of the country.

The portage format was originally conceived by Shearer and his co-worker in 1969 and later revised by Shearer and Shearer in 1982. Research studies

since 1972 have established its utility and practically in various areas of develop-
ment i.e. cognition, language, motor, socialization, self-help etc. The results of
these studies as indicated by shearer and shearer (1980) shows that handicapped
children can progress above their expected development rate and that parents
can initiate, observe and accurately record these changes. Daily (1981) has
discussed a number of crucial points which have their operational value
in setting up, evaluating and maintaining a protage project. Wesmacott and
Cameron (1981) have also extended functional approaches for the modification
of behaviour and acquisition of new skills. Protage early intervention model
has been replicated extensively in 140 sites in the United States and Canada.
Portage procedures and materials have been successfully adapted for serving
developmentally delayed preschool children in Jamaica (Thornburn 1981) and
served an early intervention resources in other countries like India, Japan,
Spain, Great Britain (Tehal Kohli 1981, Blunden, 1979, Cameran. 1981,
Llanos 1979). The model has now been implemented in over 20 countries.
Attention to factors such as the experience and educational background of
staff, local child rearing practices, traditional values, family roles and community
involvement in the planning and execution of the program have often been
extremely helpful in guiding a successful implementation (Jesein 1984).

Purpose of the Study

The major purpose of the present pilot project was to evaluate the possibility
of adpting Portage Guide to Early Education as a new early intervention
training model for (a) preschool mentally handicapped children in cognitive
area of development (b) enhancement of activities performed by an infant by
various stimulation (infant stimulation). The main objectives were :

1) to provide an early intervention programme for the mentally handicapped
   children in Bangladesh.

2) to develop a community based training guide helpful in training the
   professional para-professionals and even the parents to meet the demand of
   specialists in this field.

3) to involve parents in effective training program of their mentally
   handicapped children.

METHOD

Subjects

The tryout sample consisted of 12 normal healthy middle class children of 0-6 years and 8 infants of 0 to 4 months of age. From each age group of 1 year interval two children were taken.

Initially 16 mentally handicapped children of 5 to 18 years of age were selected form a special education school Kalyani of Bangladesh Protibondhi Foundation. Six infants of 6 months to 1 year 7 months of age, except one, were selected from the clinic Shishu Bikash Clinic of the same Foundation. Three children and 1 infant dropped out from the project because of their discontinuation with the school or clinic. Final sample consisted of 11 children of mental age below 6 years and 2 children of mental age of 8 years. Final number of infants included in the study were 5 of which 1 was severely retarded 6 year old child.

Materials used

a) Developmental checklists by Bluma et. al. (1975) listing "the sequential behavior from birth to six years of age in the devlopment of cognitive behaviour and ' the early skills from birth to four month level" (Infant Stimulation) to recall and assess an individual child's or infant's progress.

b) Two sets of curriculum card listing possible suggestions for teaching the behaviours in the checklists (cognition and infant stimulation).

c) Case history of the subjects collected from the record file of the school to find out the mental age and other family information of the children.

Procedure

Among the six developmental areas covered in PGEE only two areas such as (1) cognitive area and (2) infant stimulation were selected for the present study.

Cognition

Cognition or thinking is defined as the ability to remember, see or hear likeness and differences and to determine relationships between ideas and things. Cognition takes place inside the child we can measure it

either in terms of what the child says or does. The curriculum in the cognitive area includes activities ranging from beginning of awareness of self the immediate environment to the development of number concepts repeating stories and making comparisons.

Infant Stimulation

Infant stimulation is defined as the stimulation and reinforcement an infant needs for the activities he performs which are prerequisite to this later healthy development and learning. This section of the Guide suggests activities of adults which could elicit appropriate responses from the child that would enhance his future course of development. The behaviour listed in this section can serve as a guide for teaching infants between 0 to 4 months as well as older children who are functionally of the same age level.

The study was conducted in three phases :

First phase

The behavioral checklists of 108 cognitive skills and 45 infant stimulation activities along with the corresponding card files of suggested teaching methods as given in PGEE were translated in Bangla and necessary adaptation and modifications were made in order to suit our cultural background. The card referring to behavioral skills involving language ability (English) were translated and adapted in Bangla. The teaching aids and materials required for teaching various skills were constructed or collected from different sources.

Second phase

In order to see the applicability of behavioral skills listed in the PGEE guide the translated version was initially tried out on 12 normal children of Bangladesh, of various age group (0-6 years). The tryout revealed that children of 1 year of age could successfully perform about 10% to 90% of the behavioral tasks listed for 0-1 year age group in the PGEE list group. Items which were missed, was due to unfamiliarity and which they could learn easily after one or two demonstrations. Informal interview with the mothers of children below 6 years also confirmed the applicability of these behavioral skills for the children of Bangladesh.

Similarly, the checklists of 'Infant Stimulation' was tried out on 8 normal healthy infants of 0 to 4 months of age. The result indicated that the activities listed in the PGEE checklists were readily performed or elicited by the infants of 4 months of age.

Third phase

Finally the translated version of PGEE ('Cognitive' and 'Infant Stimulation') was used to train the mentally handicapped children and infants to see the workability and usability of the model as a 'training package'.

Initial assessment of each child/infant was made through the checklist upon entry into the training program. This determined the starting point of the training program and the baseline for assessing further progress of each children. Unless stated otherwise, if a child performed the behavior easily without aid or on request, a credit was given to the child for the skill. The instructor continued to assess the behaviour until she reached a point where the child could not perform any more of the items. Individual training program was undertaken for each child for at least twice a week for 30 to 40 minutes. Once a skill was chosen the child was asked to perform the task as it was stated. Necessary materials were supplied and his or her performance were observed. For infants, appropriate stimulations were provided to elicit desired response from the child. Mothers were instructed to follow the suggested methods at home. Following the suggested methods of the cards training on the chosen skills were given to each child separately. A behavioral objective for each child was set considering his or her handicapping condition.

Training was given for six months according to the behavioral sequence listed in the checklist. Whenever necessary, tasks were broken into small steps and physical, verbal and visual aid was provided. Since parental involvement in education and treatment of children had achieved prime importance in portage project, parental coöperation were sought during the training program. Mothers of 6 children agreed to cooperate with the program. In case of infants, all mothers except one, participated actively in the program.

Number of items learnt during the training program was recorded. The training program was devided into two groups :

Group 1 : Training involving mothers—In this group mothers cooperated in the training program. The advisor explained the chosen task to the mother and gave necessary instructions to follow-up at home. Activity chart was given to them to keep record of child's progress advisor worked with the mother in the clinic.

Group 2 :   Training without involving mothers — In this group the advisor worked alone with each child without any help from the mother in the clinic.

RESULTS AND DISCUSSION

Table 1   presents the distribution of age, sex, mental age and IQ of total 19 children included under PGEE training program.   In cognitive area two children who had mental age of 8 years were excluded from further calculation of the results because PGEE is primarily meant for children having mental age of below 6 years.   However their inclusion in the programe was justified on the ground that only they had successfully accomplished 108 cognitive skills, which made the tryout of all the cognitive skills with mentally handicapped children possible.   The IQ of the children under the programme ranged from untestable to 75.

Table 1. Age, Sex, Mentalage and IQ of children trained under PGEE

PGEE area	No. of Children Trained	Sex Male	Female	Age Rating	Mental age Range	IQ Range
Infant Stimulation	5	4	1	6-19 month except one 6 yrs. old	—	Low func-tioning
Cognitive	13	5	8	6-18 yrs.	3-6 yrs. except two MA 8 yrs.	27-75
	18	9	9			

Table 2. Mean age and IQ of Children with and without mother's involvement in cognitive area

	Group 1 Mother Involved	Group 11 Mother not Involved
Age	8.83 yrs	11.0 yrs
IQ	42.5	51.4

Table 2   shows the average age and IQ of the children with and without mothers involvement in cognitive area.

Table   3. PGEE training sessions showing number of sitting and time spent with different groups.

Cognitive area	Group 1 Mother Involved	Group 11 Mother not Involved
Total No. of sitting	5.6	8.5
Mean No. of sitting	9.3	12 14
Total time spent	28 hrs.	63.75 hrs.
Mean time spent	46 hrs.	9.10 hrs.
Infant Stimulation		
Total No. of Sitting	40	8
Mean no of sitting	10	8
Total time spent	20 hrs,	4 hrs.
Mean time spent	5 hrs,	4 hrs.

Table   4. PGEE programme showing number of checklist items trained.

PGEE area	No. of checklist Items trained	No of checklist Item attained	No. of checklist No. Attained	No. of checklist Item continued
Cognition N=13	84	62 (73.80%)	9	14
Infant Stimulation N=5	43	25 (55.5%)	11	5

Table 3   presents the training sessions with number of sittings and time spent with different groups under PGEE programme.   Total and mean number of items learnt successfully to the criterion number of items not learnt and number of items continued at the end of the study, in cognitive and infant stimulation areas of PGEE are presented in Table 4. The table shows substantial amount of gain in both the areas of PGEE. In cognitive area 73·8% and in infant stimulation area 55·5% of the checklist items trained were learned to the criterion.

8—

Table 5. Table showing ages of children with improvement under PGEE training

PGEE area	Age	No of Children	Improvement	No Improvement
Cognitive	Below 10 years	7	5 (71%)	2
	Above 10 years	4	1 (25%)	3
Infant Stimulation	6-19 months	4	3 (75%)	1
	6 year	1	—(0%)	1

Table 6. Table showing no of improvement of children with and without mothers' involvement under PGEE training.

PGEE area	Mother's Involvement	No. of Children	Improvement	No Improvement
Cognitive	Mother Present	6	3	3
	Mother Absent	5	3	2
Infant Stimulation	Mother Present	4	3	1
	Mother Absent	1	—	1

Table 5 shows the age of the children with improvement and Table 6 shows the improvement of the children with and without mother involvement in both the areas of PGEE under study. In infant stimulation area highest percentage (75%) of improvement was found with children below 19 months of age. No improvement was made by the 6 year old profoundly retarded child. His only response was showing happines by clapping his hands when objects making sounds were presented. Moreover his mother was also not cooperative while the parents of other four infants were very much eager to cooperate with the adviser. This supports the findings of Hunt (1969), Bloom (1964), Pollit (1979) that early intervention programme when child is approximately 1 to $1\frac{1}{2}$ year old with active participation of parents, have greater impact on child's development.

Table 7. Mean no. of cognitive behaviour items learnt by different groups.

Age	Mothers Involvement		Mean
	Mother Present	Mother Absent	
Below 10 years	6.5 N=4	5.3 N=3	5.9
Above 10 years	4.0 N=2	4.5 N=2	4.2
Mean	5.25	4.91	

In cognitive area children whose age was below 10 years made greater progress (71%) than the children above 10 years of age (23%). To determine the interacting effect of age and mother's involvement in cognitive area —number of items gained by different groups were analyzed and F test was computed. Table VII presents the mean number of cognitive behaviour items learnt during the study by different age groups (below 10 and about 10 years) with or without mother's involvement.

Table 8. Summary of analysis of variance of cognitive items gained during portage project by different groups of subjects

Source	Df	SS	MS	F
Age	1	156.25	156.25	5.16*
Mothers Involvement	1	20.25	20.25	0.66
Error	1	30.25	30.25	
Total	3	206.75		

*$p < .05$

Table 8 gives the results of the analysis of variance. These results indicated that the younger group (below 10 year) made significantly ($< .05$) greater progress than the older group (above 10 years) under PGEE training programme. This finding emphasizes the importance of usefulness of Portage project as an early intervention model (Thornburn 1981). However no significant effect of mothers' involvement in cognitive area was found in the present study. There may be several reasons for this finding :

a) The amount of time spent and the total number of sitting possible for group II (without mother's involvement) was greater than Group 1 (with mother's involvement) (Table 3)

b) The mean IQ of group II was greater than group I, while mean age of group II was less than group I and hence better group of the skill taught (Table 2).

c) Since in group 1 mothers were the major source of bringing behavioural modification of the children, lesser achievement may also be attributed to lack of awareness of their children's problem, less enthusiasm and inability to carry out instructions due to too many domestic work and destruction at home. False promises by the mothers as revealed by the reluctance to keep prefer activity chart may also be one of the reasons for such results.

d   Better achievement in group II may be contributed to the fact that the abvisor was more actively involved in the training programme and used various reinforces both verbal or tangible (Biscuits, Candies, Toys etc).

However, one interesting findings was that the education level of the mothers who cooperated with the programme was higher than the mothers who did not. This indicates that educated mothers have more favourable attitude and more eager to help their children with handicap. More effective measure of evaluating mother's involvement along with changing attitude of the parents towards child's problems are therefore important in effectiveness of Portage service.

Based on the findings of present study it is suggested that before applying Portage services in Bangladesh, the developmental checkists and other requisite materials should be thoroughly checked and adapted according to the developmental requirement of children in Bangladesh. Parents should be properly guided and encouraged for active participation. Portage service should be extended to all areas of development with both normal and handicapped children and short term training programme should be undertaken to expand Portage serveces in the country.

In conclusion, it may be stated that after proper adaptation Portagé Guide is likely to be successful in training new and additional skills to handicapped children of Bangladesh.

References

Bluma, S, Searer, M, Frohman, and Helliard J. **Portage Guide to Early Education**. Revised Edition. Portage, Wisconsin : Cooperative Educational Service Agency 12. 1976.

Cameron, R. J. (Ed) **Working Together** : Protage in the U. K. Windsor, England. NFER-Nelson Publishing Company, 1982.

Daly, B. The Portage Innovation : Some consideration in Setting up, Evaluating and maintaining a portage project. Paper presented in the first U.K. Conference on Portage Service. Gurney Dexon Center, Lymington, August 1981.

Jesien, G. Preschool intervention programs in developing countries why–and one example of how, Unpublished Manuscript. Portage, WI : Cooperative Educational Service Agency 2, 1983.

Llanos, M. El ... ... intellectual de los ninosen las zonas marginales de Lima. Institute Interamericano del Nino, Montevedio, Uruguay, 1974.

Mahfoud Boucebei and Marie-Thereu Brau Training Specialized staff for the mentally handicapped—An approach for developing countries assessment children UNICEF 1981. 53/54, 105.

Mia. Ahmadullah. Md. Hafizul Islam and Md. Shamsher Ali. Situation of handicapped children in Bangladesh. Assignment children, UNICEF, 1981, 53/54, 199.

Shearer, D. Portage Project Readings. Portage, Wl : Cooperative Educational Service Agency 12, P5, 1980.

Shearer, M.S. A home based training model. In Lillie, D. Trobanis, P. (Eds) **Teaching parents to teach.** N.Y. Walker Publications, 1976, 131-148.

Tehol Kohli. Portage Service : An intervention program for pre-school mentally handicapped children with motor handicaps. **Indian Journal of Mental Retardation,** 1981.

Thornburn, M.J., In Jamaica, Community aids for disabled pre-school children, Assignment children UNICEF, 1981/53/54, 117.

A CROSS-CULTURAL STUDY OF EYE MOVEMENT

Sirajul Islam Khan
Department of Psychology
University of Dhaka

ABSTRACT

The present study was designed to investigate whether eye movements differ cultue rally. Fifty graduate research students of 25 to 27 years of age were employed as subjects. A group of 25, out of 50 subjects, randomly selected, was assigned to each of the two culturally different groups viz. Group 1 for Asian culture and Group II for European culture. The method based on the "Photoelectric" technique was used to record eye movements of the two groups of subjects under investigation. The results show that the eye movements occur siginficantly more frequently in Group I (Asian culture) than in Gorup II (European culture). Implications of the findings in the present study are discussed in the light of thinking process, an important aspect of human behaviour which may play a pertinent role in occurrence of eye movements of the subjects who differ culturally.

INTRODUCTION

The highly mobile human eye is very complex in nature. The retina, unlike the photographic plate, does not have the same spatial sensitivity. It is evident that visual acuity is remarkably high at the center of the visual field. Except for the geographically minute spot, the rod-free-ovea, which is smaller than 35′ of arc, the acuity of the entire retina is quite low. Although a very tiny area the fovea represents physically a very significant fraction of the total visual field physiologically it is the most vital area because with the aid of this tiny area the eye does all its critical vision.

The image which stimulates this area of the retinal part, located at the centre of the visual field, could be seen in greater detail. And the rest of the image could be seen in fewer and fewer detail, because it is further away from the centre of the visual field. To give an effective vision, mobility of

the eyes is an essential aid. By allowing the eye to rotate about its centre, one particular part of the image falls on the most sensitive central area of the retina for making vision effective and then, another part of the image comes into operation. In fact, in human eyes, the motor activity produces scanning of the image of the object of regard by the most sensitive photoreceptors (Haidinger, 1874).

It is evident that the highly mobile human eye fixates by positioning itself in such a way that the image of the object of regard falls at the centre, the area centralis, where the most acute vision takes place. This is the basis of the physiology of the movement of eye (Maxwell, 1856).

The perception of objects in the visual field is a consequence of an amazingly complex series of processes. It is observed that even in the least possible complicated situation, when the eyes are steadily fixating towards an object of regard directly, it is still complicated. Because, it has been suspected for many years that under such conditions, the eyes may, in fact, be constantly moving. Measures of such eye movements began to take place around the turn of this centrury, and very recently, within the last few years, the full picture of the process has been beginning to become clear (Davson, 1969).

Adler and Fliegelman (1934) described many features of eye movements. Since then, extensive studies on certain phases of this pheomenon have been offered by Lord and Wright (1948), Barlow (1952), and Ditchburn and Ginsberg (1952) in England ; Riggs and Rarlow (1950) in the United States ; Yarbus (1957) in the Soviet Union, among many others.

Four kinds of eye movements have been recorded by the investigators : high frequancy tremour, slow drifts, irregular movements, and rapid "flicker" or saccades. In the present investigation, we deal with the saccades.

The simplest type of eye movement is the sudden change in fixation from one object of regard to another. No change in the angle of intersection of the lines of sight, the vergence, takes place when the observer is at about the same distance from two objects. Indeed, the eye movement brings the retinal images of the new fixation point on the two foveas of the eyes with a very marked speed. Eye movement of this kind is known as saccades.

During fixation, the eye performs a characteristic pattern of movements giving rise to drift, tremours and microsaccades (Alpern, 1969). The average

extent of the saccadic movements is 5.6 minutes of arc (Alpern, 1969). Wertheimer (1952) reported that saccades are remarkably stereotyped. But Saslow (1967) found a consistent difference in saccadic movements. Dallos and Jones (1963) found that the eye movements occurred in step with target after the fourth jump when a series of successive saccades between two points in a regular sequence was made by their observers. Yarbus (1967) reported that the subjects made one or two intermediate stops between saccades when they were asked to make a slow change in fixation. But when they were required to make a rapid change in fixation, he found eye movements characteristic of reduced duration of fixation.

Tada and Tsukahara (1978) reported that there was marked individual difference in 'saccadic eye movements', but not in the 'smooth pursuit movements'. Their results essentially supported the "motor-function-excellence" hypothesis for "hasty" responses which has been emphasised by the authors of the test (Maruyama and Kitamura, 1965).

Findlay (1974) noted that it is difficult to understand fully the function of the eye movements in the visual precesses, and at the same time one of the most difficult problems with which the psychologists are faced in this particular area is the recording of the fixation eye movements with sufficient sensitivity. By developing the existing techniques, Findlay has devised an apparatus for recording saccades during visual fixation. This effective technique allows saccades to be recorded with considerable accuracy.

Eye movement can hardly be considered a plain and simple physiolygical matter. It involves psychological and social processes as well. It is therefore plausible to hypothesize that people from different cultures would differ in their eye movement as preception is largely a function of social learning. The present investigation was therefore designed to observe if eye movements differ between cultures.

METHOD

Subjects

In this investigation 50 male graduate research students, of 25 to 27 years of age were employed as subjects. Of there 25 were from Asian culture and 25 were from European culture.

Apparatus :

UV Recorder (S.E. 2006), UV Recorder Appliences, Verex, Microelectric Amplifier (Grass-Model P 16) and Photoelectric Cell were used for recording the eye movements (saccades) of the subjects under investigation. Photoelectric papers (Kodak Linagraph Direct Print-Type 1801, 6 in. 45m, light weight papers) were used for the recordings.

Kodak Carousal Projector, the stand for the projector, Programmable Carousal Projector with AIM (Bio-Sciences, Cambridge), Code Practice Oscillator (Ameco) and Advance J-2 were employed for presentation of stimuli used as task performance.

One set of slide-magazine (40 slides) were used for presentation of the stimuli. One Timer Counter (SC3-Advance Instrument) was used for recording the time that elapsed between presentation of the stimulus and the response made by the subject. Two keys (Type 365 A. No. 8891-Marconi International Marine Communication Co. Ltd.) were employed, one key was used for making the 'Correct' responses while the other for the 'Incorrect' responses of the subjects. One screen mounted on a wooden frame was utilized on which the stimulus-slide was flashad by the slide projector. A 'click' sound of 54 dB tone operating from the sound source, Birkbeck Laboratories Timer and Signal Apparatus, was emplyoed as a warning signal. It was placed 56 cm away from the subject.

Procedure

This experiment deals with the task performance attributing to Stimulus Processing Time (SPT). Stimulus Processing Time refers to the delay elapsed between the presence of more than one stimuli and the initiation of a response to one of the stimuli presented.

A head-band with the optician's trial frame (Cerryy and Paxton Croydonian) was abjusted on the subject's ears. The level of the subject's seat was so abjusted that a straight line between the subject's eyes was maintained. The screen was placed 240cm away from the subject's seat. The 'Random Y-Guide' (the light guide—Rank Taylor Hobson Fibre Optics) was then placed which was abjusted with the optician's trial frame. It was so adjusted in position that the light emitting from the 'Random Y-Guide' falls on the iris-sclera boundary of the subject's eyes. Hand-band and chin-rest were used to give a steady position to the subject.

F—9

One telegraphic key (marked as 'Correct') was placed under the finger of the right hand while another key (marked as 'Incorrect') under the finger of the left hand of the subject. The subject was required to make a 'right' response in terms of pressing any one of the two keys. This 'right' response to be made by the subject was in involving the task to find out the 'alphabetic position' of the second letter (stimulus) from the first letter (stimulus)—the 'exact alphabetic position' is a single digit to be found outby his mental counting. Immediately after finding out the 'alphabetic position' mentally, if the subject thought that the digit in between the two letters-flashed on the screen was correct, he would press the 'Correct' key (which was marked as 'Correct') placed under his right hand finger ; if he thought that the digit was incorrect, he would press the 'Incorrect' key (marked) kept under his left hand finger. Then, the subject was required to release the key immediately. The stimulus-slide would remain flashing on the screen of the projector as long as the subject would require to find out the 'exact alphabetic position' by his mental counting. As soon as he released the key, the flashed slide was changed.

The sequential order of exposure of the stimulus-slide was as follows :

Warning Signal (a click sound)	Stimulus Slide Exposure	Response (pressing-releasing the key)	Slide Change	Delay	Warning Signal
2 seconds	As long as required by the subject		1 second	3 seconds	2 seconds

Eye movements of each of 50 subjects (of both Groups) were recorded on the photoelectric papers during the experimentation. Speed of the recording of the photoelectric papers was 20 mm/sec., operated from the UV Recorder. The recording of each subject was taken out of the UV Recorder and it was then immediately developed under the fluerescent lamp.

Measures

The developed recording papers of each of 50 subjects were then taken for measures.

RESULTS

The results of the experiment are shown in Table 1.

Table-1. Means of the number of eye movements (saccades) and the results of t-test of the two Cultural groups.

Group	Mean	df	t
Group I (Asian Culture)	22.96	48	2·90*
Gorup II (European Culture)	17.64		

*$p < ·01$

DISCUSSION

From the results of the present study, it is found that there is a significant difference between the eye movements (saccades) of Group I and Group II. The difference between the means of Group I and Group II is significant at 0.01 level.

The findings of the present investigation provides evidence that the eye movements (saccades) happen to occur more frequently to the subjects belonging to the Asian culture (Group I) than the subjects of the European culture (Group II). A question may be raised here, why is it so ? The answer to this question may be as follows:

This increment in the frequencies of saccadic movements may be due to various factors, such as inattention, disinterest, demotivation, instability, etc. Psychologists of the present era have often talked about cultural differences in attention and effort. It may be that the European subjects in general, were more enthusiatic, attentive and than the Asian people. Europeans may have given much effort and investment of works (both physical and mental) than the Asians.

It seems from the result that the European subjects invested much more effort to perform the tasks (the stimulus processing time—SPT) in terms of eye movements, involving thinking process, as a result of which the frequencies of their saccadic movements happen to occur less than those of the Asian subjects. It is evident that effort (attention) gives rise to less frequent eye movements during performance of the tasks (Kahneman, 1973; Khan, 1974).

However the present study fails to provide a detailed account of the dynamics of cross-cultural difference in eye movement. It is suggested that further research be conducted to provide a satisfactory explanation in this regard.

Acknowledgement

References

Adler, H.F. and Fliegelman, M. Influences of visual acuity. Opthal., 1934, 12, 475,

Alpern, M. Movements of the eyes. In H.Davson (Ed) The Eye, Vol.3, New York and London : Academic Press, 1969.

Barlow, H.B. Eye mavements during fixation. J.Phys, 1952, 116, 290.

Dallos, P.J. and Jones, N.W. Learning behaviour of the eye fixation control system. Inst. Elect, Electrons., Engrs, Trans. Auto. Control, 1963, AC-8 218.

Davson, H. The Eye, Vol. 3 (Ed), New York and London : Academic Press, 1969.

Ditchburn, N.W. and Ginsberg. B.L. Vision with a stabilized retinal image. Nature, London, 1952, 170, 36.

Findlay, J.M. A simple apparatus for recording microsaccades during visual fixation. Quart. J. Exp. Psychol, 1974, 26, 167.

Haidinger, W. Uber das direct Erkennen des polarischen Lichtz undder Lage der Polirisationsebene. Ann. Phys. Chem. Ser., 1874, 2, 63, 29.

Kahneman, D. Attention and Effort. New York ; Prentic-Hall, Inc., 1973,

Khan S. I. Attentional influences on human fixation eye movements. Unpublished Researeh Work, University of Durham, England, 1974.

Lord M. P. and Wright. W.D. Eye movement during monocular fixation. Nature, London, 1948, 162, 25.

Marvyama, K. and Kitamura, S. Speed anticipation reaction test as applied to bus drivers. Tohoku Psychol., Folia. 1965. 21.

Maxwell, J. C. Oh the unusual sensitivity of the foramen Centrale to light of different colours. Rep. Brit. Assoc. Advant. Sci., 1956, 26, 12.

Ratliff, F. and Riggs, L. A. Involuutary motions of the eye during monocular fixation. J. Exp, Psychol., 1960, 40, 786.

Saito, S., Tada, H. and Tsukahara, S. Eye and eyeball synkinesis in human visual system. Fukushima. Med. Sci., 1978, 25, 3-4. 101-107.

Saslow, M.C. Latency for saccadic eye movements. J. Opt Sec.Amer., 1967, 57, 1030.

Wertheimer, G. Mechanisms of saccadic eye movements. A.M. A.Archs Opthal., 1952, 52, 710.

Yarbus, A. L. A new method of studying the activity of various parts of the retina. Biophys., 1967, 2, 165.

Yarbus, A. L. Eye Movements and Vision. New York : Planum Press, 1967.

INCIDENTAL LEARNING IN ACADEMICALLY BRIGHT AND DULL STUDENTS

Manzur Ahmed

Department of Psychology

Rajshahi University.

ABSTRACT

This study attempted to find out a lawful relationship between incidental learning and intelligence on the one hand, and between incidental learning and stimulus conspiquousness on the other. An experiment was designed for this purpose. In all 40 male subjects were used in this experiments. The 40 subjects were divided into three experimental groups and one control group. The three experimental groups varied in their intelligence level as determined by their academic achievement. Besides, two types of stimulus materials were used, viz., the symbols and the colours. The symbols were more conspiquous whereas the colours were made to appear less conspiquous. The results of the experiment fully confirmed the hypotheses that incidental learning is greater in academically bright subjects than in dull subjects, and that incidental learning is greater for more conspiquous stimulus items than for less conspiquous stimulus items. Finally it was concluded that incidental learning bears a definite and lawful relationship with certain antecedent conditions.

INTRODUCTION

It is intended in this present paper to provide an answer to the question : Is incidental learning a purely incidental phenomenon ? Or, is there any lawfulness in its nature also ? In framing this question, we are definitely considering the apparent meaning of the term "incidental". This term seems to bear the impression that incidental learning occurs per chance factor and thus it ordinarily rules out the possibility of any known background factors that may be significantly related to this phenomenon. The present paper is prepared with a view to finding out such relationship, if any, that may exist between a known background factor and the performance of the incidental learners. Attempts have also been in the past to find out such relationship.

Brown (1954) tried experimentally to find out a positive effect of over pronunciation and meaningfulness of materials on incidental learning. But his findings were in the negative.

Cohen (1966) found out some positive relationship between incidental learning and such factors as sex differences and some personality traits.

In the present study the researches wanted to ferret out the relationship, if any, that exsts between intelligence and incidental learning. It goes without a whit of doubt that intelligence has a considerable effect on learning in general. It is assumed here that the same will hold true for incidental learning too.

Instead of directly measuring the intelligence of the subjects and determining their level of intelligence, only their past academic achievement was taken into account. But it should be mentioned here that academic achievement cannot necessarily be the true index of one's intelligence since there is no perfect correspondence between the two. Rather academic achievement is a product of the combined effects of one's intelligence, the efforts one puts and the training one receives. Of course, it can be assumed that one's intelligence is reflected to a great extent upon one's academic achievement. But for precision, propriety and avoidance of any ambiguity, a specific statement of the problem is necessary. The study intended to find out if there is any positive relationship between past academic achievement and present performance of the learner in an incidental learning situation.

The researchers were also interested in finding out an answer to the questions : What happens when two types of stimulus materials differing in conspicuosness are used ? Would both be learned alike by the incidental learners ? In other words, it was intended to study the effect of stimulus conspicuousness on incidental learning. Thus the following hypotheses were formulated :

1. Recall score of the academically bright students is likely to be greater than that of the academically dull students in an incidental learning situation.

2. Recall score for more conspiquous stimulus materials is likely to be greater than that for less conspiquous stimulus materials in an incidental learning situation.

METHOD

Subjects

In all 40 male university students of undergraduate level were used as subjects in this expariment. Their age ranged from 18 to 22 years.

Apparatus and materials

Ten slides were used for projecting the learning materials. Each slide contained a nonsense syllable, a symbol or a geometric from and a patch of colour. There were thus 10 nonsense syllables and 10 symbols but only 5 colours. Hence each colour was presented twice with two fixed symbols and nonsense syllables. The entire one-third of the lower portion of the slide presented the colour, the upper two-thirds presented the nonsense syllable and the symbol side by side. The slides were projected on a white screen through a slide projector. A unifom duration of exposure was maintained at a rate of one second per slide.

Experimental Conditions

Forty subjects were equally divided into 4 groups, each group thus comprising ten subjects. The subjects of the first, second and third groups (experimental groups) were instructed to learn the nonsense syllables aud no hint was given ragarding the other two types of stimulus materials. Subjects of the fourth group (the control group) were instructed to learn the nonsense syllables, the symbols as well as the colours associated with them.

The first group comprised academically bright students, the second group, academically mediocre students, and the third group, academically dull students. Academic brightness was determined on the basis of the divisions obtained by the students in all past examinations. Each student was given a score of 3 for one first division, 2 for one second division and 1 for one third division. The sum total of all the scores was divided by the number of examinations teken by the student in order to find out his average score. According to this procedure, a student could obtain a maximum score 3 or a minimum 1. Students making a score of $2\frac{1}{2}$ or above were assigned to the bright group ; students making a score of $1\frac{1}{2}$ or below were assigned to the dull group ; and the students making a score in between these criteria were assigned to the mediocre group. The control group included students of all three types*

Besides, two types of stimulus materials, viz,, the symbols and the colours were used for incidental learning. The symbols werc more conspiquous, whereas the colours were made to appear less conspiquous.

---

* Unfortunately, all the three types of students could not be g iven equal representation in the control group due lo certain unavoidable circumstances. Control group consisted of 4 dull, 4 mediocre and 2 bright students.

The conspiquousness of the stimulus items were viewed in a relative sense and not in an absolute sense. The colours were less conspiquous in relation to the symbols both items being exposed simultaneously. If the symbols were not presented, it was quite possible that the colours would have become more conspiquous. Hence, it must be kept in mind here that the term 'conspiquousness' always meant a relative prominence of the two types of stimulus materials simultaneously presented. Colours were presented in such a way that it appeared more like a background condition than like a distinct stimulus items. Thus there were two types of variations in the experimental conditions. The first was concerned with an organismic variable variations in the past academic achievement of the students. The second was concerned with a stimulus variable — variations in the conspiquousness of the stimulus materials.

Each slide was exposed eight times and just after the eighth exposure the subjects of all groups were asked to give an immediate recall of the nonsense syllables, the symbols as well as the colours. They could give their recall of nonsense syllables and symbols in any other they found convenient. But in case of the recall of the colours, they were asked to specify which symbol or syllable was presented with which colour. (This special condition was laid down because of the small number of colours used in this experiment).

The result compared the performance of the control group with that of the three experimental groups in terms of their mean recall of the symbols and colours in order to find out the difference between intentional and incidental learning. Secondly, the mean recall of symbols and colours of the three experimental groups was compared in order to find out the effect of past academic achievement on incidental learning. Thirdly, the mean recall of symbol and the mean recall of colour in all the experimental groups was compared in order to find out the effect of variation in stimulus conspiquousness on incidental learning. Lastly, the mean recall of symbol and that of colour in the control group was compared in order to find out if there is any difference between the two, which might appear owing to the difference in their conspiquonsness.

Procedure :

The experiment was conducted in three sessions on two consecutive days. Two sessions were needed for all three experiment al groups in order to avoide the difficulty in accommodating all thirty students at a time in the experimental

room. Sitting arrangement for 15 students was made in the experimental room in such a way that from each seat the subject could conveniently see the white screen on which the slides were projected. Subjects of both the sessions were given the following instructions :

"We are interested in finding out the memorising capacity of the students. A number of meaningless syllables will be projected on this white screen. Each such nonsense syllables will be exposed for eight times. After the eighth exposure of all syllables, you will be required to write down, on a piece of paper which will be supplied to you later on, as many nonsense syllables as you can from your memory. Please do not keep any paper with you now and do not write anything before I ask you to do so at the end of the eighth exposure. Please be very attentive and careful in memorising the nonsense syllables, because this is a test of your memory. You may pronounce the nonsense syllables in this way (demonstration of pronounciation of one nonsense syllable not included in the slides) in order to memorise them well. But your pronounciation should in no way be audible to others. Do you follow ?"

The experiment was started after making sure that the subjects had understood clearly the instructions. The experiment was conducted as per our experimental design. There was approximately 1 minute time gap between two series of exposures. During this time the slides were shifted back in the prjoector for next series of exposures. Ten slides were randomly placed in the magazine of the projector in the begining of the experiment and the same order of presentation was maintained throughout the whole experiment.

In the third session the experiment was conducted on the control group. This time the subjects were instructed to learn all three types of stimulus materials which were exposed simultaneously. They were informed that their memory for all types of materials would be measured. Other part of the instruction was identical with the one given to the experimental group.

At the end of the experiment the subjects had to give their verbal reports and they were specially instructed to include in their report the answers to the following three questions :

1. Had you any previous idea about the experiment or any prior suspicion about its purpose ?

F—10

2. Had you any desire to learn the symbols and the colours ?

3. What was your feeling towards this experiment ?

RESULTS

Results obtained from the experiment are given in Table 1. Here the mean recall of the different groups for different learning materials are given.

Table 1. Mean recall of the three experimental groups and the control group

Groups	Description of groups	N	*Mean recall of non. syllables	Mean recall of symbols	Mean recall of colours
Exp. gr. 1	Academically bright	10	9.1	4.9	0.6
Exp. gr. 11	Academically mediocre	10	8.5	3.3	0.8
Exp. gr. 111	Academically dull	10	7.6	1.9	0.0
Grand mean of exp. gr.		30	8.4	3.37	0.46
Control gr. Mixed		10	7.5	7.7	6.5

* This portion of the result has been excluded from final analysis because the researchers were not concerned with it.

Table 2 below shows the difference between the control group and all three experimental groups. This measure was taken to find out he the difference between intentional and incidental learning.

Table 2. Comparison of the mean recall of the combined experimental group and control group.

Groups	N	Mean recall of symbols	Mean recall of colours	Mean difference
Control gr.	10	7.7	6.5	1.2
Exp. gr.	30	3.37	0.46	2.91
Mean difference		4.33	6.04	

A casual glance at Table 2 shows the obvious difference between the performance of the control group and the three experimental groups. The difference between the mean recall score (for symbol) of the two groups was 4.33 and t was found to be 7.60 which was significant far beyond 0.01 level of significance.

The difference between the mean recall score (for colours) of the two groups was 6.04 and t was found to be 11.47 which was also significant at the 0.01 level.

Table 3 below shows the differences in the performance of the three experimental groups. The three groups differed in their past academic achievement. In this Table, only the mean recall of symbols have been entered because it has become crystal clear in Table 1 that the mean recall of colours was obviously non-significant in all three experimental groups.

Table 3. Differences in the performance of the three groups

Mean recall	Bright 4.9	Mediocre 3.3	Dull 1.9
Mean recall	Mediocre 3.3	Dull 1.9	Bright 4.9
Mean difference	1.6	1.4	3.0

The mean difference between the bright and the mediocre groups was 1.6 and t ratio between the two scores was 1.25 which was not significant. The mean difference between the mediocre and the dull groups was 1.4 and t ratio between the two scores was 1.38 which was also nonsignificant. The mean difference between the bright and the dull group was 3.0 and t was found to be 2.46 which was significant above 0.05 level.

From Table 2 we also find the mean difference between the mean recall for symbols and the mean recall for colours in the three experimental groups. The mean difference between the two performances of the experimental groups was found to be 2.9 and t was found to be 4.9 which is significant far beyond 0.01 level.

From Table 2 we also find the mean difference between the mean recall of symbols and that of the colours in the control group. The mean difference between the two performances of the control group was found to be 1.2 and t was found to be 1.74 which was not statistically significant.

DISCUSSION

The results of the experiment bear a definite evidence of the confirmation of both the hypotheses. Completely in accordance with the first hypothesis, the result showed that there was greater incidental learning in academically bright students than in academically dull students. The mean recall of bright group (4.9) was significantly higher than that of the dull group (1.9). The mean difference between the two groups (3.0) was statistically significant beyond 0.05 level. The mean recall of the mediocre group (3.3) was in between that of the bright and dull groups as was normally expected. But the score of the mediocre group was significantly different neither from the bright nor from the dull group.

Two reasons may be offered for explaining this fact. First, the mediocre group overlaps in academic achievement with the bright group on the one hand, and the dull group, on the other. And hence, their performance in incidental learning situation may also overlap with both the groups. It might be due to this overlapping that the difference between the mediocre and either of two other group was not statistically significant.

The second reason is related to the small quantity of the total amount of incidental learning. This small quantity of incidental learning might be responsible for small inter-group differnces also. As it can be expected that increase in the total amount of incidental learning might lead to a pronounced inter-group difference. Even if all the intergroup differences were not statistically significant, the mediocre group differed perfectly in the expected direction both from the bright and the dull groups the difference being negative in relation to the bright group, and positive, in relation to the dull group.

The findings of the experiment thus established the fact that incidental learning varied directly with the academic achievement. But such relationship between the two can not be a causal one— because past academic achievement can not definitely influence the present performance in an incidental learning situation. Similarly it is also quite absurd to believe that present incidental learning can influence the past academic achievement. Rather it appears very convincing that both may be the results of some other common factor— the common factor being very obviously the level of intelligence of the subjects. Such assumption leads us directly to conclude that incidental learning varies positively as a

function of intelligence. But such conclusion can be drawn only with certain reservation which have already been mentioned earler. Among the known factors which seem to influence academic achievement besides intelligence are the past training and the present efforts. In the present experimental set up these two factors were assumed to be held constant. The possibility of past training can be ruled out by showing that the subjects here faced a learning situation which was equally novel to all of them and the learning items used in this experiment supposed to be equally unfamiliar to all subjects. The efforts of the subjects were also held constant by giving them a fixed number of trials and it may also be believed that the subjects equally paid their maximum attention to the stimulus field because of the carefully framed instructions given to them. Thus it can now be inferred that the variations in the incidental learning of the three groups were directly the results of variations in their intelligence level. This also points out an additional fact that academic achievement truly reflects intelligence level provided the group rathan than the individual is taken in to consideration. A very long and circuitous path of arguement has been take here in order to reach this conclusion. That is why the author is rather inclined to admit that such a conclusion should be checked by further experiments in which the intelligence rather than the academic achievement is directly manipulated as an independent variable.

Turning to the second hypothesis which stated, in effect, that incidental learning would be greater for more conspiquous stimulus items than for less conspiquous stimulus items. Experimental results fully confirmed the second hypothesis. The combined mean recall of all three experimental groups for symbols was 3.37 and that for the colours was 0.47. The mean difference was 2.90 and t was found to be 4.91 which was significant far beyond 0.01 level. What was the causal factor that was responsible for this great difference between the two means. Was it stimulus conspiquousness or something else ?

The proponents of Hullian theory might jump with their readymade proposition of stimulus generalisation for explaining incidental learning and point out that the symbols were generalised with the nonsense syllables which the subjects were motivated to learn. But the question is : Why was it that the nonsense syllables were generalised with the symbols and not with the colours ? If there is a simple generalisation phenomenon, then it should happen equally with the symbols and the colours because all three types of stimulus items

were temporarily as well as spatially contiguous. Then, why is this generali-
sation taking a significantly specific direction? The obvious answer is the
conspiquousness of the stimulus items. Even if it is assumedthat stimulus
generalisation is responsible for incidental learning, it is now demonstrated that
such generalisation is definitely dependent upon the conspiquousness of the
stimulus field. Thus stimulus conspicuousness is an important factor that
facilitates incidental learning.

Now let us turn to the control group to find out the effect of stimulus
conspicuousness on motivated learning. The mean recall of the control group
for symbols was 7.7 and that for colours was 6.5 and t ratio was 1.74 which
was not statistically significant. Thus it was found that there was a difference
in the expected direction but the difference was not reliably significant. This
non-singnificance of the difference can be explained in terms of the presence of
motivational factors in the learning. It appears that the presence of motive
might have minimised the effect of stimulus conspiquousness on learning. But
such a conculusion can be drawn only in the context of the present experimental
set upin which very simple types of items were used. The use of more comolex
types offiems might have given a different picture. The results of the expriment
conducted by Tulvin and others showed the expected difference more signifi-
cantly. It was demonstrated there that the recall of more vivid words was
always better than the recall of less vivid words.

A profound difference between incidental learning and intentional learning
has also been observed. The mean recall of the control group for symbols (7.7)
was significantly higher than the combined mean recall for symbols of the three
experimental groups (3.36). The t ratio was 7.60 which showed a very high
significance of the difference between the two groups above 0.01 level. Even if
we compare the mean recall of the control group with that of the bright group
(4.9), which showed the best performance among all three exparimental groups,
we find clear cut mean difference of 2.8 and t ratio was 4.15 which was significant
beyond 0.01 level. This only consolidates the superior position of motivational
factors in learning. This is found beyond any doubt that the presence of motive
is an indispensible condition for better learning to take place.

Even when the efficacy of motivational factors in learning can be proved, one question still remains unanswered. Is there a complete absence of motive in incidental learning ? Some people, remaining truly faithfully to Hullian theroy will come forward with an explanation through secondary reinforcement and stimulus generalisation. In a recent study Dey, Mukul (1966) tried to show that suchi ncidental learning is the result of a generalisation of set. Both stimulus generalisation and set generalisation are similer concepts—the former emphasises on the stimulus side whereas the latter emphasises on the organismic side—and both seem to be convincing too for explaining incidental learning. But the present author is rather inclined to believe, according to his tentative expanation given in a previous study (1966), that it is the residual after effects of perceptual stimulation which is responsible for a bit of incidental learning to take place.

An organism is like a finer registering instrument which can register every-thing that goes on in and around itself. But such a registering is not usually haphazard and chaotic, it is controlled and co-ordinated by an intricate need system within the organism. Now if the absence of any such need in the orga-nism, it may register some outside events simply because they impinge upon its sense organs and leave their impression on the nervous system. In other words, the residual after-effects of perceptual stimulation may be responsible for a certain amount of incidental learning and such residual after-effects vary directly with the conspiquousness of the stimulus situations. The more there is stimulus conspi-quousness, the more there is residual after-effects, and hence, more incidental learning. It also appears to depend to a certain extent, upon the intelligence of the learners, the intelligence being indicative of the registering capacity of the individual. The more intelligence there is, the higher is the capacity to register outside events, and hence, to learn incidentally. It appears to the author that if stimulus generalisation or generalisation of set is added to these conditions, such incidental learning should be more enhanced and strengthened.

In conclusion it may be said that incidental learning is not a purely chance phenomenon but is obviously governed, like any natural phenomenon, by certain defjnite antecedent conditions.

References

Borwn, G.G. Factors influencing incdental learning. **J. Exp Psychol.**, 1954, 47, 163-69.

Cohen, D.B. A study of the correlation between the use of incidental stimuli to facilitate learning and selected personality traits. **J. Psychol.**, 1966, 62 (1), 11-14.

Dey, Mukul, K Incidental learning as the result of generalisation of set. netx **Acta Psychol.**, 1965, 24 (5), 423-29.

Imam, A and Ahmad, M. A comparative study of intentional and incidental learning. Mimeographed copy, 1966.

Tulvin, E., et al. Vividness of words and learning to learn in free recall learning. **Canadian J. Psychol.**, 1965, 19, No. 3, 142-61.

OPERANT CONDITIONING WITH AUTISTIC CHILDREN : A CRITICAL REVIEW

Parveen Huq
Department of Psychology
University of Dhaka.

ABSTRACT

The literature on the use of operant conditioning procedures in the treatment of infantile autism is reviewed. Attempts have been made to evaluate the effectiveness of this technique in terms of treatment efficiency and adequacy of methodology. Recommendations for future research have also been suggested.

INTRODUCTION

Operant conditioning with autistic children is not a new practice. Over the course of the last 20 years, numerous studies have appeared which have shown that autistic children who are treated within a learning theory framework (with behavior modification) have shown measurable improvement in speech and language (eg. Hewett, 1965, Lovaas, 1977, Risley and Wolf, 1967), generalized imitation, (Lovaas, Freitas, Nelson and Whelan, 1967. Metz. 1965,), and appropriate play (Koegel, Firstone, Krammer, Dunlop, 1974), as well as reduction of inappropriate behavior (e.g. Cair, Newson and Binkoff, 1976). Autism, a developmental disorder begins before the age of thirty months, indeed can be evident in the first weeks of life. Their behavior seems determined primarily by inner thoughts, they do not make eye contact, socially withdrawn, and fail to communicate.

It is the purpose of this paper to review and critically evaluate the literature on operant training, since it has been employed far more extensively with autistic children than other types. Issues such as durability of treatment, efficiency and costs of administering treatment, adequacy of the methods have been explored, with recommendations regarding high priority areas to be addressed in future studies.

F—11

What is "Operant Conditioning"?

The term "Operant training" refers to a diversity of procedures that have been derived directly from principles of behavior that were established in the basic operant-research laboratory. Both appetitive and aversive paradigms are used. In the former type of procedure reinforcement contingencies are arranged in order to produce new behavior (shaping) or to modify existing behavior via, for example, the method of successive approximations.

Aversion therapy is another class of treatment, one component of which is passive avoidance training. This method incorporates the traditional concept of punishment, where noxious stimulation regularly follows undesired behavior. In most of the studies done with operant conditioning with autistic children, positive reinforcement and/or avoidance techniques are the methods upon which the behavior modifiers have relied most heavily.

Selecting Appropriate Reinforcers

In order to establish and maintain behavior in any organism, the reinforcers used must be effective. Effective reinforcers vary with species and individuals, and the behavior change agent must be capable of determining appropriate reinforcers in order to be successful. Ferster and DeMyer (1961) pointed out "the problem of a reinforcer is especially acute with the autistic child because of his general deficit in positively maintained behavior "(p 313). When attempting to teach complex behavior to autistics under conditions of intermittent reinforcement, durable, potent, reinforcers must be utilized (Ferster and DeMyer, 1961, 1962).

Generally, primary reinforcers (eg. food, candy) are initially used with autistics. This is because they usually show an inability to profit from the use of secondary reinforcers (e.g., verbal approval). However, as Lovaas et. al. (1973) noted, the reliance upon primary reinforcers has several disadvantages, often including the necessity of establishing special environments in which to dispense the reinforcer. Therefore, secondary reinforcers are developed as soon as possible, through inital pairing with primary reinforcers. Ferster and DeMyer recommended the use of conditioned generalized reinforcers (e.g., tokens), since they derive their effect from a number of primary reinforcers and are therefore quite durable.

The large variability from child to child with respect to what is an appropriate reinforcer is reflected by Silver (1970) who found mild deprivation

of foods suffciently capable of motivating a 6½ year old boy, and Wetzel et. al., (1966), who found attention to be a successful reinforcer.

In order to affect more rapid response acquisition for autistic children, researchers have recently began to investigate the functional relationships of reinforcers to other components of the operant conditioning paradigms. Previous research suggested that functional relationships between target behaviors and reinforcers might be especially effective. For example, locating a reward inside a container might be a more efficient way to teach a child to open the container than by handing the child a reward for opening an empty container. Williams J.A. et. al., (1981) assessed the possibility of improving autistic children's learning by changing arbitrary response-reinforcer relationship (while holding target behaviors and reinforcers constant) so that the target behaviors become functional (i.e., a direct part of the response chain required for the child to procure the reinforcer). The results showed that (1) arranging functional response-reinforcer relationships produced immediate improvement in the children's learning and resulted in rapid acquisition of criterion level responding, and (2) high levels of correct responding initially produced by functional response-reinfocer relationships were continued even when previously ineffective arbitrary response-reinforcer conditions were reinstated.

Studies on Operant-Training Techniques : Positive Reinforcement

Although the great majority of experiments reviewed in this paper incorporate some positive-reinforcement contingencies in their procedures, the studies grouped here are distinguished by their sole reliance upon positive reinforcement. Ferster and DeMyer (1961a) showed that the response patterns emitted by two autistic children who were exposed to fixed-ratio (FR) and variable-interval (VI) schedules under nonverbal reinforcement approximated the characteristic functions obtained with animals and normal humans under such schedules. In addition, a conditioned or "generalized" reinforcer (coin) was established. The children failed to learn on a multiple schedule (FR-VI) and had great difficulty in a relatively simple transfer of training task, where learned discriminative control could not be maintained upon introduction of a new, slightly different apparatus. Nevertheless, both subjects exhibited more experimentally controlled behavior and less tantrum activity with increasing exposure to the automatic environment.

In another study conducted in 1962, they showed the practicality of controlling key-press behavior in two autistic children through nonverbal intermittent reinforcement schedules. The children, who eventually performed discriminative acts quite well for intermittent food reward, nevertheless exhibited very restricted behavioral repertoires, in that their operant activity was largely uninfluenced by a wide variety of available stimuli which are reinforcers for normal children. Both these studies show that conventional learning technology is adequate for the experimental analysis of this refractory disorder.

Metz (1965) obtained "generalized imitation" in two autistic children using conditioned verbal and nonverval reinforcers ("good" and tokens) in a gradual shaping procedure which began with the experimenter passively "putting the subject through" the action he was to imitate later and rewarding him with food and verbal praise ("good") after each passive demonstration. The experimenter's guidance was progressively withdrawn ("fading" technique) until eventually only an occasional verbal reinforcement was necessary to maintain imitative performances. Results indicated that autistic children are capable of learning imitation, that such learning can generalize to similar but new situations, and that the generalized imitative response persisted over time. But it should be noted that proper experimental controls were not present in the study, and that increased generalized imitative performace was the specific result of the operant training procedures.

In one study Lovaas, Freitas, Nelson and Whalen (1967) attempted to establish non-verbal imitative behavior in "autistic children ranging in age from 4 to 13 years, and the extension of such behavior for therapeutic usefulness into the child's day to day functioning. The program consisted of two parts, the initial part involving the training of imitative behavior of 60 tasks, ranging from the easy to complex. Training in imitation was analogous to a discrimination training procedure wherein the children were reinforced (usually with bites of food) for increasingly close approximations to the adult's behavior. Upon completion of the initial training of the 60 tasks, the training was extended into socially and intellectually useful behaviors such as personal hygiene, preschool games, drawing and printing, elementary interpersonal skills, etc.

The study indicates that by the use of imitation, they have been able to teach the children a number of behavior patterns which seem virtually impossible

to train otherwise. In another study by Lovaas, Berberich, Perloff and Schaeffer (1966) two autistic children were taught imitative speech within an operant conditioning framework. They found that reward delivered contingent upon imitation was necessary for development of imitation. Furthermore, the newly established imitation was shown to have acquired rewarding properties for the children. Such positive results in the improvement of the child's behavior (including the development of speech) were obtained by Blake and Moss (1967) Hewett (1965) showed clearly that speech taught by operant techniques could be transferred to new situations.

Cooperative responses were learned in a controlled environment arranged by Hintgen, Sander and DeMyer (1965). The experimental room contained a two-key response panel, coin vendor and food vendor. Reinforcement was contingent upon cooperative key responses from the two children ; each had to allow the other access to the coin vendor through increasingly complex key responses.

Further evidence of the power of operant-training methods is provided by the work of Hewett (1964 ; 1965). In the course of one year of daily individual training, a 13 year old autistic boy who had not developed useful speech was taught a 55 word sight vocabulary. This was accomplished by using gumdrop reinforcers for correct matching of visually presented words with corresponding pictures. Eventually picture cues became unnecessary, and the child could select any word card on the verbal command of the teacher.

Positive Reinforcement and Passive Avoidance Learning

In one of the studies Lovaas et. al., (1965) increased the "appropriate music behavior" and simultaneously decreased the seriously self-destructive behavior of a nine year old autistic girl. In acquisition periods, music was played and social reinforcement (smile and "good") were delivered only following appropriate behaviors, such as clapping in rhythm. Significantly, control or extinction periods were also run, during which music was again played, but no social rewards were forthcoming. Appropriate changes in the subject's behavior from aquisition to extinction periods revealed that the behaviors in question had come under experimental control. In another study, using a bar-press response, confirmed this finding, that is, frequency

of self-destructive behavior is a function of the presentation and withdrawal of reinforcement for other behaviors in the same situation.

Wolf, Risley, and Mees (1964) described their rather dramatic therapeutic intervention into a case which had proven intractible to conventional therapies. They used shaping procedures with a food deprived hospitalized autistic boy of $3\frac{1}{2}$ years who was characterized by severe self-destructive behavior and refusal to wear eyeglasses (which were necessary to save his sight) and to sleep at night. Using bits of food as reinforcement and isolation from all social contacts as punishment (analogous to time out from positive reinforcement), these tharapists were highly sucessful in decreasing the child's self-destructive behavior and increasing his eyeglass wearing to an acceptable level. This supports the findings of other experiments by wolf and Risley (1964) and Davison (1964).

Positive Reinforcement and Active Avoidance Learning

Hewett (1965) reported that he was able to teach a mute autistic child 32 words over a 6-month period using a paradigm that combined both reinforcement and active-avoidance procedures. The 4-year old subject, sitting in a special teaching booth, was exposed to a variety of reinforcing stimuli when he responded correctly, but was subjected to isolation in the darkened booth if he failed to respond correctly on cue. In another study by Lovaas et. al., (1965), autistic twins were given escape-avoidance training in a room with an electrified grid floor. The children were first physically guided, then more and more required to imitate the approach response when they heard the experimenter's command, "Come here". At first they responded in order to escape painful shock, but they soon learned that a short-latency response (less than 5 seconds) would enable them to avoid shock. In addition, the children were shocked whenever they began to emit tantrum behavior. These procedures resulted in a long-lasting response tendency to the "come here" command (9-10 months passed before extinction began to occur) and good suppression of the tantrums. Pairing the word "no" with shock gave it the status of a conditioned suppressor, demonstrated by its reduction of the frequency of a child's bar press for positive reinforcement.

DISCUSSION

The results of these studies indicate that behavior-modification techniques may be extremely useful tools in the education and rehabilitation of autistic children. Though none of the investigators whose work was reviewed here would claim that they have cured their subjects, many can justifiably state that they have equipped their subjects with several of the basic skills and habits necessary for the most rudimentary of adjustments to their social environment. Furthermore, behavior "therapists", guided by social learning models which are more parsimonious than traditional psychodynamic theories, have been able to effectively control, and in several cases eliminate, much of the undesirable and maladaptive behavior of these children.

The studies reviewed here with behavior therapy also have limitations. Most of these are case studies which describe modification of individual subjects or of small groups of children displaying similar problem behaviors. Some writers have concluded that demonstrations of therapeutic efficacy with single cases represent no scientifically acceptable evidence at all.

An examination of what appear to be the potential advantages of the operant-learning technique described here is in order. One such advantage may be the speed with which these procedures work. Davison (1964), for example, seeing the subject for only a short time each day, achieved significant control over the child in 4 weeks. Exemplified also in Davison's (1964, 1965) work, as well as that of others (eg. DeMyer and Ferster, 1962 ; Risley and Wolf, 1964), is the fact that such programs can apparently be executed by rapidly trained non-professional workers and continued in the home by parents. If this is generally the case, it might eventually be feasible for a small core of professional therapist-trainers to supervise simulaneously many therapeutic workers in behaviour modification programs with large number of clients.

An instructive outcome of this behavior modification research has been the demonstration that certain types of behavior previously conceptualized by psychodynamic theories of psychopathology as complex reactions to internal states, are more realistically and profitably conceived as socially learned and maintained acts (Leff, 1968). An example of the rapidly achieved benefits of such reanalysis was the virtual elimination of self-destructive tantrums without recourse to harsh, suppressive punishments. Such tantrum behavior was found

to be maintained by adult attentiveness to it and was eliminated by withdrawing attention or merely by occupying the child with incompatible behavior (Davison, 1964).

The foregoing discussion of the potential assets of operant-learning therapeutic models is based on evidence from a variety of essentially clinical studies. It is obvious that further demonstration of the adequacy and efficiency of behavior modification with autistic children is necessary. Future investigation must employ better controlled procedures and long-term follow-up with longer subject populations in order to relate general as well as specific enduring results to the techniques used. Negative side effects of treatment procedures must be recognized and evaluated by competent observers. Adequate baseline measures of the occurrence of the problem behavior (and, when applicable, frequency of prosocial responses) should be collected over a period of time long enough to provide reliable rate of information. Obviously, these data should be collected in a rigorous, planned manner and not retrospectively recounted by the child's parents or teacher, as is frequently done in behavior therapy case studies. The therapist experimenter should also provide a specific and detailed description of the treatment procedures, which should include sufficient data to permit replication by other investigators. Included should be information on the total number of treatment sessions, the length of each session, description of their spacing over time, and the total time span of the therapeutic intervention.

Another major problem concerns the generality of therapeutic effects, although some of the studies reported "generalized'" long lasting results, most of the behavior changes accomplished have been relatively limited ones. However, generalization is possible ; it has to be programmed into the treatment. This involves teaching the new response under a number of stimulus situations and altering the child's everyday environment so as to offer the appropriate contingencies (Schell aod Adams, 1968)

Behavior modifiers should not concentrate their full attention on one target behavior at a time. Therapeutic efforts should be concerned with a number of problematic areas at once, such as the studies done by Wolf et. al., (1964) were concerned with tantrums, bedtime problems, wearing of glasses, verbal skills, and increased reading and writing skills.

CONCLUSION

Even though there are some limitations of these studies, their results appear to provide strong support for the use of operant conditioning techniques for the treatment of autistic children. First, the experimental evidence available suggests that operant conditioning procedures are generally effective both in strengthening the desired responses and weakening the undesired behaviors. Second, conditioning procedures can be implemented in virtually any setting and with a multiplicity of behaviors. Third, although only a few studies reported follow-up data, the indications are that changes brought about in the child's behavioral repertoire can be maintained after the interruption of the treatment. Fourth, the implementation of operant techniques can be carried out reliably by parents and teachers after only a minimal amount of training.

In conclusion, one can speculate from the preceding discussion that operant conditioning is an effective method and that more new techniques of therapeutic behavior modification may be developed from the basic principles of operant learning technology.

Referances

Blake, P. and Moss, T. The development of socialization skills in an electively mute child. **Behavior Research Therapy,** 1967, 5, 349-356.

Carr, F. G. Newson, C. D, and Binkhoff, J. A. Stimulus control of selfdestructive behavior in a psychotic child. **Journal of Abnormal Child Psychology,** 1976, 4, 139-153.

Davison, G. C. A social learning therapy programme with an autistic child **Behavior Research and Therapy,** 1965, 2, 149-159.

Davison, G. C. The training of nndergraduates as social reinforcers for autistic children, In L. P. Ullmann and L. Krasner (Eds), **Case Studies in Behavior Modification,** New York, Holt, Rinehart and Winston, 1965.

Ferster, C. B. and DeMyer, M. K. The development of performances in autistic children in an automatically controlled environment. **Journal of Chronic Diseases,** 1961, 13, 312-345,

Ferster, C. B. and DeMyer, M. K. A method for the experimental analysis of the behavior of autistic children. **American Journal of Orthopsychiatry**, 1962, 32, 89-98.

Hewett, F. M. Teaching reading to autistic children through operant conditioning. **The Reading Teacher.** 1964, 17, 613-618.

Hewett, F. M. Teaching speech to autistic children through operant conditioning. **American Journal of Orthopsychiatry.** 1965, 35, 927-936.

Hintgen, J. N., Sanders, B. J. and DeMyer, M. K. Shaping cooperative responses in early childhood schizophrenics. In Ullmann, L. P. and Krasner, L (ed), **Case Studies in Behavior Modification**, New York, Holt, 1965, 130-138.

Koegel, R. L., Firestone, P. B., Krammer, K. W. and Dunlop, G. Increasing spontaneous play by suppressing self-stimulation in autistic children. **Journal of Applied Behavior Analysis.** 1974, 7, 521-528.

Leff, R. Behavior modification and the psychoses of childhood. **Psychological Bulletin.** 1968, 99, 396-409.

Lovaas, O. I. **The Autistic Child : Language Development Through Behavior Modification** New York ; Irvington, 1977.

Lovaas, O. I., Berberich, J. P., Perloff, B. F. and Schaeffer, B. Acquisition of Imitative Speech by Schizophrenic Children. **Science**, 1966, 151, 705-707.

Lovaas, O. I., Freitas, L., Nelson, K., and Whelan, C. The establishment of imitation and its use for the development of complex behavior in schizophrenic children. **Behavior Research and Therapy**, 1967, 5, 171-181.

Lovaas, O. I. Keegel, R., Simmons, J. Q., and Long, J. S. Some generalization and follow-up measures on autistic children in behavior therapy. **Journal of Applied Behavior Analysis**, 1973, 6, 131-166.

Lovaas, O. I., Schaeffer, B., Benson, R., and Simmons, J. Q. Experimental studies in childhood schizophrenia : Building social behavior in autistic children by use of electric shock. **Journal of Experimental Research in Personality**, 1965, 1, 99-109.

Metz, J. R. Conditioning generalized imitation in autistic children. **Journal of Experimental Child Psychology**, 1965, 2, 389-399.

Schll, R. E. and Adams, W. P. Training parents of a young child with Profound behavior deficits to be teacher-therapists. **Journal of Special Education**, 1968 **2**, 439-454.

Silver, E. B. Operant conditioning of speech sounds in an autistic child. **South African Journal of Psychology**. 1970, **I**, 3-12.

Wetzel, R. J., Baker, J., Roney, M., and Martin, M. Outpatient treatment of autistic behavior. **Behavior Research and Therapy**. 1966, **4**, 169-177.

William, J. A. Koegel, R. L., and Egel, A. L. Response-Reinforcer Relationship and Improved Learning in Autistic Children. **Journal of Applied Behavior Analysis**, 1981, **14** 53-60.

Wolf, M., Risley, T., and Mees, H. Application of operant conditioning procedures to toe behavior problems of an autistic child. **Behavior Research and Therapy**. 1964, 1, 305-312.

ECOLOGY OF ADOLESCENCE

Muhammad Nazmul Huq
Institute of Education and Research
University of Dhaka

ABSTRACT

The paper was developed with an intention to provide a new dimension to the understanding of adolescent behaviour. Besides the controversy of adolescent's normal life it is assumed that three types of environment—physical, social and psychological act upon the individual as an integrated manner. Interrelated the resultant influence of these three dimensions of environment elicits the actual pattern of adolescent behaviour. The paper describes schematically the influencing procedure of each environment on an individual and produces a geometric model of behaviour pattern due to such three dimensional interaction.

The anthropological investigation of Margaret Mead (1928) first revealed that adolescents are not the victim of certain unusual phenomena, storm and stress, rather follows a normal and orderly developmont of usual maturing and activities. Human growth pattern follows the same principle everywhere, but not the psychological development. It is pointed out that the same process of biological maturing that places a child in jeopardy in one culture may offcer no special problems in another (Jones, 1968). Many factors emerge at puberty to bedevil and perplex the child during his tansition to adult life. Besides, growth discrepancies also occur in the proportionate development of the legs, arms, and trunks and in the deposition of fat. Children's reactions to these apprarent anomalies is a psychological matter and not always their sources are inherent into the biological growth pattern (Jones, 1968). Therefore it may seem that the personality structure, family situations, socioeconomic background as well as the climatic conditions all exert their influence on the adolescent behaviour (Arrieta 1932 ; Mills, 1939). This may be supported by the observation that in a war-striken and flood devastated area the adolescence tend to be delayed

(Chowdhury, 1977 ; Haq, 1984). Similarly, Mills (1939) has also demonstrated the tendency for American children tn the same social group to mature earlier than their predecessors fifty or hundred years ago due to the environmental factors.

From the psychological point of view adolescence is evaluated from different angles and with different attitudes. Most of the eminent psychologists, right from the beginning of this century, believe that adolescence is a time of storm and stress (Hall, 1904 ; A. Freud, 1958 ; Blos, 1962 ; Deutsche, 1967). But by the attestation of certain developmental studies on normal adolescents it is evident that turmoil among them is relatively uncommon (Douvan and Adelson, 1966 ; Offer and Offer, 1975 ; Rutter et. al., 1976). This ambiguous finding clearly indicates that adolescence need to be studied with greater accuracy and newer approach. Therefore an attempt has been made in this paper to identify the causes of behaviour and their effect on adolescence. The paper also envisages to represent a schematic diagram of the behavioural correlates and their magnitudes in different dimensions.

Adolescent behaviour is contingent upon the complex interaction between individual's varieties of internal and external factors. It is not merely a factor of age, culture or learning only that determines the actual behaviour of human beings. Rather a number of different factors of differing magnitude may be held responsible for effective transformation from childhood to adulthood. The investigation of the influencing factors with different magnitudes and their interrelationships need to be studied for better understanding of individual behaviour during their teens. The method of investigation of such relationship is to be developed to delve into the adolescence ecologically and to show the interacting process of multidimensional forces to predict and analyse adolescent behaviour.

It is assumed that three dimensions or types of environment exert their influence to shape the adolescent behaviour ; they are physical, social and psychological environments. Each type of these environments is created out of various similar and co-existential factors or environmental forces in a particular space and time. The physical environment, the first dimension, of an individual represents the sum total of his physiological makeup (height, weight, endocrine system, nutrition, etc.), habitat, climatic conditions, etc. The second dimension of the determinants of behaviour is constituted by his family, culture, education,

economy and religion. The third one, psychological environment, the most abstract mental condition, is the representative of his personality, intelligence, feelings, attitudes, motivations, etc.

Integrated function of these three types of environment can best be understood by the help of a three dimensional schematic diagram (Fig. 1). In this AOBC represents a three dimensional graph consisted of three planes AOB, AOC and BOC.
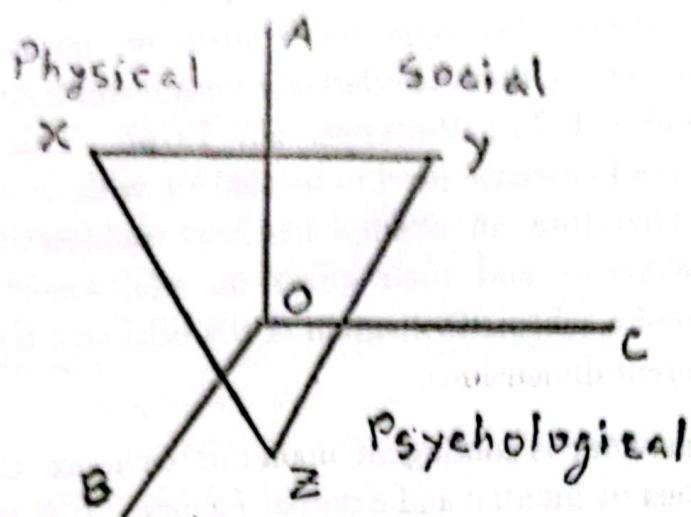

Fig. 1. Three environmental dimensions of behaviour.

The AOB plane presents the physical environment ; AOC, the social environment and BOC represents the psychological environment. In each plane there is a point or focus of different coexistential conditions or constituting environments that exert the resultant influence upon the individual. In the same figure x y z represent the three focuses through which all the different environmental conditions act upon the individual adolescent. The triangle, x y z, produced by connecting all the three foci represent the behavioural pattern of the individual. The shape and size of the triangle as well its leaning towards a particular plane explains the greater influence of that environment upon the individual.

Determination of a focus in an environment is a crucial task. This can be taken into consideration when it is assumed that all the constituting factors in a single environment exert their influence on an individual in different magnitudes and produce a resultant effect which works through a focal point within that environment. The focus is a hypothetical point in an environment

and when an individual comes in contact with that environment he is replaced by the focus or in other words, all the constituent forces work upon him (Fig. 2a).
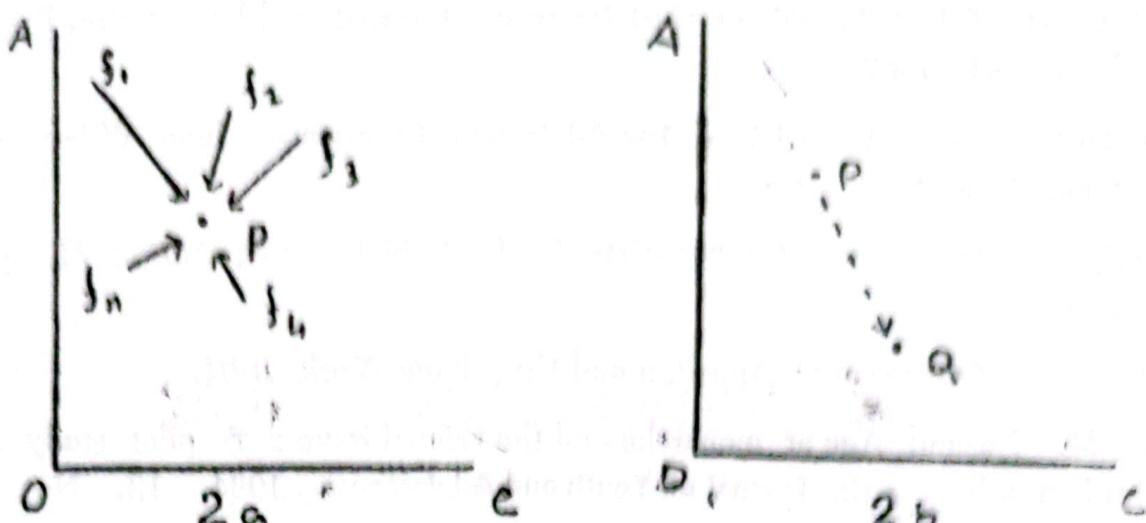

Fig. 2. Determination of environmental focus and its movement.

The position of the focus P in an environment is not a constant one rather with the change in magnitude of different forces (f_1, f_2, etc.) shifts its position towards the resultant direction Q (Fig. 2b). In all the diagrams no strict scaling is adopted but nearness to the axis or neighbouring environment represent the influence of that environment on the focus.

Accurate explanation regarding the uniqueness of an individual has been a great problem to the psychologists. It was well known to them that both the heredity and environment have their own influences upon the individual, but it was not clear to what extent these influences play their role independently or interrelatedly. Besides, there was a dispute of one sided explanation regarding the influencial theory of heredity or énvironment. However, ecological study of adolescence may provide a compromising explanation as well as a mathematical reasoning of individual behaviour pattern.

Reference

Arrieta, U. D. Menstrual biology of the Peruvian woman. La Cronica Medica, 1932 No. 49. pp. 277-87.

Blos, P. Adolescence : A Psychoanalytic Interpretation. The Free Press, New York. 1962

Chowdhury, Alauddin et al. Malnutrition, menarche, and marriage in rural Bangladesh. Social Biology. 1977, 24, No. 4, pp. 316-325.

Deutsch, H. Selected problems of adolescence. International Universities Press, New York. 1967.

Douvan E. and J. A. Adelson The Adolescent Experience. John Wiley and Sons, New York : 1966.

Freud, A. Adolescence. Psychoanalytic Study of Child. 1958, No. XVI. pp. 255-78.

Hall, G. S. Adolescence : Appelton and Co., New York 1904.

Haq. M. Nazmul Age at menarche and the related issue : A pilot study on urban school girls. Journal of Youth and Adolescence. 1984, 13, No. 6. pp. 559-67.

Jones. H. E. The growth process. In Alvin E. Winder and David L. Angus (Eds.) dolescence Contemporary Studies. Van Nostrand Reinhold Co., New York : 1968, pp. 4-12.

Mead, Margaret Coming of Age in Samoa. William Morrow, New York : 1928,
Mills, C. A. Medical Climatology. Thomas, New York. (1939)

Offer, D. and J. B. Offer From Teenage to Young Manhood : A Psychological Study. Basic Books, New York : 1975,

Rutter M. et al., Adolescent turmoil : facts or fiction. J. Child Psychology and Psychiatry. 1976, 17, 35-56.

VALUE SYSTEM AS A DIFFERENTIATING FACTOR AMONG POLITICAL AND APOLITICAL STUDENTS

Zeauddin, Shawkat Ara
and
Mozammel Huq
Department of Psychology
Rajshahi University

ABSTRACT

The present study tried to differentiate political students from apolitical students using Rokeach's value Inventory on both Terminal and 'Instrumental' values. A sample of 320 male and female students from Rajshahi University served as subjects. Subjects (Ss) were divided into political and apolitical groups according to their ideological stance revealed through a questionnaire. It was hypothesised that political Ss would differ significantly from apolitical Ss on some 'Terminal' and 'Instrumental' values. The results were found in the expected direction.

INTRODUCTION

In recent years there has been increasing interest in the study of value system and political attitudes (Ara, 1984) in Bangladesh and India to investigate the structural properties of values underlying political attitudes. Empirical support was found in the works of Rokeach (1971) and Feather (1980) dealing with political ideology as a correlate of value system. A large number of studies have shown that value is an essential causative factor in the development of ideology and political behaviour. Smith (1949) concluded in his study that a person would percieve and judge an attitude in terms of his personal values to the extent that value was important to him occupying a central position in his value hierarchy. There are theoretical grounds for anticipating that certain values will be related predictably to a given attitude than other values (Rokeach, 1973). Empirical findings (Feather, 1975 ; 1980) support such expectation that values are significantly related to socio-political attitudes. In the context of this theoretical orientation and empirical findings it has been expected

F—13

that values would be significantly associated with the socio-political attitudes of the students in Bangladesh.

These theoretical explanations and empirical findings are, however, contingent upon cultural variation and political socialization. Viewed from this perspective, Bangladesh seems to represent a cultural society where people are exposed to a traditionalism dictated by religious dogmas. Paralell to this traditionalism are gradually developing trends towards mordernism. In this transitional period of social change and economic development, people in Bangladesh are expected to represent marginality in their value preferences. Obviously then political socialization would be different from apolitical socialization. It is therefore argued that politically oriented students would differ significantly from apolitical students on some 'terminal' and 'Instrumental' values.

METHOD

Sample

Three hundred and twenty male and female students from different Faculties of Rajshahi University, were used as subjects. The Ss were divided into political (N=160) and apolitical (N=160). through interview and questionnaire.

Measures of Value System

In order to assess different of value orientations of the Ss, a Bengali varsion of Rokeach's value Inventory (1967, 1973) Form D was used. Rokeach used this inventory in order to assess human values. The inventory contained 20 'Terminal' and 20 'Instrumental' values. The reliability co-efficient of the Bengali version with the original scale was .72. The split-half reliability of the inventory of Bengali version was ·86.

Procedure

Prior to selection the students were interviewed individually by the investigator and were requested for their co-operation. Each student was interviewed separately and some information were collected about his/her preference for political objects, situations, or stands. In this way the investigator selected political and apolitical Ss on the basis of their verbal information and self-assertion. The validity of their stance in political orientation was checked by using a simple questionnare. This questionnaire contained statements and

questions regarding subjects' political stance. Affirmative answer, to the political questions represented political and negative answers represented apolitical. Thus on the basis of this questionnaire 320 Ss were divided into political and apolitical. Then the Bengali version of Rokeach's value inventory was administered on these groups. The Ss were asked to evaluate each value from most important to least important, the former being '9' and the latter '1'.

RESULTS AND DISCUSSION

The results of the present study are presented in Table 1 and 2. The Table I shows that in only two out of 20 Terminal values there was significant mean differences between political and apolitical Ss. These are 'a sense of accomplishment' and 'self respect'.

Table I. Mean differences between political and apolitical Ss on Terminal values.

Item No.	Dimensions	Political		Apolitical		t	Level of Significance
		M	SD	M	SD		
1.	A comfortable life	7.57	2.00	7.36	2.25	.91	
2.	An exciting life	5.16	2.73	4.71	3.02	1.40	
3.	A sense of accomplishment	6.33	2.43	5.66	2.35	2.54	$p < .05$
4.	A world of peace	7.91	1.73	7.77	1.95	.70	
5.	A world of beauty	6.97	1.98	6.75	2.32	.91	
6.	Equality	7.80	1.87	7.54	1.88	1.25	
7.	Family security	6.95	2.16	6.50	2.57	1.73	
8.	Freedom	7.67	1.88	7.64	2.16	.13	
9.	Happiness	6.77	2.27	6.63	2.37	.53	
10.	Inner harmony	6.71	2.22	6.61	2.40	.40	
11.	Mature love	6.78	2.47	6.99	2.27	.80	
12.	National security	6.86	2.49	6.79	2.33	.20	
13.	Pleasure	5.56	2.60	5.47	2.52	.32	
14.	Salvation	6.75	2.41	6.82	2.25	.26	
15.	Self-respect	7.73	1.69	6.99	1.96	3.70	$p < .01$
16.	Social recognition	7.01	2.14	6.92	2.28	.37	
17.	True-friendship	7.46	2.00	7.24	1.93	1.10	
18.	Wisdom	7.02	2.08	7.15	1.99	.59	
19.	Equity	6.61	2.32	6.95	3.46	1.30	
20.	Power	5.60	2.44	5.47	2.34	.50	

This indicates that the students taking part in campus politics have a 'sense of accomplishment' more than those who are apolitical. A significant mean difference was also found out in 'self respect, between political and apolitical students (t=3.70, p∠.01). Again, it was the political groups who showed a stronger value of self respect.

Table 2. Mean differences between political and apolitical Ss on Instrumental values.

Item No.	Dimensions	Political		Apolitical		t	Level of significance
		M	SD	M	SD		
1.	Social justice	7.78	1.78	7.33	2.36	1.95	
2.	Ambition	6.99	2.12	7.33	1.97	1.54	
3.	Broad minded	7.61	1.63	7.35	1.95	1.30	
4.	Capable	6.95	2.07	6.81	2.19	.60	
5.	Cheerful	7.05	1.96	6 71	2.01	1.54	
6.	Clean	7.39	1.95	7.20	1.93	.90	
7.	Courageous	8.04	1.53	7.58	1.98	2.42	p∠·05
8.	Forgiving	7.11	2.61	7.12	1.77	.04	
9.	Helpful	7.02	2.02	7.15	2.08	.59	
10.	Honest	6.79	2.35	7.18	2.15	1.56	
11.	Imaginative	4.87	2.56	5.09	2.50	.78	
12.	Independent	7.53	1.83	7.94	1.43	2.27	p∠·05
13.	Intellectual	7.29	1.83	7.26	2.00	.14	
14.	Logical	7.11	2.00	6.83	2.17	1.47	
15.	Loving	7.05	1.90	7.16	1.94	.50	
16.	Obedient	7.02	2.61	7.08	1.88	.24	
17.	Polite	7.25	1.98	7.25	1.83	0	
18.	Responsible	7.62	1.86	7.63	1.57	.05	
19.	Self-controlled	7.23	2.15	7.35	1.99	.52	
20.	Self-determination	7.73	1.67	7.36	1.76	2.05	p∠·05

In case of 'instrumental' values significant difference between the two groups was found tn the three out of twenty. These are courageous, independent and self determination. In all of these values except 'independent' the political group showed higher scores than the apolitical ones, These differences can very well explain the differences in the activities of the political and

a-political students. They are also indicative of their attitudes and personality pattern.

A recent Study by Ara (1981) revealed that people from India and Bangladesh exhibited certain commonality as well as diversity in their value preferences. The present findings added to this that values do differ according to their political inclination as well. In other words, the present findings indicated some significance of value measure for differentiating political students from apolitical ones. Although the study may have limitations, it is expected that it will generate some more valuable research in future.

References

Ara, S., Value systems and political attitudes : study in Bangladesh. The Rajshahi University Studies, 1984, 12, B, 29-40.

Cronbach, L., and Meehl, P., Construct validity in Psychological test. Psychological Bulletin. 1955, 52, 281—302.

Feather, N. T., Values in Education and Society. The free-press, New York, 1975.

Feather, N. T., Organization and discrepancy in cognitive steuctures, Psychological Review. 1971, 78, 355—379 (a).

Feather, N. T., Similarity of value systems with in the same nation. Evidence from Australia and Papua New Guinea, Australia, Journal of Psychology. 1980, 32(i), 17—30.

Penner, L. A., Inter personal attraction toward a black pereson as a function of value importance, porsonality : An International Journal. 1971, 2; 175—187.

Rokeach, M., The measurement of values and value systems. In G. Abearian (ed) Social psychology and Political Behaviour, Columbus Ohio Merrill, 1971.

Rokeach, M., The Nature of Human Values, Free press, New York, 1973.

Rokeach, M., Beliefs, attitudes, and vlaues, Sanfrancisco, Jerssey-Bass, 1968(a).

Smith, M. B., Personal values as determinants of a political attitude. Journal of Psychology. 1949, 28, 477—486.

WOMEN'S PERCEIVED SELF STATUS AS A FUNCTION OF THEIR EMPLOYMENT AND SOCIO-ECONOMIC CLASS

Eliza Ahmed

and

Hamida Akhtar Begum

Deparment of psychology

University of Dhaka

ABSTRACT

The purpose of this study was to investigate the relationtship of perceived status of women with their employment and socio-econmic class. The sample consisted of 120 females of which 60 were employed and 60 were unemployed. In each group 20 came from lower class, 20 from middle class and 20 from upper class. The methodology involved a questionnaire and interview with the respondents. Results indicated that women's perception of their own status varied significantly with their employment and socio-economic condition. The perceived status was higher for women who were employed and those who came from middle class compared to other groups.

INTRODUCTION

Women's status in Bangladesh is lower compared to that of men in almost every sphere of social life. Among many indicators the lower rate of literacy and employment, violence agaitst women and the prevailing poor health and nutrifional status of women bear testimony to this statement. Traditionally, the role of women has been domestic in nature. They are primarily relegated to the role of a docile daughter, a compliant wife and a dependent mother working inside the household from dawn to dusk and being called 'housewives'.

In recent years, however, there has been a noticeable change in women's role. Although most of women are still 'housewives' some are working outside the household and earning their own livelihood. They are engaged not only in traditional jobs of teachers, doctors, telephone operators, secretaries etc, but also as bankers, engineers, architects and the like in large number. This change in the situation of women is likely to have an impact on the status of

women. The present study is an attempt to assess such an effect on women's own perception of their status in society.

Before going farther, let us see what exactly is meant by status. In the words of Mukherjee (1975), "A woman's status is reflected in the authority and power she holds within the family, and prestige she commands from other members of the family and the community." According to Choudhury and Ahmed (1980) "Status denotes not only the conjunction of rights and duties as reflected in various roles of women, but also the degree of subordination at home, her education, the number of sons she has, ... her role in decision making in family affairs and her self percived status in home as well as in the community." In this study it is the latter i.e. the perceived status of women for themselves has been measured. Since women are non-a-days coming out of the veil and getting engaged in different jobs, a change or development in the status of women can be expected. So far as women's own perception is concerned, employed women are likely to have a favourable perception of their own status compared to the unemployed ones. Besides that, the socio-economic status of women is likely to have an effect in this regard. Since employment seems to be valued more by the middle class women, so far as status is concerned, it was expected that they would show a more favourable attitude to their own status than those of other socio-econonic groups. Thus it was hypotheesizd that

(1) Perceived self-status of unemployed women is higher than that of unemployed women, and

(2) Perceived self-status of middle class employed women is higher than that of lower and upper-class-employed women.

METHOD

Sample

The sample of this study consisted of 60 employed women (20 from lower socio-economic class, 20 from middle and 20 from upper class) and 60 unemployed women (20 from lower socio-economic class, 20 from middle class and 20 from upper class) chosen randomly from Dhaka city. This socio-economic clan has been defined in this study in terms of occupation and monthly income of these women and their husband.

Table 1 shows the distribution of upper, middle and lower class employed women according to their occupation and monthly income.

Table-1. Distribution of Lower middle and upper class employed women according to their occupation and monthly income

S. E. Class	Lower	Middle	Upper
Monthly Income			
Occupation	below 2000	2001 to 6000	6000 and above
Teacher		9	9
Dress designer/ Social worker		2	4
Secretary		3	4
Govt./Private service		6	3
Garments worker	10		
Aya/Nurse	4		
Clerk	6		
Total	20	20	20

In order to be included in the sample the respondents had to complete at least 5 years of married life and employed women required minimum 5 years of experience in the job. Age of the subjects ranged from 30 to 45 years. Educational qualification of both the groups ranged from class VIII to post graduation level.

The key variables are defined in this study as follows :

Employed women : "Employed women" are defined as those who are involved in "income earning activities' (such as, teachers of schools and colleges, Govt. officials, Garment Industry employees, clerks and others) or recognized as "earning member" of the family.

Unemployed women : 'unemployed women' are defined as those who stay at home, primarily perform household tasks and who are not involved in 'income earning activities'.

Lower socio-economic-class : Women who had total family income less than Tk. 2000/- a month.

Middle socio-economic-class : Women who had total family income Tk. 2000/- to 6000/- a month.

Upper socio-economic-class : Women who had total family income re than 6000/- a month.

Instrument : A set of structured questionnaire was prepared to measure the perceived self status of women. This questionnaire consisted of 14 items which measured four dimensions of status :

(1) decision making power of wife,
(2) income-expenditure power of wife,
(3) behavior of husband and other family members,
(4) 'purdah' of wife.

Design of the study :

The study consisted of a 3 × 2 factorial design representing three levels of socio-economic class (lower, middle, upper) and two levels of employment (i.e, employed and unemployed women).

Procedure : The respondents were approached individually by the investigators and requested to participate in the study. Each subject was given the questionnaire along with a bio-data form which enquired about age, income educational level and such other relevant information.

As most of the respondents were busy with their office and or household works, they were allowed to complete the questionnaire at their leisure time and the authors collected them afterwards.

RESULTS

The present study was designed to observe whether percieved self status of women varies as a function of their employment and socio-economic class.

In order to examine the effects of employment and socio-economic class on percieved self status, the perceived self status scores of the respondents were analysed by a 3 (lower, middle and upper class) x 2 (employed and unemployed) analysis of variance. The summary of the results of this analysis is presented in Table 2.

Table 2 shows that the main effect of employment was highly significant ($F = 27.51$, $df = 1, 114$, $p < 01$). That means. status scores of subjects varied significantly as a function of their employment status. The employed women perceived their status higher than the unemployed women. Table 3 shows the Means and S.Ds' of the subjects' perceived status scores. These results confirmed the first hypothesis of this study which states that perceived self status of employed women is higher than that of unemployed women,

F—14

Table 2   Summary of The Analysis of Variance of Perceived Self Status Scores as a function of Employment and Socio-Seonomic Class.

SV	df	SS	MS	F
Employment	1	1086·01	1086·01	27·51*
Socio-Econonmic Class	2	4063·55	2031·78	51·48*
Employment x Socio-Economic class	2	878·60	439·30	11·13*
Error	114	4499·25	39·47	

* p less than ·01

Table 3. Mean and S.D. of Perceived Self Status Scores according to Employment and Socio-Economic Class.

	Socio-Economic Class		
	upper	middle	lower
Employed women	$N=20$ $X=25·20$ $S.D=5·249$	$N=20$ $\bar{X}=63·75$ $S·D=5·214$	$N=20$ $\bar{X}=39·25$ $S.D.=5·539$
Unemployed women	$N=20$ $\bar{X}=62·00$ $S.D.=7.810$	$N=20$ $\bar{X}=24·40$ $S.D.=6·232$	$N=20$ $\bar{X}=23·75$ $S.D.=6·299$

The second hypothesis of this study was that perceived self status of middle class employed women is higher than that of the lower and upper class employed women. It is evident from Table 2 that the main effect of socio-economic class was highly significant ($F=51.43$, $df=2$, 114, $p<.01$). That means perceived self status scores of lower, middle and upper socio-economic classes differed significantly. The average scores of employed women ($\bar{X}=63.75$) was higher than those of the upper and lower S.E. class employed women ($\bar{X}=25.2$, $\bar{X}=39,25$). This confired the hypothesis as stated above.

The interaction between employment and socio-economic class was also highly significant ($F=11.13$, $df=2$, 114, $P<.01$). This indicates that the

difference in the percieved self status secores of different socio economic classes varied as a function of their employment status. For employed women the perceived self status was highest for the middle class and lowest for the upper class. But for the unemployed group, it was highest for the upper and lowest for the lower class (Table 3).

Table 4 shows a chi-square value of 20.43 between socio-economic class and different dimenions which was significant at .01 level. That is, there was a significant relationship between economic classes and four dimensions of status. Table 5 shows the percentage distribution of the positve answers to the four dimensions indicating self status perception. It shows that most of the lower class employed women perceived their status higher in the case of 'purdah' (62.5%) compared to other dimensions. This means that they do not need to observe 'purdah' so much. Most of the middle class employed women perceived their status higher in the case of economic power (47.37%) and behavior of husbands (36.84) compared to other two dimensions. In the case of upper class employed women, most of them perceived their status higher only in the case of income-expenditure power (66.67) compared to other dimensions.

Table 4. Chi-square Table for the numbers of the Positine answers to the four dimensions of status perception of three S.E. Classes.

Dimensions \ S.E. Class	Lower	Middle	Upper	Total	Chi square	p
(1)	1	2	1	4		
(2)	2	9	6	17	20.43	<.01
(3)	3	7	2	12		
(4)	10	1	0	11		
Total	16	19	9	44		

(1) Decision making power of wife

(2) Income-expenditure power of wife

(3) Behavior of husband and other fawnly members

(4) Purdah of wife

Table 5. Numbers and percentage distributions of the positive answers to the four dimensions of self status perception of three S.E. classes

S.E. Class	Lower		Middle		Upper	
*Dimension	n	%	n	%	n	%
(1)	1	6.25	2	10.53	1	11.11
(2)	2	12.50	9	47.37	6	66.67
(3)	3	18.75	7	36.84	2	22.22
(4)	10	62.50	1	2.26	0	0

* as above.

DISCUSSION

A major finding of this study is that the employed women perceived their own status higher than the unemployed women. In order to provide an explanation for this finding, it can be said that the non-earning domestic works which mostly preoccupy women, do not give prestige or rise their position in the status hierarchy, although the work they do at home is important. According to Marxist analysis, social class and status differentiation lies in the difference of economic condition. Clearly, the difference in income and possession and control of assets in the family may have resulted in the difference in status of men or women. To elevate the status of women, the Government of Bangladesh has undertaken a vocational programme for women. One of the objectives of the women's vocational programme is to raise the status of women in their social habitat-the family. It is believed that the downgraded position of women in the family is largely due to their dependency, which is again, to a great extent, deemed to be owing to their lack of education and income earning. So, the status of any given section of population in a society is intimately connected with its economic position, which (it self) depends upon rights, roles and opportunities for participation in economic activity. In other words, employment can be can be considered as an important variable measuring the status of women in the present research.

Another important finding of this study is that the perceived status of the middle class employed women is higher than that of both the lower and upper class employed women. This result impels us to look at the society more closely.

Compared to lower and upper class families, middle class families are facing more difficulties or problems in our society. They are very sensitive to social prestige. They think that their social status is quite high but infortunately have much less economic strength to maintain that status. In such a situation, if the wife can manage to share the family expenditure by some earning, husband and other members of the family tend to treat this as a big relief and contribution to the family. They become more independent in many sectors or family affairs, e.g., decision making, expenditure of money, management of household activities, shopping, social obligations, etc. So, they perceived their status higher than lower and upper class employed women.

On the other hand, many women in the lower class earn money and contribute to the welfare of the family, but their husbands do not seem to appreciate it. Most of them like to supress their wives primarily because of faulty social learning. Somewomen working in local garment factories reported that their husbands wait at the gate of the factory to collect their monthly salary on the first day of every month. As a result, they lose the rights of that money. They hardly can express any opinion about the family or buy anything they want.

It was found that the perceived status of upper class employed women is not as high as high as lower and middle class employed women. The reason might be the large difference in their income and their husband's income. Husbands of these women earn a lot compared to them. So, these husbands do not bother about the income of their wives. They treat the job of their wives as a hobby rather than necessity. This may be the reason that very few of the upper class working women found change in their husband's attitudes or behaviour because of their employment stutus.

Last but not the least important finding is that most of the lower class employed women perceived their status higher in the case of purdah, most of the middle class employed women perceived it in the case of economic expenditure power and behavior of husbands, and most of the upper class employed women perceived it in the case of only income expenditure power compared to other dimensions.

The primary motive of lower class employed women is to earn money. It is true that these families are very much hard pressed by the economic crisis and so they are unable to keep pace with using prices without extra income. The income of these families is so low and their wants are so manifold that pooling of all earnings of the family could fulfil only an insignificant portion of the basic needs and so no member can waste money for personal preference. This might have been the reason for most of the lower class employed women to have perceived their status low in the case of their economic expenditure power or decision making power.

Middle class employed women may be forced to take up a job because income of the husbands is insufficient for keeping the family at subsistence level. Members of their families think that their social status is quite high but unfortunately have much less economic strength to maintain that status. Another reason may be that her income will enable the family to meet the basic necessities of life more fully such as a comfortable house, nourshing food, clean clothes and education for children and there may be some who go to work because they feel that a television, a sofa and a refrigerator are essential items of modern living without which life is not worth living. They desire to earn not due to extreme necessity but to buy such comforts as are not available with the income of their husbands only. For this reason their husbands become more sympathetic to their wives, so they perceived their status higher in the case of behavior of husbands, income-expenditure power etc.

Upper class families need not make much demand on the earning of their women. Female member of these families, therefore, have the opportunity to exercise their right to spend their income as well. Besides this, few of the upper class employed women desire a higher social status through occupational career. For this reason, their husbands do not care for their income and so, they spend it for the purpose of enjoying luxuries of life by their income-expenditure power.

From personal interview, it was known that according to a middle class working woman, "Earning makes a women confident, and moreover, when a woman shares her husband's economic problems there is a better understanding for happiness." According to a lower class working women "When a women earns, she improves, her position, Otherwise, she is treated like chattel, only useful when needed".

However, this study cautions generalization. It has some limitations. First of all it was limited to only Dhaka urban area. Sample size was also small. Besides this, employed women did not represent all professions and it seems that some women may not have expressed their true feeling. In addition, the socio economic class, should have been determined with due consideration to education and social position along with income and occupation. So, the authors recommend further research on larger samples and with better methodogical sophistication.

References

Chaudhury, R.H. and Ahmed, N.R. Female status in Bangladsh. The Bangladesh Institute of Development Studies, Dhaka : 1980.

Mukherjee, N. Status of Women as Related to Family Planning Journal of Population Research Vol. 2 (1), Pp. 5—33, 1975.

The BANGLADESH JOURNAL OF PSYCHOLOGY Publishes original contributions in various areas of psychology including, but not limited to the following : Social, Developmental, Experimental, Psychometrics. Abnormal, Clinical, Industrial, Educational and Counselling and Guidance. Book Reviews and Brief Reports are also included, if not regularly.

Authors are required to supply two copies of the typewritten manuscripts prepared in the style of this Journal. Each article should contain an ABSTRACT not exceeding 150 words.

The Journal publishes only those articles that are judged publishable by the Board of Editors after getting them reviewed by appropriate persons specialized in the area.

Address for sending manuscripts :
Editor, The Bangladesh Journal of Psychology
Department of Psychology
University of Dhaka
Bangladesh.