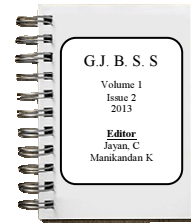




Guru Journal of Behavioral and Social Sciences

Volume 1 Issue 2 (April – June, 2013)

ISSN: 2320-9038 www.gjbss.org



Styles of Thinking among Learning Disabled and Slow Learners

Hassan, A* & Sylaja, H**

*Research Scholar, Department of Psychology, S.S.U.S. Kalady.

**Associate Professor & Head, Department of Psychology, S.S.U.S. Kalady.

Abstract

Received: 24 April 2013

Revised: 25 May 2013

Accepted: 10 June 2013

Keywords:

Styles of thinking, Learning Disabled and Slow Learners.

Thinking is a process of human mind. It is a main function of human behavior. Students with learning disabilities have average or above average intelligence with specific cognitive, thinking, or psychological processing problems. The chief deficiency in slow learners is in the area of intelligence. They lack in reasoning ability. The population for the present investigation defined as learning disabled, slow learners, and non disabled learners' school students from Ernakulam district, Kerala. The study revealed that there is significant difference among the learning disabled, slow learners and normal learners in styles of thinking. This means that styles of thinking of three groups based on creative thinking, problem solving thinking, imaginary thinking is significantly different.

© 2013 Guru Journal of Behavioral and Social Sciences

Styles of thinking depend upon cerebral dominance of an individual in retaining and processing different modes of information in his own style of thinking. Styles indicate the hemisphericity functions of the brain, and students learning strategy and information processing are based on the preference of the brain area. Styles are propensities rather than abilities. Thinking styles like abilities are not etched in stone at birth. They are in large part developed due to environmental condition and by way of nurturing children by their parents and teachers. Some individuals may have one preferred style at one stage and another preferred style at some other stage. Styles of thinking are not fixed but changeable. Most children are somewhat flexible in their use of styles and they try with varying degrees to adopt themselves to the stylistic demands according to situation. This is because mind plays a flexible role in accomplishing variety of tasks. It is therefore important for the parents and the teachers to understand the nature of the student's mind and its functions in different styles of thinking.

Weingarten (1987) suggested that the styles of thinking with respect to social-emotional development and deficits on social perception, and its contribution to specific learning disabilities, especially, perhaps, in arithmetic. He found that the problems in styles of thinking might significantly affect a person's perception of his or her environment. An attempt is made to show in what manner problems in styles of thinking may interfere with child-development and contribute to learning disabilities in the area of social perception and arithmetic.

Styles of thinking are a way of reasoning that demands adequate support for one's beliefs and an unwillingness to be persuaded unless support is forthcoming. A style of thinking employs not only logic but broad intellectual criteria such as clarity, credibility, accuracy, precision, relevance, depth, breath, significance and fairness. It depends on the thinking styles of person and varies from each others. Styles of thinking are important for learning process. Without thinking learning is not complete. For better learning in classroom thinking strategies should be used. In the classroom activities styles of thinking must be applied by the teacher. Styles of thinking help students and teachers for improvement of their knowledge, skill and attitude in the field of their profession. Styles of thinking are most useful and applicable tool for classroom teaching and learning. It is the most useful for productive teaching and learning in classroom. By the critical thinking students are able to express them self to speak their thought.



They also have become more attentive listeners to each other. They also included in the creative process of knowledge building.

Sternberg's (1988) theory of thinking styles and Perry's (1970) theory of cognitive development, the author investigated the nature of thinking styles as they relate to cognitive development. Statistical analyses provided varying degrees of support for the prediction of an overlap between the thinking style and cognitive development constructs. In general, students who reasoned at a higher cognitive developmental level tended to use a wider range of thinking styles than students who reasoned at a lower cognitive developmental level.

The existence of learning disabilities has been documented for approximately 200 years. The origin of what are currently called learning disabilities can be traced back to be early attempts to relate functioning within certain areas of the brain to human behavior. Early physicians noticed that patients with certain types of brain injury experienced specific types of behavioral problems. Most relevant to learning disabilities were patients with injuries to the left hemispheres of their brains, who in many cases experienced problems such as slow, laborious speech and the inability to name objects or persons. Students with learning disabilities experience perceptual problems such as left-right orientation, figure-ground differentiation, pattern discrimination, body image difficulties, symbol recognition, and auditory association. Students with learning disabilities are said to fail to develop and use cognitive learning strategies such as organizing learning tasks and learning how to learn. There is evidence that successful learners employ a set of self-monitoring and self-regulating strategies that are absent or deficient in students with learning disabilities. These students are said to lack awareness of the skills, strategies, and steps necessary to solve problems or complete tasks, and to have difficulty evaluating the effectiveness of what they do.

Bryan (1974) summarized five studies and concluded that the learning disabled child was more egocentric. Children with learning disabilities have also been found to be significantly less empathic, thus suggesting that learning disabled children's perceptual problems prevent them from developing the appropriate experiences to make appropriate judgments regarding the recognition of emotion to context.

Badian (1983) pointed out that there is a positive correlation between social skills and arithmetic. High achievers in arithmetic were found to be well adjusted and sociable, and low achievers were found to have severe emotional problems. Moreover, children with deficient arithmetic skills have been found to experience difficulty in learning appropriate social generalizations.

Slow learners have emotional and moral characteristics such as excitability, impulsiveness, lack of concentration and sustained application, lack of emotional balance, and undesirable habits of behaviour contributing towards educational sub normality. Slow learners have many adjustment problems in regular classes. He is flooded with anxiety, produced by the defence he has created against self-devaluation. The chief deficiency in slow learners is in the area of intelligence. They have lesser capacity of abstract thinking and to correlate various experiences. They lack in reasoning ability.

Runco (1986) found that the relationship between divergent thinking test scores and creative performance was evaluated and compared in learning disabled and slow learners children. The criterion of creative performance was a self-report which estimates the quantity and quality of extracurricular activity in seven domains. Results of canonical and bivariate analyses indicated that divergent thinking and creative performance scores were moderately related in the learning disabled sample, but unrelated in the slow learners sample. Additionally, the quantity of extracurricular performance was more predictable than its quality. Finally, there were particular areas of performance (e.g., writing and art) that were more strongly related to divergent thinking than other areas (e.g., music and science).



The learning disabled children are not the same as slow learners. The problems of slow learners may be due to low intelligence, environmental, cultural, or social disadvantages, psychological and emotional hazards, or defective instruction. But the problems of learning-disabled children are not primarily caused due to these factors. A slow learner may perform poorly in all academic areas. But a learning disabled child has difficulty only in a specific academic area such as reading, writing, or arithmetic. The factors, which cause slow learning, are well established. But the cause of learning disability is still a mystery.

Though both the slow learners and the learning disabled have learning difficulties, there is still difference between the two. A slow learner is one who is unable to do the work of the class in which he is placed or even class below that. He is not up to the attainment levels in various subjects, which are normal for his age or grade. Learning disabled are those children who have disorders in development of language, speech, reading, and associated communication skills needed for social interaction. The term does not include children having learning problems which are primarily the result of visual, hearing, or motor handicaps; of mental retardation; of emotional disturbance; or of environmental, cultural, or economic disadvantage. Slow learners come under learning problem and it is concerned with the lower learning rate of the children. Specific learning disability clearly points out that slow learning does not fall under the purview of learning disability.

Shanker (1958) writes, if learning disabled and slow learners are kept with normals, they will be pushed back and the backward will become more backward with children of their own level. But they will be less conscious of their drawbacks and they will feel more secure in a group of their own type where there will be more encouragement and appreciation and less competition.

The aim of the study is assess the differences among learning disabled, slow learners, and normal learners based on their styles of thinking.

Objective

1. To study the difference in styles of thinking of learning disabled, slow learners and normal learners.

Hypothesis

2. There will be significant difference among learning disabled, slow learners and normal learners in styles of thinking and its sub variables.

Method

Participants

In this study, the investigator used purposive sampling technique. The population for the present investigation defined as learning disabled, slow learners, and normal learners school students from Ernakulam district. The sample consist of 60 learning disabled 60 slow learners and 60 normal learners, belonging to class 8-12.

Instrument

1. Styles of Learning and Thinking (SOLAT): This instrument was developed by Venkataraman (1994) is used in the present study. It is a modified version of the tool developed by Torrance. It identifies hemisphericity dominance by way of studying the hemisphere functions. It indicates the learning and thinking styles. The reliability coefficient of correlation for the right hemisphere function was found to be .89 for the left hemisphere function the coefficient of correlation was found to be .65. The coefficient of correlation for the integrated score was .71. These coefficients suggest that the SOLAT possesses reliability to a significant level. The initial construct validity study was conducted by the author; the SOLAT was tested with 50 students from a variety of academic disciplines. As part of the course each student took several tests of creativity which provided to construct validity evidence. Creative problem solving and creative



thinking call for both left and right-hemisphere functions. Considerable evidence suggests that the essence of creative behavior calls for right-hemisphere functions and judgment. Evaluation and elaboration require left-hemisphere functions.

Procedure

The data were collected with the help of the clinical psychologist, special teachers and principals of the particular schools. The instrument was distributed among normal learners, learning disabled and slow learners. In this study, the clinical psychologists early identified cases of learning disabled, slow learners and normal learners are selected. The subjects were allowed to complete the instrument at leisure and each subject took around 1 hour to complete the instrument. Necessary clarifications were provided as and when requirement arisen.

Results and Discussion

The objective of the study hypothesized as "there will be significant difference among learning disabled, slow learners and normal learners in styles of thinking and its sub variables".

ANOVA was employed to test significant difference among learning disabled, slow learners and normal learners based on their logical thinking, divergent thinking, creative thinking, problem solving thinking and imaginary thinking.

Table 1

Summary of one-way ANOVA of Logical Thinking by Groups

Variables	Sum of squares		Mean square		F-ratio
	Between	Within	Between	Within	
Logical Thinking	0.71	41.26	0.35	0.23	1.52
Divergent Thinking	0.17	17.26	0.08	0.09	0.91
Creative Thinking	80.04	129.73	40.02	0.73	54.60**
Problem Solving Thinking	10.53	35.26	5.26	0.19	26.43**
Imaginary Thinking	51.73	122.06	25.86	0.69	37.50**
Styles of Thinking	618.17	634.80	309.08	3.58	86.18**

**p < .01

A significant result was obtained in the one-way ANOVA, in which $F = 86.18$ ($p < .01$) and it indicates that there are significant differences among the learning disabled, slow learners and normal learners. The present investigation tested the styles of thinking of learning disabled, slow learners and normal learners based on logical thinking, divergent thinking, creative thinking, problem solving thinking and imaginary thinking. The F ratio obtained in the analysis was 86.18 it was significant. This means that styles of thinking of three groups based on creative thinking ($F = 54.60$), problem solving thinking ($F = 26.43$), imaginary thinking ($F = 37.50$), is significant.

Table 2

Mean and SD of Styles of Thinking of Learning Disabled, Slow Learners and Normal Learners

Variables	Learning Disabled		Slow Learners		Normal Learners	
	Mean	SD	Mean	SD	Mean	SD
Logical Thinking	4.70	0.64	4.83	0.37	4.83	0.37
Divergent Thinking	4.90	0.30	4.97	0.31	4.93	0.25
Creative Thinking	4.10	1.05	3.30	1.01	4.93	0.25
Problem Solving Thinking	4.93	0.25	4.37	0.61	4.8	0.40
Imaginary Thinking	4.50	1.00	3.57	0.96	4.83	0.37
Styles of Thinking	4.97	0.48	4.11	1.08	4.30	0.98



From table 2, it can be seen that the normal learners had the highest mean score (Mean=24.37) followed by the learning disabled (Mean=23.13) and by the slow learners (Mean=19.97). The ANOVA results ($F=86.18$) show that the F- ratio obtained in the case of styles of thinking and its sub variables is significant. Test of significant differences reveal that the styles of thinking of slow learners had significantly less score than learning disabled and normal learners.

The result is supporting the studies with the findings of Maria (2010) teaching thinking skills to students is often associated with a thinking strategy or a specific thinking technique. The strategy or technique may refer to a series of steps that is systematically drawn up to ensure that the teaching of thinking skills takes place effectively. In the case of Malaysia, a conceptual framework of Thinking Skill Thinking Strategy (TSTS) was constructed by the Curriculum Development Centre to infuse thinking in students. The TSTS framework found in the Science Curriculum Specification acts as a guide for teachers to teach the skills during the teaching and learning process. The purpose of this paper is to discuss the potential of an analogical task in accelerating the thinking skills of Malaysian students in the teaching and learning of an abstract biology concept. The analogical task given to 99 biology students seemed to enhance the various thinking skills depicted in the TSTS framework. As the students strive to generate their respective analogies, their reasoning capabilities, creative and critical thinking skills as well as their thinking strategies developed significantly.

The mean value indicate that learning disabled, slow learners and normal learners are no significant different in their thinking style of logical thinking. In the comparison of three groups of subjects, under study, for the variable logical thinking, the F- ratio obtained is 1.52 and is not significant. These indicate that learning disabled, slow learners and normal learners not differ among themselves in the variable.

The mean and S.D score indicate that no difference in their divergent thinking of learning disabled, slow learners and normal learners. Tables indicate that the F ratio obtained on comparing the three groups for the variable divergent thinking is .91. This means that divergent thinking of three groups were no significant difference.

Above results heighten the fact that when comparing the normal learners , slow learners and learning disabled were found to be significantly different on their logical thinking. The slow learners mean value 3.30 indicated that low creative thinking compare with learning disabled and normal learners. The F- ratio obtained on comparing the three groups for the variable creative thinking is 54.60, and is significant statistically. This shows that learning disabled, slow learners and normal learners differ among themselves in the variable creative thinking.

The result is supporting the studies with the findings of Abrami (2008) critical thinking (CT), or the ability to engage in purposeful, self-regulatory judgment, is widely recognized as an important, even essential, skill. This article describes an ongoing meta-analysis that summarizes the available empirical evidence on the impact of instruction on the development and enhancement of critical thinking skills and dispositions. The findings make it clear that improvement in students' CT skills and dispositions cannot be a matter of implicit expectation. As important as the development of CT skills is considered to be, educators must take steps to make CT objectives explicit in courses and also to include them in both preserves and in-service training and faculty development.

The result is supporting the studies with the findings of Clapham (1998) analyzed the structure of the subscores obtained through streamlined scoring of 334 adults' responses to Figural Forms A and B of the Torrance Tests of Creative Thinking (TTCT). The results of commonality analyses confirmed that the five subscores of each form provide very little unique variance and suggested that a new subscore, resistance to premature closure, may be a better indicator than fluency is of the divergent thinking skills measured by the figural TTCT



The result is supporting the studies with the findings of Sullivan and Tim (1969) Attitudes acquired by a child in his early school years influence his later decision to continue schooling or drop out. The Creative Problem Solving Class students are given an opportunity to progress at their own pace. Every creative process is utilized, and a better self-image is the result.

Table indicates the means and standard deviations of the problem solving thinking of learning disabled, slow learners and normal learners. The mean score of slow learners is less compare with two other groups. The F- ratio 26.43 indicates that the significant at 0.01 levels in the comparison of the three groups for the variable problem solving thinking. This shows that learning disabled, slow learners and normal learners differ among themselves in the variable problem solving thinking.

The results are supporting the studies with the findings of Swanson (2004) the purpose of this investigation was to explore the relationship between working memory (WM) and mathematical problem solving in children with learning disabilities. The results showed that (1) children with learning disabled were inferior on measures of word solution accuracy, components of problem solving, phonological processing, domain-general WM, and verbal WM when compared to children who were CA-M, (2) children with learning disabled were comparable to younger children on all processing measures, except measures of domain-general WM, visual-spatial WM, phonemic deletion, and identifying problem goals, (3) measures of verbal and visual-spatial WM contributed significant variance to solution accuracy independent of phonological processing, and (4) the influence of WM on solution accuracy was mediated by long-term memory (LTM) processes related to the knowledge of algorithms. The results support the notion that information activated from LTM, rather than phonological processing, mediates the relationship between executive processing and solution accuracy in children with LD.

The results are supporting the studies with the findings of Montague (1992) effects of cognitive and metacognitive strategy instruction on the mathematical problem solving of six middle school students with learning disabilities. Conditions of the multiple baseline, across-subjects design included baseline, two levels of treatment, setting and temporal generalization, and retraining. For Treatment 1, subjects received either cognitive or metacognitive strategy instruction. Treatment 2 consisted of instruction in the complementary component of the instructional program so that all subjects eventually received both cognitive and metacognitive strategy instruction. This design allowed a componential analysis of the content as well as sequence of instruction. Generally, subjects improved their mathematical problem solving as measured by performance on one-, two, and three-step word problems. Discussion focused on effectiveness of treatment, acquisition and application of strategic knowledge, error pattern analysis, and the need to tailor instruction to the learner's individual characteristics.

The results are supporting the studies with the findings of Bottge (2001) over the past century, learning theorists have advised researchers and practitioners on ways to improve student math performance. Available evidence suggests that these messages are mostly undelivered or unaccepted, or both, especially as they pertain to students who are unsuccessful in school. One of the reasons for the disconnection may be confusion about how learning theory can help identify suitable ways of delivering mathematics instruction to special populations. Based on a review of the literature in general education and special education, this article proposes a key model for teaching math to at-risk students.

The results are supporting the studies with the findings of Riley (1985) with age, children's improved ability to solve word problems primarily involves an increase in the complexity of conceptual knowledge required to understand the situations described in those problems. Considered in the various sections are conceptual and procedural knowledge in problem solving, approaches to analyzing knowledge in problem solving, a review of research on children's word problem solving, a theory of the knowledge required to solve word



problems, the locus of improvement in problem-solving skill, stages of conceptual knowledge, related analysis of conceptual understanding in problem solving, and a summary discussion.

The results are supporting the studies with the findings of Platt (1974) that adolescent psychiatric patients would be deficient with respect to normal controls in their interpersonal problem-solving skills by comparing 33 patients and 53 high school student controls on 7 tasks reflecting different aspects of problem solving. With IQ covered out, controls obtained significantly higher scores on the tasks evaluating optional thinking, social means-ends thinking, and role taking, but not on the tasks measuring problem recognition, causal thinking, emotional means-ends thinking, and consequential thinking. Findings are interpreted within a developmental framework of interpersonal problem-solving thinking.

The results are supporting the studies with the findings of Myrnab (1971) relationship between school behavior adjustment of 4-year-old disadvantaged children and real-life problem-solving thinking. The latter includes 3 parameters of thought-conceptualization of solutions to typical peer and authority problems, consequential thinking, and causal thinking. Resulting data show that the ability to conceptualize alternative solutions to problems was the only parameter directly related to teacher-rated judgments of classroom behavior but that all 3 parameters were significantly interrelated. Implications are that increasing a child's ability to think in terms of alternative solutions to real-life problems could supplement a primary preventive mental health program.

The mean value score (3.57) of slow learners indicate that low imaginary thinking compare with learning disabled and normal learners. The present investigation tested the imaginary thinking of slow learners, learning disabled and normal learners. The F ratio obtained in the analysis was 37.50 it was significant. This means that imaginary thinking of three groups significant difference. Since analysis of variance does show, any significant difference further analysis was carried out.

The result is supporting the studies with the findings of Bouldin (2001) the ability of children with and without imaginary companions aged 4-8 years to differentiate fantasy from reality. Video-recordings of each child's reaction to the silhouette and responses to a subsequent series of questions indicated that a significantly larger number of imaginary companion than non-imaginary companion children thought that an imaginary entity could be reflected in reality. However, as a number of non imaginary companion children also thought that an imaginary entity could be reflected in reality, differences in children's level of credulity, rather than the presence or absence of the imaginary companion, was considered to account for the fantasy- reality confusion.

The results are supporting the studies with the findings of Radziszewska (1991) the influence of guided participation in children's collaboration with adults and peers on children's learning to plan imaginary errands was investigated. 60 9-yr-old children collaborated with novice peers, peers trained in errand planning, or untrained adults. The collaborative planning of dyads with trained peers and dyads with adults was equally sophisticated.

The results are supporting the studies with the findings of Bolton (2002) magical thinking in childhood bears at least superficial similarities to obsessive compulsion, and recent cognitive models of obsessive compulsive disorder implicate forms of thinking akin to the magical. However, there has been little research on the relations between normal magical thinking in childhood and obsessive compulsion. It was found that children across the age range studied reported some magical thinking, and there was no general decline in the level of magical thinking with age. This overall pattern was complicated, however, by fluctuations in the level of magical thinking in later childhood and early adolescence, and by gender differences. There was a significant correlation between levels of magical thinking and obsessive compulsion.



Conclusion

The findings of styles of thinking reveal that there exists significant difference among the three groups. The study reveals that slow learners and learning disabled need additional support for higher order thinking. Based on the study special educators and educational psychologist, behavioral scientist, cognitive scientist shall use various supportive measures for improving the styles of thinking among learning disabled and slow learners.

An important problem that every school faces, are the difficulty to deal with the slow learners and learning disabled. The teachers have difficulty in managing these children, when in doing home work, class assignments, and teaching etc. It is estimated that due to that problem many slow learners or learning disabled are being termed as weak students and thrown out of the school. But this is not the solution. The result of the action of the throwing out the child out of the school paves the way to create a dark spot in the life of the victim child. If the teachers will give time to think over those children, definitely the solution comes in their hand. It is also the proof in history that many learning disabled have become qualified themselves as the scientists & writers in their life.

References

- Abrami, P. C. (2008) *Review of Educational Research* Vol. 78, American Educational Research Association, California
- Badian, N. (1983). The personal - Social characteristics of children with poor mathematics computation skills. *Journal of Learning Disabilities*, 16, 154-157.
- Bottage, B. A. (2001). *Schools and the Social Development of Young Australians*. Australian Council for Educational Research, Melbourne, Victoria.
- Botton, H. (2002). Coping strategies, self perceptions, helplessness and perceived family environments in depressed and suicidal children. *Journal of Consulting and Clinical Psychology*, 53, 533.
- Bouldin, P. (2001). The child's theory of mind Cambridge, *British Journal of Developmental Psychology*, 19, 99-114.
- Bryan, C. (1974). *Syntactic abilities in normal and dyslexic children*. University Park Press, Baltimore
- Clapham, M. M. (1998). The Education of slow Learning Childran, *Educational and Psychological Measurement*, 58(2), 275-283. SAGE publication, California.
- Montague, I. (1992). Rethinking learning. In D. Olson & N. Torrance (Eds.), *Handbook of education and human development* (pp. 485-513). Malden, MA: Blackwell Publishers.
- Mymab, B. (1971). *The cognitively oriented curriculum*. Washington, D.C: National Association for the Education of Young Children.
- Perrys, V. (1970). Statistical and psychometric issues surrounding serve discrepancy. *Learning Disabilities Research*, 3(1), 24-28.
- Platt, G. A. (1974). *How we think they think: Anthropological approaches to cognition, memory, and literacy*. Boulder, CO: Westview Press.
- Radziszewska, B. (1991). Parent and peer attachment in early adolescent mental health, *Developmental Psychology*, 27(3), 98-102.
- Riley, M. S. (1985). Engineering psychology and human performance, *Journal of Research and Development in Education*, Vol,5 44-56. American Psychological Association, Washington DC.
- Runco, M. A. (1986). Cognitive process of learning disabled, *Educational and Psychological Measurement*, 46(2), 375-384.
- Shanker, O. M. (1958). *Approaches to Curriculum Management*(Ed), Philadelphia: Open University Press.
- Stenberg, R. J. (1988). *Engineering psychology and human performance*, Columbus, OH: Merrill.
- Swanson, P. L. (2004). Individual and social aspects of learning, *Review of educational research*, 56, American Educational Research Association, California



- Sullivan, T., & Tim, Q. R. (1969) *Education of slow learning child*, New York: Roanlad Pros Company
- Venkataraman, D. (1994). *Styles of learning and thinking-administrator's manual*, New Delhi: Psycom Services.
- Weingarten, J. (1987) *Human psychology*, Columbus, OH: Merill.