“CORRELATION BETWEEN LEARNING STYLE AND ACADEMIC ACHIEVEMENT”

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ABSTRACT

This research work was performed using survey method. The main focus of the current research work was to obtain the correlation among learning style along with students' academic achievement at the secondary level. Randomly, around 115 students were selected for the sample. Dr. D. Venkataraman developed a tool name as SOLAT (style of learning and thinking) and has used this tool in his research work to understand as well as for measuring the students' learning style. The scores of the second internal exam in all subjects are considered as students' academic achievement. Pearson's product-moment correlation was used to find out the correlation between learning style and students' academic achievement. The linear correlation among learning style and academic achievement in Sanskrit subject were found significant in right hemispheric dominant students. But it was found that the linear correlation between learning style and academic achievement was not significant among the boys. Instead, the linear correlation between learning style along with academic achievement was found significant among right hemispheric dominant girls and their achievement in Sanskrit, Gujarati, English and Science subjects. As well as it was found that the linear correlation between whole-brain dominant girls and their Mathematics achievement was significant.

KEYWORDS: “Style of Learning and Thinking” (SOLAT), Brain Hemispheric Dominance, Academic Achievement & Pearson's Product-Moment linear Correlation

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INTRODUCTION

Learning style has different ways or approaches but all these ways are very simple. Education methods are involved in these approaches where the main motive is to learn best about the styles. It is an assumption that most of the people favour some specific approaches namely processing information or stimuli, taking in as well as interacting with. In the 1970s, due to this concept, the “learning styles” idea was originated and in recent years, it has gained so much popularity among boys and girls. Learning styles are based upon consistent pattern's nature along with performance that helps every individual to achieve the educational experiences.

It is a mixture of characteristic like physiological, effective as well as cognitive nature which helps everyone that how they respond, interacts as well as perceive to the environment of learning style (Bennett, 1990). “Styles depend upon cerebral dominance of an individual in retaining and processing different modes of information in his style of learning and thinking. The style indicates the hemispheric function of the brain and students learning strategy and information processing are based on the preferences of the brain area”. (Venkataraman, 1990). “Hemisphericity” is intellectual supremacy of a person that helps to retain and process the information modes on their own learning styles. (Raina, 1984). In the human body, the brain is the most significant

part. It is the only part that orders all the other parts of the human body. In the 1960s, Roger W. Sperry the psychologist of America developed the left brain and the right brain thinking concept from his research work. He found in his research that the human brain has two various thinking ways. Likewise, Evans (2010) stated in this particular study that there are two different hemispheres of the human brain named as the left brain and right brain that has different thinking ways. Right brain first sees the complete picture, visualize the details and process the information in simultaneous as well as intuitive way. Alternatively, the left brain first sees the piece of the picture and verbally put them to get the complete picture and process the information in sequential as well as analytical way.

(Springer & Deutsch, 1993, McCarthy, 1996; Bradshaw & Nettleton, 1981) to process the exact information by the right/left brain or a combination of both is the tendency of brain hemisphericity. It was found from researches that the left brain hemisphere works in a sequential as well as linear manner with propositional, analytical along with logical opinions. Alternatively, the right brain hemisphere works in a simultaneous or nonlinear manner with fantasy, dreams along with non-verbal information. (Torrance, 1988, Springer & Deutsch, 1993, Ehrman & Lavine 1991, Oxford, 1996, McCarthy, 1996, Iaccino, 1993).

(Fitzerald & Hattie, 1993, Gazzaniga, 1990, Bogen, 1989) From the previous year's research it was found that the left brain hemisphere is dedicated for digital operations, temporal, abstract, analytical as well as primarily verbal. Instead, the right hemisphere of the human brain is to be specific for thinking and different learning styles, aesthetic, creative, concrete, non-verbal holistic as well as analogical functions. But the education learning techniques are mismatched. The thinking, as well as the learning style of a student, differs from the teacher's thinking and teaching style due to teacher's variations aren't linked as much as the comprehension capabilities of students. The variations inside inclination of two hemispheres for processing of information were called forms of SOLAT by Torrance. Every style is a tendency, notability.

They're the methods of blowing the intellect that in turn a private finds comfy. Thinking and learning styles are very significant for the levels of ability as well as we cannot ignore them for the development of student at appropriate/early age. It's primary essential for the guide or teacher to concentrate on the focus of their student's favoured style of thinking just before imparting the subject issue in case they neglect to perform so; the effects might be severe since the teacher might be inclined to mistake kinds of students imagination. In case mismatch can be found in between the teachers preferred type with the style of the student, these students are generally attended to uninterested within the for content material, really feel bored as well as refuse the activity of learning style. Consequently, it's crucial for the teacher to understand the student's desirable types or learning/thinking styles.

Learning Style and Brain Hemispheric Dominance

Every individual learns and thinks differently with various methods. So the theory of Brain hemispheric dominance explains how learning is affected by thinking. Kor and Ali (2007) declare, "Cognitive neuroscientists generally held that brain hemisphericity or brain dominance is the preference of an individual to process information through the left hemisphere, the right hemisphere or in combination" 1999.

Roger Sperry the winner of Nobel Prize conducted research of split brain on the epilepsy patients in 1960s. (Mifsud & Kemm, 2004, Herrmann, 1996) after this research, it was found that the brain was basically made up of two hemispheres that control the various functions of a human body. This research leads the concept of left/right human brain as well as the various functions of the left or right hemisphere of the human brain. Succeeding, neuroscientist, Paul

MacLean as well as Dr. Sperry's findings found that the human brain has 3 main functions. (Herrmann, 1996) The model of the triune brain was first developed by MacLean. The neocortex, the mammalian brain as well as the reptilian brain were the 3 main functions of the human brain. In his model of the triune brain, MacLean's said that for higher thinking the neocortex function of a human brain was used, for emotions, the mammalian brain function was used by the human brain and last for basic survival functions reptilian brain was used mostly.

The whole-brain model was developed by Ned Herrmann in mid of the 1970s. Herrmann started to be enthusiastic about the brain-based upon the interest of exactly how imagination originates inside a man getting (Herrmann, 1996). The model of Herrmann's was created largely through the effort achieved by Roger Sperry as well as Paul MacLean. "Herrmann blended the theory of split-brain found by Dr. Sperry together with the triune brain model developed by Dr. MacLean to cultivate his model of four quadrants whole brain (Herrmann, 1996)."

The theory of Brain hemispheric dominance which implies that a few learners are usually much more left hemispheric dominating as well as find out logically and sequentially while some other learners tend to become more correct hemispheric dominant as well as choose to learn in a visual or spatial method. As cited in Saleh (2001), "Research has demonstrated that students are capable of mastering new skills if they are taught through instructional methods that complement their hemispheric preference". (Kajs et al., 2002) In case someone accepts the idea of the theory, the inference is which program styles have to add in educational methods which activate each hemisphere on the human brain at an attempt to enhance pupil learning. Adu-Febiri (2002) suggested, "Diversity in learning exists in the classroom and if not well facilitated frustrates both learners and teachers, despite this situation, most classrooms continue to experience monolithic approaches to learning".

Depending on the clarifications coming from the past literature determine about the style of learning may very well be enhanced when classes are intended within a fashion that will permit the learner to have interaction with a percentage on the study course articles created to satisfy the brain of their hemispheric dominance inclination, but additionally test them to master material away from their ideal mental faculties hemispheric dominance.

Hemispheric dominance principle suggests exactly how individuals choose learning is dependent on the hemisphericity of brains. Hemispheric dominance describes the ideal component of the human brain getting used when some information is processed. Several individuals are more left hemispheric dominating, referred to as left brain, while various other individuals are more right hemispheric dominant. Nevertheless, others are competent to make use of each side of the brain holistically or maybe the whole brain (Saleh, 2001). An evaluation of the literature definitely recognizes the level of hemisphericity of the brain differs by individual. A good example supporting the idea happens when 2 individuals that are correct hemispheric dominating don't get exactly the similar kind of information within an equivalent fashion as a result of their different amounts of dominance to the right brain hemisphere. Adu Febiri (2002) mentioned that "most university instruction is geared for abstract sequential learning". Lowery (1998) adds, "Teaching methods such as lecture, demonstration, and textbook narrative as only minimally impacting the many avenues to the brain and learning". Buzan (1991) argues that the brains' left hemisphere is that where "the so-called 'academic' activities" occur mostly. Herrmann (1996) additionally discovered that when program executives have been engaged within the design, the design of the study course was directly cantered to the mastering tastes of the study course leader. Because the course design was directly focused entirely on the mastering tastes of the study course leader, learners with varying mastering tastes compared to which of the course leader will have better trouble comprehending the study course materials. Herrmann

(1996) determined that strategic use of left along with best hemispheric dominating things to every secret mastering factor produce a whole-brained mastering atmosphere which accommodates each learner.

Reardon (1998) states in his brain-compatible learning research work, "Through discovery, risk-taking, and exploration the brain seeks to make meaning of the experiences it faces. The degree in which it engages in inquiry and experimentation is the degree to which real learning occurs". Gregory and Parry (2006) said that "In simplest of terms, the right hemisphere takes in great gulps of information, and the left hemisphere analyses and sorts that information". Analysis, reasoning, words, numbers, linearity, as well as logic, are the main "function of the left hemisphere" of the human brain (Buzan, 1991). The left brain hemisphere was categorized by Leng and Tin (2002) as "verbal, sequential, analytic, symbolic, abstract, temporal, digital, logical, and linear". Cognitive, mathematical, systematic, judgmental as well as detailed was included in left brain hemisphere dominance. In most of the people, some functions like map or pattern recognition, color, imagination, imagery, rhythm have been found in the right brain hemisphere (Buzan, 1991). The right hemisphere of the brain was proposed by Leng and Tin (2002) as "visual, spatial, holistic, intuitive, synergistic, and non-verbal". Liu and Ginther (1999) conclude, "left-hemispheric students are strong in analytical thought processing, while right-hemispheric students are visual processors". By an educational style viewpoint, left hemispheric dominating learners generally choose a sequential program layout in which the educational written content is textual as well as audio tracks dependent. The standard chapter way of planning books is followed by this particular framework. Right hemispheric dominating learners generally choose a far more spatial program layout in which the educational written content is video-based and graphic-based more. This particular framework would much more strongly adhere to a principle chart system in which the study course is put in place such as a guide.

Saleh (2001) reported in his research work as cited inside a report which explores exactly how hemisphericity of the brain affected the main academic options of learners, "Studies revealed that brain hemisphericity greatly influences the individual's learning style and all kinds of intellectual and personality characteristics." Previously analyses which learners predominantly select academic majors which are agreeable with the styles of thinking as well as learning were supported by the results of Saleh's analysis. While everyone has their very own ideal dominating the styles of teaching as well as learning, a number of definitions of mastering design are located when going over present literature. Style of learning while the mode by which learners focus on, procedure, internalize, as well as remember difficult and new information (Dunn, Denig, and Lovelace, 2001; Heiman, 2006) is denoted by one particular description. Dunn and Honigsfeld (2006) describe the Style of learning concept as "a biological and developmental set of personal characteristics that make the identical instruction effective for some students and ineffective for others".

Keefe (1979) defined, "Learning styles can be defined as a set of cognitive, emotional, characteristic and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment". The definitions of learning style stick strongly with just how Ned Herrmann defined brain dominance. In an interview carried out around December 1982 by Associate Editor Elizabeth Shey Gorovitz coming from the Development as well as Training Journal with Ned Herrmann in relation to the newest theories of his on "applied creativity," Herrmann theorizes the characteristics related to an individual's specific brain hemisphericity will impact exactly how that individual likes to think as well as learn (Gorovitz, 1982).

McCarthy (1987) supposed that there are four kinds of learners (dynamic, good sense, analytic as well as innovative) in connection with two distinct right/left brains modes. Likewise, Solomon and also Felder (2001) categorised

learners in 4 distinct domains based on their styles of learning. The four domains include sequential-global learners, visual-verbal learners, sensing-intuitive learners as well as the active-reflective learners.

Right now there are already numerous efforts designed to improve students' academic advancements. It's constantly been the primary problem of numerous committed parents and guides that the student of theirs, as well as kids, be much effective as practical. With relation to this, numerous teachers believe that students want the beneficial frame of mind to achieve success academically. Usually, one's thinking style is determined to figure out strengths for academic accomplishment. Dunn, Klavas, and Beaudry (1989) state that, through large scientific studies, it's been suggested that each average and low achievers generate better scores on standardized accomplishment as well as mindset assessments when they're instructed inside the realm of their mastering type. Chuah Chong Cheng (1988) covers the benefits of learning/ thinking styles for being not just required, but additionally essential for people in academic ways.

The majority of students favour understanding learning style methods with every type of mastering adding towards the good results found keeping what they've learned. As a result, research completed determine that 90% of students, whatever they say but never do, 70% of students, whatever they say they do, 50% of students, what they hear as well see, 30% of students whatever they see, 26% of students, whatever they hear and only 10% of students, whatever they read (Chuah Chong Cheng 1988). From these facts, it is revealed that every thinking, as well as learning styles, has their drawbacks as well as strengths. Many students learn only one or two methods whereas there are many students who learn in many methods. All those students with a number of learning styles have a tendency to acquire additional and after that get better scores when compared with people who depend entirely on just one outfit (Beaudry, Klavas and Dunn 1989). Furthermore, the variations within learning styles are also found in among gifted and also the underachievers; among the learning disabled as well as typical achievers; between various kinds of unique training students; and also involving secondary students to come down with extensive facilities as well as the alternatives of theirs to come down with manufacturing arts and vocational education (Dunn and Dunn 1986).

Learning Style and Academic Achievement

Some Kinaesthetic instruction like hands-on, active, experiential is followed by a few of specific students where some students are more involved visually oriented as well as auditory (Dunn 1991). Dunn and Dunn (1986) additionally think that lower achievers generally have bad auditory remembering. By using the traditional method of teaching in the classroom which means that the teachers will dictate and students are supposed to read or listen, makes the students under-achiever because of the methods of lecture or reading or discussion, even when they wish to achieve well in the school. It's not just the lower achievers understand in a different way as a result of the top achievers, additionally, they differ between themselves. Impulsive students for an example, in comparison with reflective types, display very poor academic accomplishment (Kagan and Kagan, 1970). Various other scientific studies reveal that students of Field Independent attain more as compare to Field Dependent versions (Chapelle 1995). Research additionally show that matching learning, as well as teaching styles, could substantially improve academic accomplishment on the secondary and primary levels of schooling (Renzulli and Smith 1984). Felder (1995) said that students understand much more when info is available within an assortment of tactics compared to when just one strategy is used. Significantly experiential investigation suggests that styles of learning may either hinder or even enhance academic functionality within a number of factors (Riding & Cheema 1991). A research was conducted by Humera (2015) "A study of hemispheric dominance and Mathematics achievement of Xth standard students of Aurangabad city".

The main aim of this research work is to find the student's hemisphere dominance, make a comparison among hemisphere dominances of thinking as well learning styles to student's mathematics achievement and also make a clear comparison of Mathematics achievement among Boys and girls. In this research work around 150 students of Xth standard was selected by Stratified Random Sampling technique in Aurangabad City. Dr. D. Venkataraman developed a tool name as SOLAT (style of learning and thinking) and he used this tool in his research work to measure the students' learning style. For Maths accomplishment scores of SSC examination had been considered. It was found by research work that most of the students have the thinking as well as learning hemispheric dominant styles. Not even a single significant variation was discovered among Mathematics accomplishment of with appreciate to various thinking as well as learning hemispheric dominating styles. Along with that not even a single significant variation was discovered among Mathematics accomplishments of Boys as well as girls.

OBJECTIVES OF THE STUDY

- To measure the significant linear correlation among the learning style as well as achievement in various subjects of IXth standard students.
- To study the significant linear correlation among the learning style as well as achievement of IXth standard students in the context of gender.

HYPOTHESES OF THE STUDY

- There will be no importance of linear correlation among the learning style along with the achievement of students in various subjects.
- There will be no importance of linear correlation among the learning style as well as the achievement of students in the context of gender.

POPULATION

The students studying in Gujarati medium secondary schools in the academic year 2018–2019 of standard IX in Anand Taluka of Anand district were considered as a population of this study.

SAMPLE

The present research work was conducted based on a total 115 sample sizes of IXth standard students of Anand High school, Anand. The present study conducted using the survey method and students currently studying in Gujarati medium secondary 1schools of Anand district in standard IX was considered as the population of the study. The sample is selected using Random sampling technique.

METHODS

In this current research work, the Correlational research method is used. This research method is applied to study the linear correlation among learning style along with the students' academic 1achievement. The research work was conducted on a final sample of 115 students of standard IXth of Anand High school, Anand. The sample was selected randomly. The quantitative research method is used for data analysis. In Data analysis, Pearson's product-moment correlation is used.

The Tools has been used following Areas

- “Styles of Learning and Thinking” (SOLAT): In 1993, Dr. D. Venkataraman developed SOLAT tool which was published by “Psy-Com Service, Delhi”. This particular tool is created for schooling kids from the eighth standard format as well as university students, along with comprised of hundred things based on investigating results related to the special features of right hemispheres and the left. Every product supplied the respondent has three choices one that represents a special feature of left brain hemisphere the next that represent a parallel particular function of right brain hemisphere, as well as the 3rd, is checking out of both products that represent the integration of appropriately as well as remaining hemisphere operates. These particular questionnaire methods calculate hemisphere of the right brain, the hemisphere of the left brain as well as both dominating feature of the learning styles of students. The questionnaire was split into 2 parts. First, learning styles and second is thinking styles. Interest, Learning preference, Class preference, Content preference as well as Verbal were the five constructs of Learning Style. It had 25 statements that defined the learning styles wherein for Interest there were 5 statements, for learning preference there were 5 statements, for Class preference, there were 5 statements, for Content preference there were 5 statements as well as for verbal there were also 5 statements. Imagination, Problem-solving, Creativity, Convergent/ Divergent as well as Logical were the five constructs of Thinking Style. It had 25 statements that defined the Thinking Styles wherein for Imagination there were 5 statements, for Problem-solving, there were 5 statements, for Creativity, there were 5 statements, for Convergent/ Divergent, there were 5 statements as well as for Logical, there were also 5 statements. 0.89 was the correlation reliability coefficient for the function of the right hemisphere. 0.65 was the correlation reliability coefficient of the left hemisphere function. 0.71 was the correlation coefficient for the function of the integrated score. These coefficient claims that dependability is possessed by the SOLAT to a major significant level. The concurrent validity located by the correlation. The correlation among the 2 examination scores was 0.842 for the component of right hemisphere; 0.621 with the components of the left hemisphere as well as 0.678 for that incorporated factor. Within the questionnaire, every declaration was split into 2 parts 'A' and 'B'. For each and every declaration respondent need to react by choosing 'A' / 'B' / 'Both A & B'. 'A' means functions of right hemispheric, 'B' means functions of left-hemispheric and 'Both A & B' means functions of entire hemispheric. For that scoring matter amount of claims responded in 'Both A & B', only 'B' as well as only 'A'. Test takers required to show what of 3 particular kinds of contemplating and also styles of learning/thinking discussed in relation to the own their regular behaviour.
- Second internal exam test scores used as an achievement of students: The SOLAT test was provided to the students to measure their learning style and the second internal exam scores were collected from their subject teachers which were considered as their achievement. Data thus collected were tabulated and analyzed with the use of Pearson's product-moment linear correlation.

RESULTS

The correlation among right hemispheric dominance score as well as students' academic achievement in various subjects was found in following order: Sanskrit (0.2291), Gujarati (0.1615), Science (0.1492), Social science (0.1484), Mathematics (0.1317), Hindi (0.0902), and English (0.0689). The highest correlation among this achievement was found in Sanskrit subject. The p-value is 0.048. So, the linear correlation among these was found in Sanskrit is significant. ($p < 0.05$).

But the linear correlation among these was found in other subjects i. e. Gujarati, Hindi, Mathematics, Social science, Science and English is not significant. ($p > 0.05$).

The correlation among left hemispheric dominance score as well as students' academic achievement in various subjects was found in following order: English (0.2988), Sanskrit (0.2266), Hindi (0.2124), Gujarati (0.1482), Social science (0.1256), Mathematics (0.0822) and Science (0.0651). The highest correlation among these was found in the English subject. The p-value is 0.1767. The linear correlation among these was found in all subjects i. e. Gujarati, Hindi, Mathematics, Social science, Science, Sanskrit, and English is not significant. ($p > 0.05$).

The correlation among whole brain dominance score as well as students' academic achievement in various subjects was found in following order: Gujarati (0.3265), Hindi (0.3162), English (0.2284), and Social science (0.1831), Mathematics (0.1650), Sanskrit (0.1040) and Science (0.0611). The highest correlation between whole brain dominance score and academic achievement is found in Gujarati subject. The p-value is 0.1860. The linear correlation between whole brain dominance and academic achievement in all subjects i. e. Gujarati, Hindi, Mathematics, Social science, Science, Sanskrit, and English is not significant. ($p > 0.05$).

Table 1: Data Analysis of the Linear Correlation among the Learning Style as well as Students' Academic Achievement in Various Subjects

Subjects Brain Dominance	Gujarati	English	Sanskrit	Hindi	Social Science	Science	Mathematics
Right hemi-spheric dominance	0.1615	0.0689	0.2291	0.0902	0.1484	0.1492	0.1317
	0.1661 p-value →	0.5565	0.048	0.4411	0.2035	0.2011	0.2598
Left hemi-spheric dominance	0.1482	0.2988	0.2266	0.2124	0.1256	0.0651	0.0822
	0.5102 p-value →	0.1767	0.3103	0.3425	0.5773	0.7734	0.7159
Whole brain dominance	0.3265	0.2284	0.1040	0.3162	0.1831	0.0611	0.1650
	0.1860 p-value →	0.3619	0.6813	0.2011	0.4668	0.8095	0.5127

Table 2: Data Analysis of the Linear Correlation among the Learning Style as well as Boys' Academic Achievement

Subjects Brain Dominance	Gujarati	English	Sanskrit	Hindi	Social Science	Science	Mathematics
Right hemi-spheric dominance	0.1286	0.1188	0.1632	0.0220	0.0616	0.0258	0.0929
	0.3836 p-value →	0.4209	0.2676	0.8819	0.6772	0.8616	0.5299
Left hemi-spheric dominance	0.0604	0.3653	0.0697	0.2314	0.0597	0.0803	0.0833
	0.8681 p-value →	0.2992	0.8480	0.5200	0.8698	0.8253	0.8188
Whole brain dominance	0.2437	0.1375	0.0876	0.3328	0.0342	0.0841	0.2845
	0.4222 p-value →	0.6539	0.7759	0.2665	0.9115	0.7845	0.3460

The correlation among right hemispheric dominance score as well as students' academic achievement in various subjects was found in following order: Sanskrit (0.1632), Gujarati (0.1286), English (0.1188), Social science (0.1484),

Mathematics (0.1317), Hindi (0.0902), and English (0.0689). The highest correlation among these was found in the Sanskrit subject. The p-value is 0.2676. So, the linear correlation among there was found in all subjects i. e. Gujarati, Hindi, Mathematics, Social science, Science, Sanskrit, and English is not significant. ($p>0.05$).

The correlation among left hemispheric dominance score as well as students' academic achievement in various subjects was found in following order: English (0.3653), Hindi (0.2314), Mathematics (0.0833), Science (0.0803), Sanskrit (0.0697), Gujarati (0.0604) and Social science (0.0597). The highest correlation among these is found in the English subject. The p-value is 0.2992. The linear correlation among these is found in all subjects i. e. Gujarati, Hindi, Mathematics, Social science, Science, Sanskrit, and English is not significant. ($p>0.05$).

The correlation among whole brain dominance score as well as students' academic achievement in various subjects was found in following order: Hindi (0.3328), English (0.2284), Mathematics (0.2845), Gujarati (0.2437), English (0.1375), Sanskrit (0.0876), Science (0.0841) and Social science (0.0342). The highest correlation between whole brain dominance score and academic achievement is found in Hindi subject. The p-value is 0.2665. The linear correlation between whole brain dominance score and academic achievement in all subjects i. e. Gujarati, Hindi, Mathematics, Social science, Science, Sanskrit, and English is not significant. ($p>0.05$).

Table 3: Data Analysis of the Linear Correlation among the Learning Style as well as Girls' Academic Achievement

Subjects Brain Dominance	Gujarati	English	Sanskrit	Hindi	Social Science	Science	Mathematics
Right hemispheric dominance	0.4070	0.4650	0.4991	0.2737	0.3419	0.4035	0.2299
	0.0351 p-value→	0.0145	0.0080	0.1670	0.0808	0.0368	0.2486
Left hemispheric dominance	0.0460	0.0096	0.0156	0.0428	0.0937	0.0629	0.0434
	0.8868 p-value→	0.9762	0.9615	0.8948	0.7720	0.8458	0.9720
Whole brain dominance	0.0200	0.5354	0.1580	0.0721	0.1986	0.2121	0.3734
	0.9744 p-value→	0.3524	0.7996	0.9082	0.7487	0.7319	0.0099

The correlation among right hemispheric dominance score as well as students' academic achievement in various subjects was found in following order: Sanskrit (0.4991), English (0.4650), Gujarati (0.4070), Science (0.4035), Social science (0.3419), Hindi (0.2737) and Mathematics (0.2299). The highest correlation among these is found in the Sanskrit subject. The p-value is 0.008. The linear correlation among these is found in Sanskrit, Gujarati, English, and Science are significant. ($p<0.05$). But the linear correlation among these is found in other subjects i. e. Hindi, Social science and Mathematics is not significant. ($p>0.05$).

The correlation among left hemispheric dominance score as well as students' academic achievement of students in various subjects was found in following order: Social science (0.0937), Science (0.0629), Gujarati (0.0460), Mathematics (0.0434), Hindi (0.0428), Sanskrit (0.0156) and English (0.0096). The highest correlation among these is found in Social science subject. The p-value is 0.7720. The linear correlation among these is found in all subjects i. e. Gujarati, Hindi, Mathematics, Social science, Science, Sanskrit, and English is not significant. ($p>0.05$).

The correlation among whole-brain dominance score as well as students' academic achievement in various subjects was found in following order: English (0.5354), Mathematics (0.3734), Science (0.2121), and Social science (0.1986), Sanskrit (0.1580), Hindi (0.0721) and Gujarati (0.0200). The highest correlation between whole brain dominance score and academic achievement is found in English subject. The p-value is 0.3524. The linear correlation between whole-brain dominance and academic achievement in all subjects i. e. Gujarati, Hindi, Social science, Science, Sanskrit and English except Mathematics ($p < 0.5$) is not significant. ($p > 0.05$).

Limitations of the Study

- The research was conducted on the selected Anand taluka students only.
- The study was conducted with the use of "Styles of learning and thinking" (SOLAT) test only.
- The study was conducted using survey techniques.
- In this research, the sample is selected by random sampling method.
- In this research work, the linear correlation among learning style as well as the academic achievement was found using Pearson's product-moment correlation.

Delimitations of the Study

- This research was surrounded by only Gujarati Medium School students.
- This research was surrounded by IXth standard students.
- This research was delimited to students studying in the 2018-2019 academic year.
- This research was delimited to randomly selected 115 students of Anand high school, Anand,
- This research was delimited to academic achievement scores of second internal exam of students.

DISCUSSIONS

The result shows that there is no linear correlation among the learning style along with students' achievement in various subjects. So this is the unique study which describes the correlation among learning style as well as students' academic achievement in various subjects. Up to some extent, this study supports the findings of Humera (2015) in which no significant difference was found among students' Mathematics achievement with respect to the various hemispheric dominant thinking as well as learning style. Her study was delimited to mathematics achievement only. But in the current research work, the achievement scores of all the subjects were considered to find out the linear correlation among learning style (brain hemispheric dominance) as well as students' academic achievement.

CONCLUSIONS

This study concludes that in the gender context IXth standard girl's students who are dominated through right brain hemisphere shows higher academic achievement than the students who dominated through left brain hemisphere. This means that the right brain hemisphere functions like Visual patterns, Facial Identification, Motor, Dreams, Creativity, Imagery, Music, and Problem are taken care of well by the students under investigation. It doesn't mean that the functions of left hemisphere of brains like Language, Speech, Learning and Analytical thinking are not taken care of by the present

system of education but rather students under investigation perform more through right hemisphere but the boys students do not shows the linear correlation among students' academic achievement along with learning style.

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