

AN INVESTIGATION INTO LEARNING STYLES AND METACOGNITION OF B.ED. STUDENTS

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ABSTRACT

The main aim of the present study was to explore the relative contribution of Learning style and metacognition. In the present study, Sample size was 200 students of B.Ed. studying in colleges (affiliated to C.C.S. University, Meerut, U.P.) of Ghaziabad District. The collection of data was based on Learning Style Inventory (LSI) Constructed by David A. Kolb, 1985 and Metacognition Inventory (MCI) by Jamal Abedi. The data was statistically analyzed by Mean, S.D. and t-test. The statistical data of the study reveals the following main findings: It was found that there was a significant difference in Concrete Experience Learning Style, Reflective Observation, Abstract Conceptualization and Active Experimentation Learning Style of B.Ed. students having high Metacognition and low Metacognition.

Key Words: *Learning style, Metacognition, Learning, Style, etc.*

INTRODUCTION

In this era of globalization and technological revolution, education is considered as a first step for every human activity. It plays a vital role in the development of human capital and is linked with an individual's well-being and opportunities for better living, (Battle and Lewis-2002).

It ensures the acquisition of knowledge and skills that enable individuals to increase the productivity and improve their quality of life. This increase in productivity also leads towards new sources of earning, which enhance the economic growth of a country, (Saxton, 2000).

It has been accepted as a valid truth that understanding the ways students learn is the key element for a better education, (Callinson, 2000). All people vary in how they perceive and acquire information, conceptualize from ideas, process and memorize, from value judgments, and how they behave, (Hickinson and Baltimore, 1996). The effect of individual difference in learning styles has been investigated in the education field since the way students learn is has a very important in the process of education.

Every child follows its own unique way to learn and process information. They learn material in different ways. It is depend on different thinks as our before life, our beliefs, how we see

ourselves, how people see us, where we live. First of all we describe the concept of learning and style separately:

CONCEPT OF LEARNING

“Learning is the acquisition of habits, knowledge and attitudes. It involves new ways of doing things, and it operates in an individual’s attempt to overcome obstacles or to adjust to new situation. It represents progressive changes in behavior. It enables him to satisfy interests to attain goals”, (Crow and Crow, 1973).

Learning occupies a very important place in human life. It is a lifelong process. Learning is said to be equivalent to change, motivation, development, improvement and adjustment. It is not confined to school learning, cycling, reading, writing or typing but it is a comprehensive term which leaves a permanent effect or impression on the individuals.

Learning plays a very important role in determining behavior of an individual. It is the basis of success in life. The miracles of present day civilization are the result of learning. Learning occupies very important role in the field of education. We want to educate the students and it is only learning which education is. In order to develop presentation and skills of communication, that facilitates effective learning.

CONCEPT OF ‘STYLE’

Styles by contrast, are static and are relatively in-built features of an individual (Riding and Cheema- 1991).

The style is the most pervasive phenomena of the contemporary society. Different writers have used this term in a variety of contexts. However in the field of psychology, it has been used in the context of personality, cognition, communication, motivation, perception, teaching, learning, leadership, decision making and problem solving etc. Thus, the concept of style has been most often used to indicate an individual’s quality or behavior sustained over the time. It represents a distinct notion of coherent similarity in a variety of context.

LEARNING STYLES

The term ‘learning styles’ has been defined as the composite of characteristic cognitive, affective and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with and responds to the learning environment. (Keefe, 1979).

There have been various information-processing that have been developed throughout the history until today. One of these is the model David Kolb. Kolb’s learning cycle is based on John Dewey’s notion that learning must be grounded in experience. Therefore, the theory developed from the learning theory ‘Experimental-Learning’. In this theory, learning is a process where knowledge is created through the transformation of experience.

James and Gardener (1995) stated that the ways individual learner's react to overall learning environment make up the individual's learning style.

Kolb (1984), "Learning is the process whereby knowledge is created through the transformation of experience knowledge results from the combination of grasping experience and transforming it".

An overview of definitions of "Learning Style" reveals that learning style are consistent preferred ways of learning which the individual learners employ during learning of various tasks.

METACOGNITION

Metacognition enables us to be successful learner and has been associated with intelligence. (e.g., Borkowski, Carr and Pressley, 1987, Sternberg, 1984, 1986, 1988). Metacognition refers to higher order thinking which involves active control over the cognition process engaged in learning. Metacognition plays a critical role in successful learning, it is important to study Metacognitive activity and development to determine how students can be taught to better apply their cognitive resources through Metacognitive control.

Metacognition is often simply defined as 'thinking about thinking'. In actuality defining Metacognition is not that simple. Although the term has been part of the vocabulary of educational psychologists for the last couple of decades and the concept for as long as humans have been able to reflect on their cognitive experiences.

The term 'Metacognition' is most often associated with John Flavell (1979). According to Flavell (1979) Metacognition consists of both Metacognitive knowledge and Metacognitive regulation (experience). Metacognitive knowledge refers to acquired knowledge about cognitive process, knowledge that can be used to control cognitive process.

Oxford According to Flavell (1979), who coined the term Metacognition, is a regulatory system that includes (a) knowledge (b) experiences (regulation). Metacognitive knowledge is stored knowledge or beliefs about (1) oneself and others as cognitive agents. (2) tasks (3) actions or strategies and (4) how all these interact to affect the outcome of any intellectual undertaking. Metacognitive experiences are conscious cognitive or affective experiences that concern any aspect of an intellectual undertaking. Knowledge is considered to be metacognitive (as opposed to simply cognitive) if it is used in a strategic manner to meet a goal.

NEED AND SIGNIFICANCE

Metacognition has an important role to play in successful learning. Student who demonstrates a wide range of Metacognitive skill perform better on exams and complete work more efficiently. They are self-regulated learners who utilize the "right tool for the job and modify learning strategies and skill based on their awareness of effectiveness. Persons endowed with Metacognition are aware of their own strengths and weakness the nature of the task at hand and available "tools" or "skills".

It is obvious that the process of learning is critically important and understanding the way individuals learn is the key to educational improvement. One of the current challenges in teaching, particularly distance teaching over media such as the internet, is trying to meet the needs of heterogeneous students.

It is expected that styles of learning, are the basis of improvement the attitudes toward learning and increase productivity, academic achievement and creativity. The most effective learning occurs when the learning activities most closely match the learners preferred style.

Learning styles are the set of factors, behaviours, attitudes and interests of a student that facilitates his learning in a given situation. Learning styles are the basis of student's success. Metacognition have positive relation with learning styles. Metacognition is the awareness of one's learning and thinking process. Metacognition is the ability to be aware of one's own learning process as well as knowing what works best for one's. Metacognition gives the ability to know how to improve one's learning. So, it is necessary to study about Metacognition and learning styles of students.

STATEMENT OF THE PROBLEM

“AN INVESTIGATION INTO LEARNING STYLES AND METACOGNITION OF B.ED. STUDENTS.”

OBJECTIVES OF THE STUDY

Followings are the objectives of the study:

1. To find out difference in Concrete Experience Learning Style of B.Ed. students having high Metacognition and low Metacognition.
2. To find out difference in Reflective observation Learning Style of B.Ed. students having high Metacognition and low Metacognition.
3. To find out difference in Abstract Conceptualization Learning Style of B.Ed. students having high Metacognition and low Metacognition.
4. To find out difference in Active Experimentation Learning Style of B.Ed. students having high Metacognition and low Metacognition.

HYPOTHESES

The following hypotheses were formulated for the present study, which were subsequently tested:

Ho1- There is no significant difference in Concrete Experience Learning Style of B.Ed. students having high Metacognition and low Metacognition.

Ho2 –There is no significant difference in Reflective Observation Learning Style of B.Ed. students having high Metacognition and low Metacognition.

Ho3 - There is no significant difference in Abstract Conceptualization Learning Style of B.Ed. students having high Metacognition and low Metacognition.

Ho4 - There is no significant difference in Active Experimentation Learning Style of B.Ed. students having high Metacognition and low Metacognition.

SAMPLE

The population of the present study comprised of B.Ed. students of Ghaziabad. The sample was taken from 3 colleges of Ghaziabad. Total sample of students was 200 B.Ed. students.

TOOL FOR DATA COLLECTION

For the collection of necessary information for the present study, researcher used following tools:

1. Learning Style Inventory (LSI) Constructed by David A. Kolb, 1985.
2. Metacognition Inventory (MCI) by Jamal Abedi.

STATISTICAL TECHNIQUES

The data was statistically analyzed by Mean, S.D. and t-test.

ANALYSIS AND INTERPRETATION OF DATA

TESTING HYPOTHESIS-1

Ho1- There is no significant difference in Concrete Experience Learning Style of B.Ed. students having high Metacognition and low Metacognition.

In order to find out the difference in Concrete Experience Learning Style of students having low Metacognition and high Metacognition, t-test was used table No. 1 provides the obtained results of t-test.

Table No. 1

Scores of t-test on Concrete Experience Learning Style of High and Low Metacognition of B.Ed. Students

Group	N	Mean	S.D.	t-Value
High Metacognition	62	29.52	8.40	9.31**
Low Metacognition	37	27.67	5.82	

**Significant at 0.01 level a significance for df 97

It may observed from Table No. 1 that 't' value on Concrete Experience Learning Style of students having high Metacognition and low Metacognition found out as 9.31, which is

significant at 0.01 level of significance, it can be interpreted that students having high Metacognition and low Metcognition are different in selecting learning style Concrete Experience. Therefore, hypothesis stated as: There will be no significant difference in selecting Concrete Experience Learning Style of B.Ed. students having high Metacognition and low Metacognition was rejected. Further, it can be said that students having high Metacognition use more Concrete Experience Learning Style in comparison to low Metacognitive students. They learn more through Concrete Experience Learning Style.

TESTING HYPOTHESIS II

Ho2 –There is no significant difference in Reflective Observation Leaning Style of B.Ed. students having high Metacognition and low Metacognition.

Table No. 2 presents the summary of t-test for indentifying the differences in Reflective Observation Learning Style of B.Ed. students having high Metacognition and low Metacognition.

Table No. 2
Scores of t- test on Reflective Observation Learning Style
of high and low Metacognition of B.Ed. Students

Group	N	Mean	S.D.	t-Value
High Metacognition	62	30.21	6.79	6.46**
Low Metacognition	37	31.29	4.97	

** Significant at 0.01 level of significance for df 97

It can be seen from Table No. 2 that ‘t’ value on Reflective Observation Learning Style of students having high Metacognition and low Metacognition found out as 4.46 which is significant at 0.01 level of significance. So, it can be interpreted that students having high Metacognition & low Metacognition are different in selecting Learning Style Reflective Observation. On the basis of this, the hypothesis stated as: There will be no significant difference in Reflective Observation Learning Style of B.Ed. students having high Metacognition and low Metacognition was rejected. Further, It can be said that students having low Metacognition use more Reflective Observation Learning Style in comparison to high Metacognitive students. They learn more through Reflective Observation Learning Style.

TESTING HYPOTHESIS III

Ho3 - There is no significant difference in Abstract Conceptualization Leaning Style of B.Ed. students having high Metacognition and low Metacognition.

Table No. 3**Scores of t-test an Abstract Conceptualization Learning Style of high and low Metacognition of B. Ed. Students**

Group	N	Mean	S.D.	t-Value
High Metcognition	62	31.13	6.16	3.08**
Low Metacognition	37	30.08	5.62	

** significant at 0.01 levels of significance for df 97

It can be seen from Table No. 3 that 't'-value on Abstract Conceptualization Learning Style of students having high Metacognition and low Metacognition found out as 3.08 which is significant at 0.01 level of significance. It can be interpreted that students having high Metacognition are different in selecting Learning Style Abstract Conceptualization.

Therefore, the hypothesis stated as: There will be no significant differences in Abstract Conceptualization Learning Style of B.Ed. students having high Metacognition and low Metacognition, was rejected. Thus it can be said that students having high Metacognition use more Abstract Conceptualization Learning Style in comparison to low Metacognitive students. They use Abstract Conceptualization Learning Style in their learning.

TESTING HYPOTHESIS IV

Ho4 - There is no significant difference in Active Experimentation Learning Style of B.Ed. students having high Metacognition and low Metacognition.

Table No. 4**Scores of t-test on Active Experimentation Learning Style of high and low Metacognition of B.Ed. Students**

Group	N	Mean	S.D.	t-Value
High Metacognition	62	29.45	6.60	2.98**
Low Metacognition	37	30	5.71	

** Significant at 0.01 level of significance for df 97.

It may be observed from Table No. 4 that 't'-value on Active Experimentation Learning Style of students having high Metacognition and low Metacognition found out as 2.98, which is significant at 0.01 level of significance. On the basis of this, it can be interpreted that students having high Metacognition and low Metacognition are different in selecting Learning Style Active Experimentation.

Therefore, the hypothesis stated as: There will be no significant difference in Active Experimentation Learning Style of B.Ed. students having high Metacognition and low Metacognition was rejected. Further It can be said that student having low Metacognition use more Active Experimentation Learning Style in comparison to high Metacognitive student. They preferred Active Experimentation Learning Style in their learning.

FINDINGS

The findings of the study as follows:-

Hypothesis –1 There is no significant difference in Concrete Experience Learning Style of B.Ed. students having high Metacognition and low Metacognition.

It was found that there was a significant difference in Concrete Experience Learning Style of students having high Metacognition and low Metacognition. The t-value on Concrete Experience Learning Style was found 9.31 which was significant at 0.01 level of significance. Hence, the hypothesis was rejected.

Hypothesis–2 There is no significant difference in Reflective Observation of B.Ed. students having high Metacognition and low Metacognition.

It was found that there was a significant difference in Reflective Observation Learning Style of students having high Metacognition and low Metacognition. The t-value on Reflective Observation Learning Style was found 6.46, which was significant at 0.01 level of significance. Hence, the hypothesis was rejected.

Hypothesis–3 There is no difference in Abstract Conceptualization Learning Style of B.Ed. students having high Metacognition and low Metacognition.

After analyze the data the findings were that there was a significant difference in Abstract Conceptualization of B.Ed. students having high Metacognition and low Metacognition. The t-value on Abstract Conceptualization was found 3.08 which was significant at 0.01 level of significance. Therefore, hypothesis was rejected.

Hypothesis–4 There is no difference in Active Experimentation Learning Style of B.Ed. students having high Metacognition and low Metacognition.

It was found that there was a significant difference in Active Experimentation Learning Style of B.Ed. students, have high Metacognition and low Metacognition. The t-value of Active Experimentation was found 2.98 which was significant at 0.01 level of significance. So, the hypothesis was rejected.

CONCLUSION

On the basis of analysis of data and interpretation of results conclusions were drawn as:

1. B.Ed. students use all four Learning Styles but they preferred Active Experimentation Learning Style much.

2. B.Ed. students use regulation more in their cognitive process than the use of knowledge.
3. B.Ed. students were average in Metacognition.
4. B.Ed. students having high Metacognition use more Concrete Experience Learning Style than low Metacognitive students.
5. B.Ed. students having low Metacognition use more Reflective Observation Learning Style than high Metacognitive students.
6. B.Ed. students having high Metacognition use more Abstract Conceptualization Learning Style in comparison to low Metacognitive students.
7. B.Ed. student having low Metacognitive use more Active Experimentation Learning Style in comparison to high Metacognitive student.

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