LEARNING STYLES OF HIGHER SECONDARY SCHOOL STUDENTS ACROSS THEIR ACADEMIC STREAM

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ABSTRACT

This study is designed to find out the association between the Learning Styles and academic streams. For the purpose a sample of 150 higher secondary students (i.e. Arts-50, science- 50 and commerce-50) was drawn randomly from three institutions of Ganjam district. To collect relevant data the investigator used Learning Style Inventory (Agarwal, 1983). The statistical technique of chi- square was used to analyse data. The findings of the study were 1. The flexible Vs. Non-flexible learning styles were related to Arts and Science academic streams. Flexible learning style was more preferred by science students where non-flexible learning style was more liked by Arts students. 2. Students belonging to Science and Commerce differed significantly with regard to flexible Vs. Non-flexible, individualistic Vs. Non-individualistic, Visual Vs. Aural, Field-dependent Vs. Field –independent and motivation centred Vs. Non-motivation centred learning styles. Science students have more preference for flexible, individualistic, visual, field dependent and motivation centred learning styles where as commerce students have more inclination for non-flexible, non-individualistic, aural, field independent and non-motivation centred learning styles. 3. The individualistic Vs. Non-Individualistic learning styles were having significant relationship with Arts and Commerce academic streams. Arts students preferred more individualistic learning style while for commerce students, it was non-individualistic.

Key words: learning styles, academic stream, motivation and preference etc.

INTRODUCTION

The learners differ in the ways they approach learning. Every student has strengths and potentialities, but each may have a preferred way of using these potentialities for learning. The learners learn in different ways and differ in their potentialities to perform some tasks. Some learners preferred learning verbally, while others prefer materials that are more visual-spatial. The ways in which the learners approach the learning task and the behaviour in learning situation determines their learning style. Thus learning style refers to the ways, tendencies and preferences and the conditions under which a person best learns. The different styles of conceptualization and patterning of activities may be the most important characterstics of an individual in respect of learning (Tyler, 1978). According to Armstrong (1984), Learning styles are pragmatic manifestations of intelligence operating in natural contexts.

Pandian(1983) reported differences among college students in their learning style. Panigrahi (1993) concluded that the Flexible Vs non-Flexible learning styles were related to Arts and Science students. Flexible learning style was more preferred by science students while non- Flexible learning style was more liked by Arts students. The individualistic and non-individualistic learning styles were having significant relationship with Arts and Commerce students. Arts students preferred more individualistic learning styles where as for commerce students it was non-individualistic. The study of Samantaray (1998) revealed that the Flexible Vs non-Flexible, visual Vs aural, field-dependent Vs field-independent, motivation centred Vs non-motivation centred learning styles were related to residential background of women students. Science women students were superior over Arts women students with regard to short-attention span and motivation centred learning styles. Student's learning style determines his/her utilization of intellectual abilities of its own account. The identification of differences in learning style of the students by the teacher can make a significant effect on the efficiency of the learners. In this context some questions come to the mind like: What are the learning styles of the students? Do they vary to a great extent? What type of learning procedures and activities promote the successful learning among students?. A study of this kind is essential to address all these issues.

VARIABLES OF THE STUDY:

Learning style is considered to be the dependent variable, while academic stream is treated as the independent variable.

OBJECTIVES OF THE STUDY:

The objectives of the study were as follows:
1. To compare the learning styles of students belonging to Arts and Science streams.
2. To compare the learning styles of the students belonging to Science and Commerce streams.
3. To compare the learning styles of the students belonging to Arts and commerce streams.

HYPOTHESES OF THE STUDY

Keeping in view the above objectives the following null hypotheses were formulated and tested under the present study.
1. There is no significant difference in the learning styles of students belonging to Arts and Science streams.
2. There is no significant difference in the learning styles of students belonging to Science and Commerce streams.
3. There is no significant difference in the learning styles of students belonging to Arts and Commerce streams.

METHOD

The methodology adopted for the present study was as follows.

A. Sample:

The technique of sampling was random and representative. A sample consisting of 150 students (i.e. Arts-50, Science-50, Commerce-50) of +2 First year from three higher secondary schools of Ganjam districts was selected for the purpose of the study.

B. Tools Used for the Study

In order to collect relevant data, Learning Style Inventory (Agarwal, 1983) was used. It consisted of 63 items in total measuring 7 pair of learning styles namely 1. Flexible Vs Non-Flexible 2. Visual Vs Aural 3. Individualistic Vs Non-Individualistic 4. Field-dependent Vs Field-Independent 5. Short Attention Span Vs Long Attention Span 6.Motivation centred Vs Non-motivation centred 7. Environment oriented Vs Environment free. The items are of Yes/No type and score ranges from '0' to '9' for each pair of learning style.

C. Statistical Techniques Used

After scoring the data in the manner suggested above, the investigator tabulated the data of 150 students (i.e. 50 each stream). For analysis of the data Chi-square technique was applied. For calculation of values of Chi-square twenty one 7X7 contingency Tables were prepared.

RESULTS AND DISCUSSIONS

The first objective of the study was to find out the learning style of students belonging to Arts and Science stream. The investigator used Chi-square technique for finding out the association between the learning style and academic stream (i.e. Arts and Science). The obtained results are presented in Table-I

Table 1

Chi-square values showing the relationship between academic stream (i.e. Arts and Science) and learning styles.

Sl No.	Learning Styles	Arts (N=50)	Science (N=50)	χ^2 Value
1	Flexible Vs. Non-flexible	44 06	49 01	6.59*
2	Individualistic Vs Non-individualistic	40 10	42 08	0.28
3	Visual Vs. Aural	43 07	48 02	2.01
4	Field-dependent Vs field-independent	40 10	42 08	0.36
5	Short attention span Vs. Long attention Span	24 26	26 24	0.13
6	Motivation centred Vs. Non-Motivation centred	41 09	43 07	1.11
7	Environment Oriented Vs. Environment Free	32 18	34 16	2.46

*P<0.05,**P<0.01

Table 1 shows that Flexible Vs Non-Flexible learning style was associated with the academic stream (i.e. Arts Vs Science). Hence the hypotheses of no association stands rejected. An examination of frequency of respective cells in concerned contingency table indicates that flexible learning style was more preferred by the science students where as non-flexible learning style was more liked by Arts students. In rest of the learning styles there was no association between academic stream and learning style.

The second objective of the study was to find out the association between the learning style of students belonging to Science and Commerce academic stream. The results are given in Table 2

Table 2

Chi-square values showing the relationship between academic stream (i.e. Science and Commerce) and learning styles.

Sl No.	Learning Styles	Science (N=50)	Commerce (N=50)	χ^2 Value
1	Flexible Vs. Non-flexible	48 02	39 11	** 14.21
2	Individualistic Vs. Non-individualistic	39 11	28 12	** 13.38
3	Visual Vs. Aural	45 05	37 13	** 11.28
4	Field-dependent Vs. field- independent	40 10	38 12	** 4.83
5	Short attention span Vs. Long attention Span	26 24	30 20	1.01
6	Motivation centred Vs. Non-Motivation centred	42 08	36 14	** 4.56
7	Environment Oriented Vs. Environment Free	31 19	30 20	0.026

*$P<0.05$,**$P<0.01$

Table-2 discloses the fact that all the obtained chi-square values (except short attention span Vs long attention span, and Environment oriented Vs Environment free) were found significant. There were significant association between academic stream (i.e Science and commerce) and learning styles namely flexible Vs Non-flexible, Individualistic Vs Non-individualistic, Visual Vs Aural, Field-dependent Vs Field-independent, Motivation centred Vs Non-motivation centred. The data of the concerned contingency table demonstrate that science students have more preferences for flexible, individualistic, visual, field-dependent and motivation-centred and commerce students have more inclination for non-flexibility, non-individualistic, aural, and field-independent and non-motivation centred learning style. Therefore, the hypotheses of no association were refuted.

The last objective of the study was to find out the association between the learning style and academic streams of students (i.e Arts and Commerce). The results are given in Table-3

Table-3
Chi-square values showing the relationship between academic stream (i.e Arts and Commerce) and learning styles.

Sl No.	Learning Styles	Arts (N=50)	Commerce (N=50)	χ^2 Value
1	Flexible Vs. Non-flexible	43 07	40 10	1.97
2	Individualistic Vs. Non-individualistic	37 13	30 20	** 10.32
3	Visual Vs. Aural	42 08	38 12	3.71
4	Field-dependent Vs. field-independent	40 10	32 18	2.65
5	Short attention span Vs. Long attention Span	24 26	20 30	0.42
6	Motivation centred Vs. Non-Motivation centred	40 10	33 17	1.19
7	Environment Oriented Vs. Environment Free	28 22	30 20	0.49

*P<0.05,**P<0.01

Table -3 indicates that out of seven values of Chi-square , only one value was found to be significant which showed the association between learning style and academic stream(i.e. Arts and Commerce). This suggests that individualistic Vs non-individualistic learning style was having significant relationship with Arts and commerce academic stream. The respective data in contingency table shows that individualistic learning style was more preferred by the students of Arts stream while non-individualistic learning style was more liked by commerce students. In view of above results hypothesis of no association was rejected.

FINDINGS
    The findings of the study are summarised as follows:
1. The flexible Vs Non-flexible learning styles were related to Arts and Science academic streams. Flexible learning style was more preferred by science students where non-Flexible learning style was more liked by Arts students.
2. Students belonging to science and commerce academic stream differed significantly with regard to flexible Vs non-flexible, individualistic Vs non-individualistic, visual Vs aural, field-dependent Vs field-independent and motivation centred Vs non-motivation centred learning styles. Science students have more preference for flexible, individualistic, visual, field dependent and motivation centred learning styles where as commerce students have more inclination for non-flexible , non-individualistic, aural ,field-independent and non-motivation centred learning styles.
3. The individualistic Vs non-individualistic learning styles were having significant relationship with Arts and commerce academic streams. Arts students preferred more individualistic learning style, while for commerce students, it was non-individualistic.

DISCUSSION OF RESULTS

The findings of the study revealed that students belonging to Arts and science streams differed significantly with regard to their flexible Vs non-flexible learning style. Arts and commerce students exhibited significant difference in their preference for individualistic Vs non-individualistic learning styles. But science and commerce students have shown marked difference in their preference for flexible Vs non-flexible, individualistic Vs non-individualistic, visual Vs aural, field-dependent Vs field-independent and motivation oriented Vs non-motivation centred learning styles. The present study support the findings of Panigrahi (1983). The findings of the study suggest that there is some relationship between learning styles and academic streams, thus leading to hold the conclusion drawn by Verma and Kumari (1990).

EDUCATIONAL IMPLICATIONS

From the findings of the present study the investigator likes to point out the following implications which may profitably be applied to educational practices.

1. One of the significant findings was that science students in comparison to Arts students preferred more flexible learning style. It is through flexible style of learning perhaps the science students can approach learning quickly and easily. Hence Arts students be encouraged to proceed along the flexible line of learning.

2. When Arts and commerce students were compared, it was found that students belonging the Arts stream were in favour of individualistic style of learning and this style of learning sounds more psychological. Every individual learner has his/her own way of approaching the learning task. It should be encouraged among the commerce students too.

3. Another finding of the study was that science students had more preferences for flexible, individualistic, visual, field-independent and motivation centred styles of learning. To work on any task of learning these styles are quite apparent and essential too. These styles of learning facilitate the process of learning. Hence necessary steps should be taken to develop these styles of learning among the commerce students so that desirable behavioural changes can be effected and learning can be effective.

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