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Research Paper

A Study on the Effect of Different Learning Styles on Different Student-Groups

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ABSTRACT

A common concept is that individuals differ in how they learn. Learning styles refer to a range of theories that aim to account for differences in individuals' learning, and the Learning style inventories are based on the idea that people have different strengths and preferences when it comes to learning. Learning style inventories are designed to help respondents determine which learning style they have. These inventories typically take the form of a questionnaire that focuses on how people prefer to learn. Respondents choose the answers that most closely resemble their own preferences. Here in this paper, it will be discussed how the learning styles inventory finds the most preferable learning style of an individual, through a sample survey of students from Arts and Management disciplines. The sample of this survey consists of participants (students) who are aged between 19 to 23 years. For the survey, a questionnaire has been designed in accordance with the aforesaid idea of learning style inventories.

Keywords: *Learning Style Inventories, Learning Styles, Preferable Learning, Learning of Students, Design, Sample Survey*

Learning styles inventory has a great impact on education. This method is quite often used by teachers and therapists to find the learning style that a student would usually be most comfortable with or would usually prefer. This information tends to help in developing a student's study skills. Learning style inventories continues to be a popular classroom tool despite the fact that research has found quite little evidence of the fact that matching a student's learning preferences to instructional methods produces far better educational outcomes. Infact, a number of studies have found that students taught according to their identified learning style do no better than students who are not matched to their style.

Never-the-less, research has also supported the idea that people have definite preferences for how they learn new information. This might end up being a way for students to develop study habits that keep them interested and engaged in the learning process. In the following, various popular Learning Style Models have been discussed.

1) David Kolb's model - This model outlines two very closely related approaches toward grasping experience: Concrete Experience and Abstract Conceptualization, as

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well as two other related approaches toward transforming experience: Reflective Observation and Active Experimentation. According to Kolb's model, the ideal learning process engages all four of these modes in response to situational demands

2) Peter Honey and Alan Mumford's model - Kolb's experiential learning framework was modified by Peter Honey and Alan Mumford. The learning cycle's stages were renamed to reflect managerial experiences like having an experience, reflecting on the experience, drawing conclusions from the experience, and determining the next course of action. The stages were then mapped to four learning styles, which were identified as follows: 1. Activist, 2. Reflector, 3. Theorist, and 4. Pragmatist.
3) Neil Fleming's VAK/VARK model - The VARK model was designed by Neil Fleming in the year 1987. In this model, Fleming developed a way to help students learn more about their preferences. VARK learning styles are visual, auditory, read/write, and kinesthetic.
4) Anthony Gregorc's model - Gregorc's learning styles have a way of breaking the mind's ability to learn into four distinct categories which are, concrete sequential, concrete random, abstract sequential, and abstract random.
5) NASSP model -In order to conduct a study on learning styles, a task force known as the National Association of Secondary School Principals (NASSP) was established in the 1980s. With 31 factors, including the Barbe and Colleagues' VAK model and the questionnaire's adherence to Neil Fleming's VAK/VARK model, the force discovered that the three style groups of Cognitive, Affective, and Physiological made up the bulk of respondents.

REVIEW OF LITERATURE

Carrel and Monroe conducted research on the connection between language development and learners' learning styles in 1993. Three sets of students were given the Myers-Briggs Type Indicator, and they discovered a correlation between the MBTI and holistic rating.

The effect of learning styles on linguistic achievement and proficiency has been studied in considerable detail. When Chappell and Robert examined English language learners in Illinois who were learning the language as a second language in 1986, they discovered that those who had a high tolerance for ambiguity performed somewhat better on some language tests. Later studies conducted by Oxford (1992) confirmed the possible influence of learning styles on language achievement. Field-independent and Field-dependent learning styles may be the ones that have been extensively studied for this reason. Naimen (1978) found that field independence corresponds favorably and significantly with language proficiency in the classroom in a research with English-speaking students learning French in Toronto. Abraham (1985) found that the second language learners who are field independent perform way better in deductive lessons while those with field dependent styles are more successful in making some inductive lesson designs.

To determine the impact of cultural influences on learning preferences, researchers Nelson (1995), and Reid (1995) from Georgia State University carefully examine the learning styles of Chinese learners and Japanese learners in one of their articles. As we have seen, the Confusion tradition is highly valued in education, particularly in educating the members of society as to how humans should connect to and interact with one another. Confusing philosophical principles have a significant influence on both Japan and China. He asserts that one of the key traits of Japanese learners is reflectivity based on Condon's (1984) results. They waited until all of the papers were delivered before starting their job. They didn't start it right away or hastily. Nelson sees sensitivity to the overall learning

environment as the second characteristic of Japanese learning styles, and modeling—learning through observing someone else demonstrate a new skill—as the third aspect of a Japanese learning style. Cooperation amongst diverse learners is one of the most significant characteristics of Chinese learners' learning preferences. This inclination for cooperation contrasts with Americans' preference for individualism and competition. A clear connection between culture and learning styles can be shown from the analysis and comparison.

The research findings on learning styles give teachers, counselors, and students themselves significant potential for new ways to teach and learn, according to Claxton and Ralston (1978, in Miller, 1982). Although it would seem that matching learning style and instructional mode would promote good interpersonal ties and lead to greater learning, there aren't many actual studies to back up this theory. If learning styles research is to play a substantial role in enhancing college and university instruction, there is a sizable vacuum in the research that has to be filled.

According to Cornett (1983), instructors may become confused by the number of labels and categories used to designate the various areas of style. The decision of which aspects of learning style to elucidate and which interactions might be significant, practically speaking, in understanding their contribution to achievement is difficult because learning style is a complex construct involving the interaction of many elements, according to Corbett and Smith (1984).

According to David Merrill (2000), "instructional strategies" should be created first for the sort of content that will be taught, and only then should they be modified to meet the needs of the different learning styles. He stated that the person wouldn't be able to experiment with newer learning styles until they were taught about their own learning preferences. If a person is aware of their preferred method of learning, they might become more aware of their learning strengths and shortcomings.

According to a study by Coffield et al. (2004), it is necessary to develop creative activities that are varied enough to teach a concept to a variety of learners. However, he doubts how beneficial these activities would be to the learning environment. He adds that it is crucial to adapt the presentation to the subject at hand, for instance by using the appropriate learning methods, strategies, and context, rather than tailoring it to individual tastes.

Anumeha and Reshmi (2015) sought to ascertain the effect of LS awareness among medical undergraduates and to encourage students to adopt a variety of learning strategies. The proportion of pupils who were aware of LS rose significantly. It was also significant how many individuals' VARK ratings for different learning modalities changed. Since they were aware of LSs, students were inspired to change their learning approaches and adopt new ones. Despite the fact that pupils have a variety of learning styles, individualizing teaching methods does not significantly improve learning outcomes. Therefore, one should aim to employ a mixed method approach in order to maximize learning.

METHODOLOGY

Sample

The experiment was conducted on a group of undergraduate Students, aged between 19 to 23 years, who are currently pursuing their degree from the college of Christ Academy, Bangalore. A total of 180 participants were recruited using convenience sampling method

for studying gender-specific variation; whereas the sample size is 129 for the study of steam-specific variation.

Aim

The aim of this experiment is to compare the learning styles of students from disciplines of Arts and Management and also of Male students and Female students.

Hypotheses

The two hypothesis of the experiment are:

1) There is no significant difference between students of different disciplines i.e., arts and management, on learning style.
2) There is no significant gender difference in learning styles among college students.

Research Design

The research design of this report is qualitative i.e. using questionnaire, after adopting a sample survey design.

Measuring Tool

The Learning Styles Inventory (LSI) by Dr S V Surya Rekha assesses preference for four styles of learning: Visual (V), Aural (A), Read-Write (R) and Kinaesthetic (K). It consists of 40 statements about learning preferences with 10 statements corresponding to each style. The inventory is scored by adding up all statements the participant agrees with resulting in a score ranging from 0 to 10, for each style. Each score is further interpreted using the Scoring Key as indicating 'high preference', moderate preference' or 'low preference'. Data were collected from Arts and Management degree students by circulating this questionnaire.

Procedure:

The researcher approached students from the Department of Arts and humanities, Department of Science and Department of Management and commerce from the degree college namely Christ Academy Institute for Advanced Studies, and contact information of the students were collected. Students were explained the instructions clearly and were asked to fill the forms. Informed consent was also obtained through the same form.

Ethical consideration:

Informed consent was given by all participants. They were briefed on the purpose of the study, and were informed that they could withdraw any time without having to give reasons for the same. They were assured that the information obtained would remain confidential and would be used only for academic purposes.

RESULT

Table 1: Showing descriptive & inferential statistics of students between arts and management students on learning style.

Learning Styles	Stream	n (Sample Size)	Mean	SD	t Value	Sig Level
Visual	**Arts**	83	5.99	2.217	-3.085	.002 *
	Management	46	7.26	2.294		
Auditory	**Arts**	83	6.23	1.803	-1.150	.252
	Management	46	6.65	2.321		
Reading	**Arts**	83	5.24	2.351	-1.167	.245
	Management	46	5.76	2.549		
Kinesthetic	**Arts**	83	4.70	2.310	-1.946	.054
	Management	46	5.57	2.613		
Total	**Arts**	83	22.12	5.054	-2.742	.007 *
	Management	46	25.24	7.841		

Note: Sig Level <0.05 indicates that it is significant (*)

Table 1 shows descriptive & inferential statistics of students between arts and management students on learning style, assuming the first null hypothesis that – "There will be no significant difference between arts and management students on learning style". Different t-tests have been performed for studying variation between students of Arts and Management Students in the average score for different Learning styles and in the total average score of all Learning styles altogether.

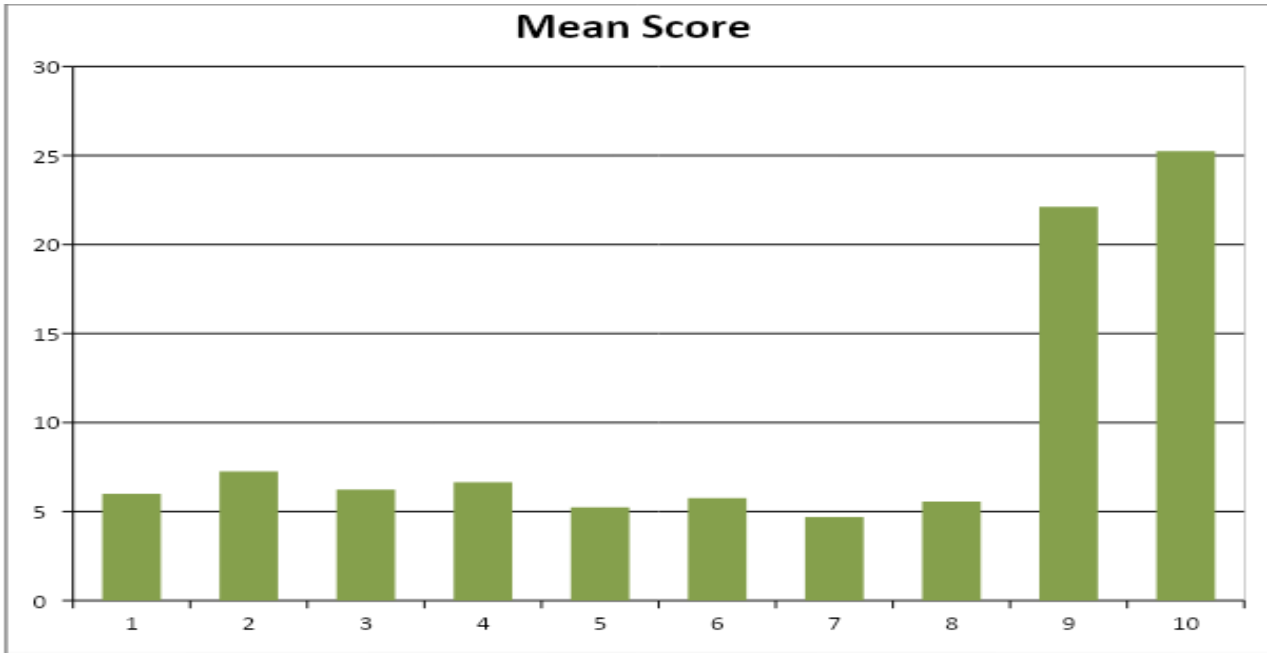
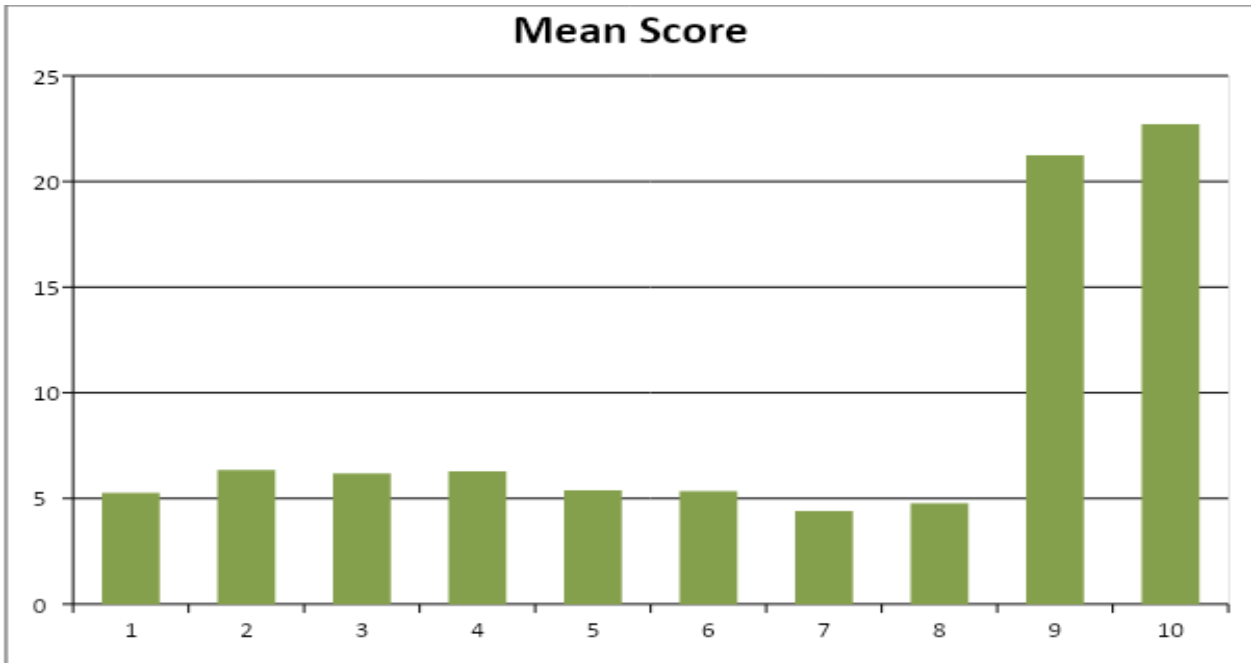


Table 2: Showing descriptive & inferential statistics of students between boys and girls on learning style.

Learning Styles	Stream	N (Sample Size)	Mean	SD	t Value	Sig Level
Visual	***Male Students***	53	5.26	2.338	-2.750	.007 *
	Female Students	127	6.35	2.434		
Auditory	***Male Students***	53	6.19	1.942	-.278	.782
	Female Students	127	6.28	2.145		
Reading	***Male Students***	53	5.38	2.396	.103	.918
	Female Students	127	5.34	2.272		
Kinesthetic	***Male Students***	53	4.40	2.713	-.913	.362
	Female Students	127	4.77	2.427		
Total	***Male Students***	53	21.23	6.562	-1.380	.169
	Female Students	127	22.72	6.618		

Note: Sig Level <0.05 indicates that it is significant (*)

Table 2 shows descriptive & inferential statistics of students between boys and girls on learning style, assuming the second null hypothesis that – "There is no significant gender difference in learning styles among college students". Different t-tests have been performed for studying variation between Male and Female students in the average score for different Learning styles and in the total average score of both gender altogether. Here it is to be noted that, though the sample size for Male students and Female size differ substantially, but it is more or less persistent to the total number of male and female students in the concerned college.



DISCUSSION

The aim of this study was to find out the difference, if any, in effect of various learning styles in students from different streams and from different genders.

In table 1, we see that the students of arts and management have a significant difference in their visual learning style, but no major difference in case of other learning styles such as auditory, reading and kinesthetic, have been observed. For visual learning style, we can see that the t value is -3.085 and the significance level is 0.002. For auditory learning style, the t value and the significance level are -1.150 and 0.252. For reading style, the values are -1.167 and 0.245 respectively, whereas for kinesthetic styles the values are -1.946 and 0.054. When the overall average score has been considered, taking all the four styles together, the t value and significance level are coming to be -2.742 and 0.007. Hence on an overall score, the first null hypothesis seems to be rejected based on the sample of students.

In table 2, we see that the male and female students have a significant difference in their visual learning style only, but no major difference in case of other learning styles such as auditory, reading and kinesthetic, have been observed. For visual learning style, we can see that the t value is -2.750 and the significance level is 0.007. For auditory learning style, the t value and the significance level are -0.278 and 0.782. For reading style, the values are 0.103 and 0.918 respectively, whereas for kinesthetic styles the values are -0.913 and 0.362. When the overall average score has been considered, taking all the four styles together, the t value and significance level are coming to be -1.380 and 0.169. Hence on an overall score, we see that there is no significant gender difference in learning styles among college students, and the null hypothesis can be treated as accepted based on the sampled students.

CONCLUSION

The results of this study provide some fascinating insights. In general, the first null Hypothesis, which states that “There will be no significant difference between arts and management students on learning style” seems to be rejected because there is a significant difference between arts and management stream students regarding scores for various learning styles. The alternative hypothesis which states that “There is a significant difference in learning style between arts and management students” seems to be accepted. On the other hand, the second null Hypothesis, which states that “There is no significant gender difference in learning styles among college students” seems to be accepted because no significant difference between male and female students can be found regarding scores for various learning styles. But in both cases, the Visual learning style does seem to have a significant difference in the score for students of both streams as well as for both genders. Further investigation in large scale may be performed to study whether the Visual learning style appears to be different for students of different disciplines and/or for different genders, and if so, what is the magnitude of such difference; it would be worthy for better understanding of the topic.

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Conflict of Interest

The author(s) declared no conflict of interest.

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