



## Cerebro-Soft Skills of Higher Secondary Students

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**ABSTRACT:** This study aimed to investigate the Cerebro-soft skill of higher secondary students which leads to whether the brain dominance of the students influences their thinking or thinking pattern and which leads to show, the problem-solving skills of the individual or not? This may have the possibility of predicting the creation of unified thinkers or a unique pattern of the people on its own. Cerebro-soft skills (Brain dominance, thinking styles and problem-solving skills) among higher secondary students do have an impact on their academic achievements. This study targeted the higher secondary students as population and Kanyakumari, Tirunelveli, Thuthukudi and Virudhunagar districts of Tamilnadu, India as the areas from which the data was collected. In this research, the above-mentioned population consisted of 135 subjects for this study. Three unique questionnaires were used to collect the data i.e., the Cognitive style questionnaire (1989) by Loren D. Crane, thinking styles by Robert J Sternberg (2009) and Problem-solving skills by Vengo Regis and Annaraja (2010). The result of the study revealed that the significant impacts found with the residence of the students in their intuitive problem-solving skills and medium of instructions of the students in their right brain dominance, and type of schools of the students in their right brain dominance, sensing problem-solving skills and thinking problem-solving skills, the significant positive correlation co-efficient found between oligarchic thinking style and anarchic thinking style, hierarchic thinking style and anarchic thinking style, monarchic thinking style and anarchic thinking style which was 64.4%, 46.9%, 44% and 35.8% respectively.

**KEYWORDS:** Anarchic thinking styles, Cerebro soft-skill, Feeling and thinking problem-solving skills, Higher secondary students, Hierarchic, Intuitive, Monarchic, Oligarchic, Right-brain dominance, sensing.

### INTRODUCTION

The term Cerebro soft skill is derived from the combination of cerebral and soft skills. In general human resources expertise listed out sixty soft skills which include different thinking and problem-solving skills or ability. The current study consists of students' right-brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem-solving skills of higher secondary students. These kinds of mentioned thinking styles and problem-solving skills are influenced by the brain activity of individuals. Here, the brain activities of the students are measured by the researcher as brain dominance. Thus the title exists. In this study, Cerebro soft skills play a significant role in students' life. In this current study, the researcher aims to find out how the Cerebro soft skills help the students to excel in their academic and also societal life. Educational institutions especially schools will have more prosperous if they train their students based on the Cerebro soft skills they have.

### REVIEW OF RELATED LITERATURE

Hergenhahn & Olson (2005) stated that body functions have been assigned to both cerebral lobes "evenly but in a crossed fashion". Right brain dominance is responsible for the creative; making the individual concrete, making the individual interpersonal, emotional, sensitive, and musical. (Clayton & Kimbrell, 2007, p. 924). The brain has two hemispheres that are assigned different functions. Tendero, (2000). Ali Soyoo et al. (2014) stated that right-brained learners are claimed to benefit from visual, auditory, holistic and non-linear information processing. Kok (2010), Simply put, the right hemisphere is in control of the left side of the body and the left hemisphere is in control of the right side of the body. Sensing, intuitive, feeling and thinking problem-solving skills are considered alternative builders for thinking styles. (Clayton & Kimbrell, 2007, p. 924). Learners having the first choice of using intuition and feeling are generally considered right-brain learners, and learners having the first choice of using intuition and thinking or sensing and feeling are generally considered moderate brain learners. (Power & Lundsten, 1997; Power, Kummerow, & Lundsten, 1999; Clayton & Kimbrell, 2007). Brown (2007) reports Torrance's study (1980) in which he stated several features of right-brain dominant learners that they are intuitive and remember faces easily, respond to demonstrated, illustrated or symbolic

instructions can experiment if needed and have less self-control, make subjective judgements, fluid and spontaneous; prefer elusive uncertain information; synthesizing readers; reliance on images in thinking and remembering; prefer drawing and manipulating objects; prefer open-ended questions; more free with feelings; good at interpreting body language; frequently use metaphors; favour intuitive problem-solving. Kolb (1979), MacCarthy (1996) and Saleh (1995) found that students mostly choose their field of study based on their hemispheric preferences. Ali Soyoo et.al (2014) draw out the statement based on their study that learning should be approached through using learning styles that best fit the learners' hemispheric preferences and while dealing with new information, both right and left brain dominance learners got benefit from the two hemispheres of their brain simultaneously and equally.

## SIGNIFICANCE OF THE STUDY

Now a day we follow the STEM or STEAM system of education and our prime significance is given to professional subjects by default but forget about the basement that is Cerebro-soft skills like brain dominance, thinking styles and problem-solving skills. Even though educators all over the world achieved what we are today. With the advancement of technology, and innovations we can attain a lot. Soft skills confide educators to achieve more in education. Despite various perspectives provided to the curriculum for the betterment of students and society, the level of the education of the students is not fulfilling the expectations. This is due to the lack of execution of soft skills of higher secondary students concerning their brain dominance, thinking styles and problem-solving skills that are Cerebro soft skills. If we modify the outcome of the learners in this stage and have to ensure a bright future and lifestyle of human resources, this should be coercion to add curriculum and execute Cerebro soft skills. Hence, this study signifies.

## THE PROBLEM OF THE STUDY

Cerebro soft skills of higher secondary students

### Operational definition of key terms

Cerebro soft skills refer to effective management of one's brain dominance and transforming their creative ideas through thinking styles and having the proficiency to solve problems by their nature in a novel way and get a permanent solution.

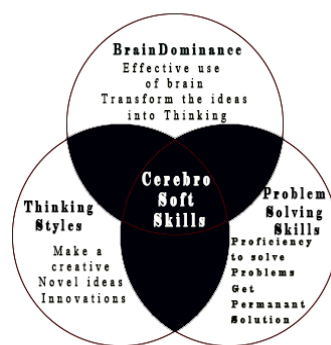


Fig.1. Diagram of Cerebro soft skills (Vengo Regis, 2022)

## METHODS AND PROCEDURES

Survey methods used in this study to collect the data from the higher secondary students

The following tools have been used for collecting the data

1. Cognitive styles questionnaire by Loren D Crane (1989)
2. Thinking styles by Robert J Sternberg (2009) and
3. Problem-solving skills by Vengo Regis and Annaraja (2010).

## ANALYSIS OF DATA

### Objectives

1. To find out the level of students in their Cerebro soft skills.



2. To find out whether there is any significant difference between the type of residences of students concerning the factor of Cerebro soft skills
3. To find out whether there is any significant difference between the medium of instructions of students concerning the factor of Cerebro soft skills.
4. To find out whether there is any significant difference among the type of management of students concerning the factor of Cerebro soft skills.
5. To find out whether there is any significant correlation co-efficient between the factors of Cerebro soft skills of students.

**Hypothesis**

1. There is no significant difference between home and hostel students concerning the factor of Cerebro soft skills. (Right brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles, sensing, intuitive, feeling and thinking problem-solving skills)
2. There is no significant difference between Tamil and English medium students concerning the factor of Cerebro soft skills. (Right brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles, sensing, intuitive, feeling and thinking problem-solving skills)
3. There is no significant difference among the type of management of students concerning the factor of Cerebro soft skills. (Right brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles, sensing, intuitive, feeling and thinking problem-solving skills)
4. There is no significant correlation co-efficient between the factors of Cerebro soft skill of students. (Right brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles, sensing, intuitive, feeling and thinking problem-solving skills)

**Hypothesis testing**

**Level of students in their Cerebro soft skills**

Variables	Low		Moderate		High	
	N	%	N	%	N	%
Right Brain Dominance	77	57	0	0	58	43
Monarchic Thinking Style	40	29.6	61	45.2	34	25.2
Hierarchic Thinking Style	34	25.2	58	43	43	31.9
Oligarchic Thinking Style	35	25.9	62	45.9	38	28.1
Anarchic Thinking Style	34	25.2	63	46.7	38	28.1
Sensing Problem Solving Skill	36	26.7	49	36.3	50	37
Intuitive Problem Solving Skill	34	25.2	64	47.4	37	27.4
Feeling Problem Solving Skill	44	32.6	54	40	37	27.4
Thinking Problem Solving Skill	38	28.1	57	42.2	40	29.6

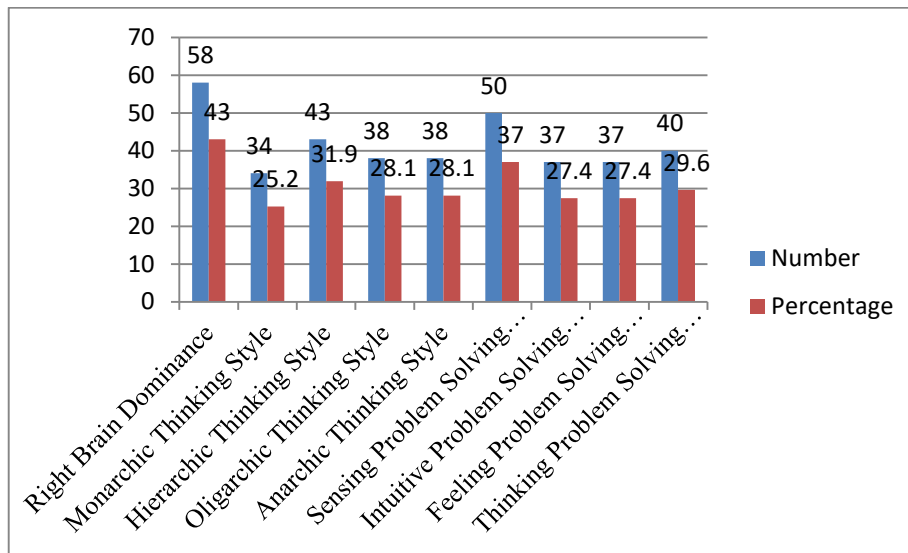


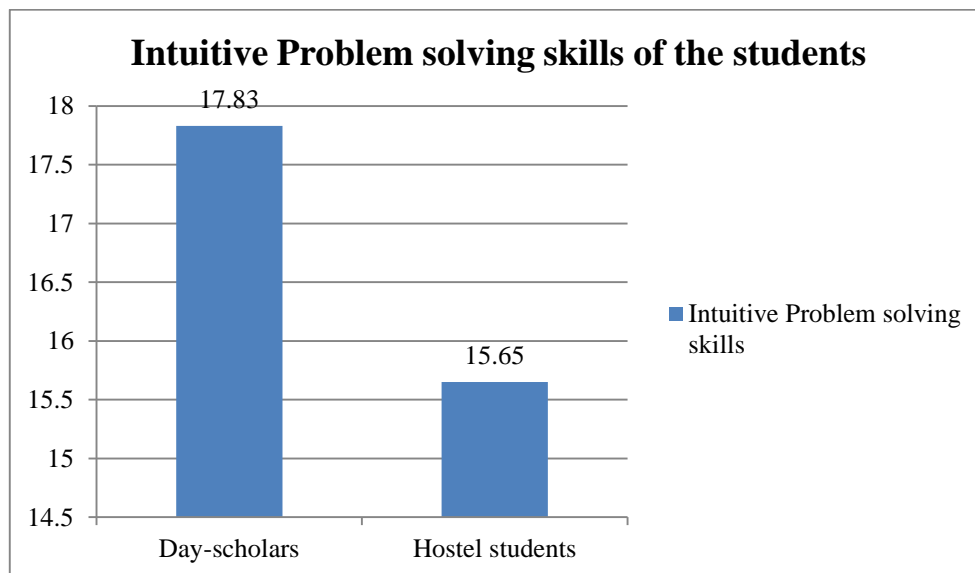
Fig.2. Level of students in their Cerebro Soft Skills

The above table shows that the level of Cerebro soft skills of the higher secondary students and 43% of the students have a high level of their right brain dominance Rajalakshmi and Veliappan (2015) found that 20.3% of the students possess a high level of right-brain dominance in their study and 25.2% of them have a high level in monarchic thinking style, 31.9% of them have a high level in hierarchic thinking style, 28.1% of them have a high level in their oligarchic and anarchic thinking style. 37% of them have a high level in their sensing problem-solving skill, 27.4% of them have a high level of intuitive and feeling problem-solving skills and 29.6% of them have a high level in their thinking problem-solving skills.

Ho.1. There are no significant differences between home and hostel students concerning the factors of right-brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem-solving skills

Variables	Residence				t-value	P-Value
	Home		Hostel			
	Mean	SD	Mean	SD		
Right Brain Dominance	15.39	1.02	15.38	1.23	0.018	<b>0.986</b>
Monarchic Thinking Style	31.04	5.58	29.76	5.36	1.16	<b>0.247</b>
Hierarchic Thinking Style	28.89	6.33	27.44	6.47	1.13	<b>0.258</b>
Oligarchic Thinking Style	26.71	6.40	26.85	6.63	0.109	<b>0.913</b>
Anarchic Thinking Style	28.38	6.16	27.00	6.01	1.13	<b>0.259</b>
Sensing Problem Solving Skill	17.00	3.27	15.91	4.56	1.28	<b>0.206</b>
Intuitive Problem Solving Skill	17.83	3.56	15.65	3.81	3.03	<b>0.003**</b>
Feeling Problem Solving Skill	16.35	3.97	15.32	4.11	1.28	<b>0.200</b>
Thinking Problem Solving Skill	16.90	3.89	17.24	3.44	0.445	<b>0.657</b>

1. \*\* denotes significant at 1% level
2. \* denotes significant at 5% level



**Fig.3.** significance difference between day scholar and hostel students in their intuitive problem-solving skill

There is no significant difference between day scholar and hostel students concerning the factors of right-brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking style and sensing, feeling and thinking, and problem-solving skills of the students since P-value is greater than 0.05. Hence, the null hypothesis is accepted at a 5% level of significance concerning factors of right-brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, feeling and thinking problem-solving skills of the students.

Since P-value is less than 0.01, the Null hypothesis is rejected at a 1% level concerning the factor of intuitive problem-solving skills of the students. Hence, there is a significant difference between day scholar and hostel students concerning the factor of intuitive problem-solving skills, based on the mean score, day scholar students have better ( $M=17.83$ ) in their intuitive problem-solving skills than hostel students ( $M=15.65$ ) because, individuals those who have been in intuitive skills, they have the characteristic features of ability to think of their future life or feel about the past lives and not have to cheer with the present life they live. In this higher secondary stage almost they are in teen ages, in these tough times hostellers don't have the time to feel about the above-mentioned points because in hostel time-table followed by strict rules and regulations according to the school timing. Students continuously engaged with that timetable too. So, they have less time for recreation or no time to spend time on the above mentioned reasonable points. But, in day scholars it is all possible to feel it and achieve it. Intuitive problem solving skilled individuals are highly interested in everything new and achieving that in unusual ways, this is highly boon for day scholars to get engaged in the new things whenever they wanted to do it. But, in hostellers such changes which may not be possible to do it. One of the important features of this category is, that individuals do not like routine work and do not get engaged with learning by doing but they have the capacities to enjoy the theoretical life and habitually they have the doubts about whichever they handle which may be subjected, handling electronics, machines, discussing new concepts etc. These changes may not be got by the hostellers in their hostel life, but in day scholars whatever the individual wanted to do they do. Thus, the day scholar students (students from home) are better than the hostel students in intuitive skills.

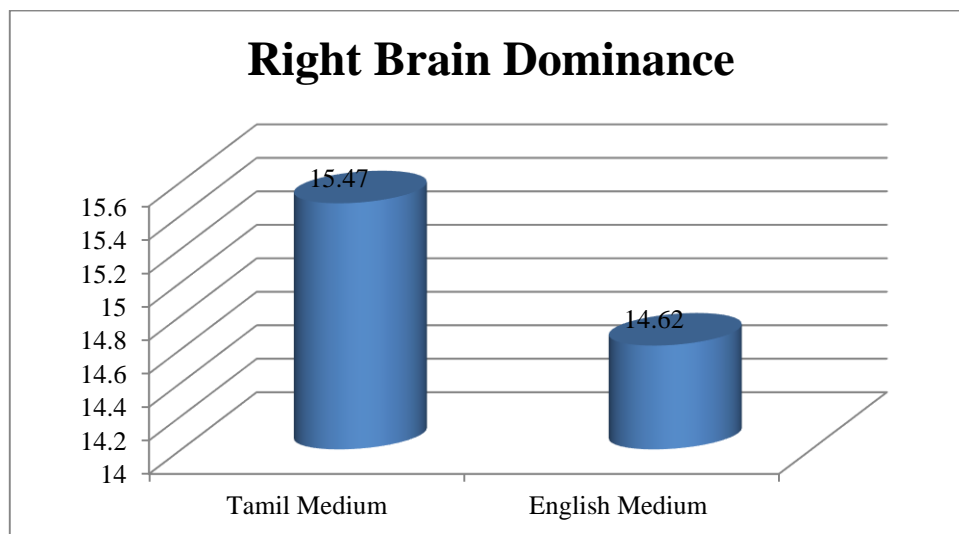
Ho.2. There are no significant differences between Tamil and English medium students regarding the factors of right-brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem-solving skills



**Table.** A significant difference between Tamil and English medium students regarding the factors of right-brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem-solving skills

Variables	Medium of Instruction				t-value	P-Value
	Tamil		English			
	Mean	SD	Mean	SD		
Right Brain Dominance	15.47	1.06	14.62	0.768	2.79	<b>0.006**</b>
Monarchic Thinking Style	30.57	5.59	32.15	4.96	0.982	<b>0.328</b>
Hierarchic Thinking Style	28.44	6.65	29.31	4.19	0.661	<b>0.517</b>
Oligarchic Thinking Style	26.67	6.51	27.46	5.93	0.419	<b>0.676</b>
Anarchic Thinking Style	28.07	6.15	27.69	6.18	0.208	<b>0.836</b>
Sensing Problem Solving Skill	16.64	3.65	17.54	3.71	0.843	<b>0.401</b>
Intuitive Problem Solving Skill	17.11	3.74	18.92	3.32	1.67	<b>0.096</b>
Feeling Problem Solving Skill	16.06	4.09	16.38	3.30	0.278	<b>0.781</b>
Thinking Problem Solving Skill	17.12	3.75	15.69	3.88	1.30	<b>0.196</b>

1. \*\* denotes significant at 1% level
2. \* denotes significant at 5% level



**Fig.4.** Significance difference between Tamil medium and English medium students in their Right brain dominance

There is no significant difference between Tamil medium and English medium students concerning the factors of monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem-solving skills of the students since P-value is greater than 0.05. Hence, the null hypothesis is accepted at a 5% level of significance concerning factors of monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem-solving skills of the students.

Since P-value is less than 0.01, the Null hypothesis is rejected at a 1% level concerning the factor of right-brain dominance of the students. Hence, there is a significant difference between Tamil medium and English medium students concerning the factor of right-brain dominance, based on the mean score, Tamil medium (M=15.47) students have better in their right brain dominance than English medium students (M=14.62) because creativity and novelty are one of the most significant unique features of right-brain dominance. Rajalakshmi and Veliappan (2015) conducted a study on brain dominance and learning styles of higher secondary students concerning academic achievement and the result supported the present study that Tamil medium students (M=50.57) have



better in their right brain dominance than English medium students (M=48.60). Creativity and knowledge and also use of one's intelligent quotient of subjects possess by the individuals when they got a clear understanding of getting anything by their mother tongue, here the students of Tamil medium got all the knowledge and instruction given by the teacher in the classroom as their mother tongue that is language Tamil. Madan Lal Kurre and Agashe (2012) found supportive evidence that the IQ of subjects possessing significantly higher in Right brain dominance compared to integrated brain dominance. Oflaz and Merve (2011) found the result that those right-brain dominant students who were good at responding and demonstrating instructions and visuals showed a good performance in the vocabulary part and good at writing part too. With the help of the mother tongue, one can easily understand the concept at their own pace and all their academic activities are executed effectively. Receiving, understanding and discussion are initiated when the concept is clearly understood by the individuals. Technical terms and terminology are also clearly understood and learned by the students through their mother tongue. Gadzella and Kneipp (1990) figure out that right-hemispheric learners develop the information that they got by nonlinearly and holistically. The above finding also supports the current study that Tamil medium is the mother tongue of the targeted students in this study and that findings highly justified the Tamil medium students are better in right-brain dominance. But, in the case of the English medium, even though the students may have English as their medium of instruction, study the lessons only for examination purposes and get marks alone. The understanding may be missed by the students with this medium of instruction. That's why Tamil medium students are better in their right brain dominance than English medium students.

Ho.3. There are no significant differences among the type of schools regarding the factors of right-brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem-solving skills

**Table.** Significant differences among the type of schools regarding the factors of right-brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem-solving skills

Variables	Type of Managements			F value	P value
	Government	Aided	Private		
<b>Right Brain Dominance</b>	14.75 <sup>a</sup> (1.07)	15.59 <sup>b</sup> (1.05)	15.36 <sup>b</sup> (1.00)	<b>5.040</b>	<b>0.008**</b>
<b>Monarchic Thinking Style</b>	30.20 (5.68)	30.59 (5.52)	31.16 (5.60)	<b>0.245</b>	<b>0.783</b>
<b>Hierarchic Thinking Style</b>	28.20 (4.77)	28.50 (6.65)	28.71 (6.87)	<b>0.044</b>	<b>0.957</b>
<b>Oligarchic Thinking Style</b>	26.50 (6.05)	26.14 (6.83)	27.80 (5.96)	<b>0.923</b>	<b>0.400</b>
<b>Anarchic Thinking Style</b>	27.05 (6.36)	27.77 (6.30)	28.87 (5.79)	<b>0.733</b>	<b>0.482</b>
<b>Sensing Problem Solving Skill</b>	18.40 <sup>b</sup> (2.87)	16.80 <sup>ab</sup> (3.76)	15.87 <sup>a</sup> (3.57)	<b>3.483</b>	<b>0.034*</b>
<b>Intuitive Problem Solving Skill</b>	18.25 (3.75)	17.50 (3.39)	16.51 (4.14)	<b>1.770</b>	<b>0.174</b>
<b>Feeling Problem Solving Skill</b>	15.60 (3.42)	16.37 (4.46)	15.87 (3.54)	<b>0.386</b>	<b>0.680</b>
<b>Thinking Problem Solving Skill</b>	15.25 <sup>a</sup> (4.15)	16.74 <sup>ab</sup> (3.84)	18.13 <sup>b</sup> (3.18)	<b>4.558</b>	<b>0.012*</b>

Note: 1. The value within the bracket refers to SD

2. \*\* denotes significance at a 1% level

3. \* denotes significance at a 5% level

4. Different alphabets among the age group in years denote significance at a 5% level using Duncan Multiple Range Test (DMRT)

**\*\* With DMRT**

Since P-value is less than 0.01, the Null hypothesis is rejected at a 1% level of significance concerning the factor of right-brain dominance of higher secondary students. Hence, there is a significant difference among the type of management of schools concerning the factor of right-brain dominance.



Based on Duncan Multiple Range Test (DMRT), the government school students significantly differ from aided and private school students at a 1% level of significance. The aided and private school students have significantly differed in their right brain dominance (Aided schools 15.59 (b), Private schools 15.36 (b)) than government school students (14.75) (a). But there is no significant difference between aided and private school students concerning their right-brain dominance. The curriculum of higher secondary education is updated with innovations. Here, the students in aided and private schools are significantly different from government schools in that such schools equipped themselves with modern infrastructures and modern language laboratories, science labs, smart classrooms and all. These are the main components preferred by the right brain dominance individuals. Students do practise solving the problems by following similarity of patterns in smart classes which is possible to do with all the students and encourage them to handle the objects, touch and feel science specimens in the modern science lab, with the help of the visual lab with internet connections. Moris (2015) found the result which supported the current study that individuals who belong to the right brain dominance can see the 3D image of what they perceived. Teachers do encourage them to discuss the current topics in education and science is possible and give rich learning experiences also done with handling augmented reality and virtual reality classrooms. Students who are in right-brain dominance may have the characteristics of colour appreciation; recognizing faces and creating new things based on their interests. By having a strong infrastructure, we can feed gluttonous education to them. These are all possible nowadays in aided and private schools because they updated modern classrooms as smart classes not only for competitions but also to serve good education to students. In the case of government schools, although they have qualified and experienced teachers, having a lack of experience in handling the innovation in education in their schools which leads to technophobia which may suppress right-brain dominance characteristics like imagination, rhythmic action, and visualization and intuition and all. In such a way, private and aided school students significantly differ from government school students, but there is no significant difference between private and aided school students in their right brain dominance. This finding contradicts the findings of the study conducted by Rajalakshmi and Veliappan (2015)

#### \* With DMRT

Since P-value is less than 0.05, the null hypothesis is rejected at a 5% level of significance concerning factors of sensing problem-solving skills and thinking problem-solving skills of students. Hence, there is a significant difference among the type of management of students concerning the factors of sensing problem-solving skills and thinking problem-solving skills.

Based on Duncan multiple range tests (DMRT) the private school students significantly differ from government school students at a 5% level of significance but, the aided school students do not differ from any other school students concerning sensing problem-solving skills. Government school students are significantly different from aided school students, in this stage, students sense everything with their academic life, which may be about their school assessment, competitions, examination etc. and they see everyone related to them. In government schools, teachers are encouraged the students to participate in extra-curricular and co-curricular works. Students in government schools have high comfort in the school environment and enjoy their world like here and now which is always got by themselves in government schools which they study. They have the mindset of easily accepting the situation that they have in their nature of the school and they easily adapt to modern classrooms and also teaching-learning in out of the classrooms. One of the sensing skilled people characters is they get pleasure, based on physical sensations. Students have the chance to overcome the hurdles like classroom stress through hi-fi themselves, by shaking hands inside the classrooms or at the sports and games period when compared to the other management schools, because they follow strict rules to maintain the discipline and always practice the silence among the classrooms and every time class monitor will keep watching the students and if anyone breaks the rule they may have changed by the teachers as in the form of fine or punishments. One of the key qualities of these sensing learners is they are practical and always active in their busy academic life. They are very true to their friends and peers and also much self-confident to do their work especially to do their academic practices. These are all easily gained by the individuals who got their learning in government school campus because now a day any school campus does not force the learners to follow the rules and regulations very strictly. But, in private school students may not have a chance to get all the above-mentioned features of sensing skills that which experiences on their campus. Due to this reason, government school students are significantly different in their sensing problem-solving skills than private school students.

In thinking problem-solving skills, the government school students significantly differ from private school students at a 5% level of significance but, the aided school students do not differ from any other school students concerning the factor of thinking problem-solving skills. Students always wanted to a near arrangement and are interested in a systematic approach and they wanted





to clear structures and patterns to follow in their academic activities. This kind of infrastructure with all kinds of educational setup shall install in private schools so the students may have the chance to experience those things in private schools. In private schools, students have the chance to expose anything related to their academic doubts with logic and they also need the same from the teachers too. With the help of the smart classroom, the teachers may have the ability to fulfil the needs and clear the doubts of their students rose inside the classroom and this is one of the thinking skilled individual features also they are occasionally showing surprisingly unemotional expression for some of their friends were just informed that you got the first mark in mathematics or school first, that is they are being in the chill and unemotional. As a thinking skilled individuals, they dare to approach all activities regarding their curricular and co-curricular activities in private schools and its classrooms intellectually and have the mentality of being right or wrong; even if it is their teachers or elders and most of the time they are in introvert so they have been facing difficulties to talk their problems and share their feelings to their neighbours. In such a time private schools have appointed a counsellor to eradicate such psychological problems but in government schools which may not possible because it has its procedure and they are straight forwarded, so they never wanted quarrel with anyone to achieve or get something. This may also solve by the private school management by conducting parent-teachers meet and share their opinion about their children with school teachers and infrastructure and all. This could maintain the ingenuous relationship between the private schools and students. So the private school students significantly differ from government school students and they are significantly higher in their thinking and problem-solving skill.

**No star with no DMRT**

There is no significant difference among the type of management of students concerning the factors of Monarchic, Hierarchic, Oligarchic, Anarchic thinking styles and Intuitive problem-solving skills and Feeling problem-solving skills, since the P-value is greater than 0.05. Hence, the null hypothesis is accepted at a 5% level concerning factors of Monarchic, Hierarchic, Oligarchic, Anarchic thinking styles Intuitive problem-solving skills and Feeling problem-solving skills. In this higher secondary stage, the academic goal that is getting a pass mark with a high percentage is the prime process. So, pupils may never be different in this higher secondary stage that is allowing them to think in different like monarchic, hierarchic, oligarchic and anarchic thinking styles and be innovative. Instead of creative thinking, they want to get high marks and their parents’ desire too, so they assign their work apart from the school as tuition and training centres to get high marks and this may be extended to intuitive and feeling problem-solving skills too.

Ho.4. There is no significant correlation co-efficient between the factors of right-brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem-solving skills of the students.

**Table.** Karl Pearson Correlation Coefficient between factors of right brain dominance, monarchic, hierarchic, oligarchic and anarchic thinking styles and sensing, intuitive, feeling and thinking problem solving skills of the students

Variables	RBD	MTS	HTS	OTS	ATS	SPSS	IPSS	FPSS	TPSS
RBD	1.00	-0.039	0.085	-0.084	-0.055	-0.102	-0.027	0.049	0.140
MTS	-	1.00	0.599**	0.579**	0.664**	0.002	0.183*	0.145	-0.167
HTS	-	-	1.00	0.522**	0.685**	-0.066	0.095	0.183*	-0.107
OTS	-	-	-	1.00	0.806**	-0.043	0.022	0.033	-0.103
ATS	-	-	-	-	1.00	-0.025	-0.002	0.090	-0.147
SPSS	-	-	-	-	-	1.00	0.285**	0.379**	0.036
IPS	-	-	-	-	-	-	1.00	0.478**	0.038
FPSS	-	-	-	-	-	-	-	1.00	0.063
TPSS	-	-	-	-	-	-	-	-	1.00

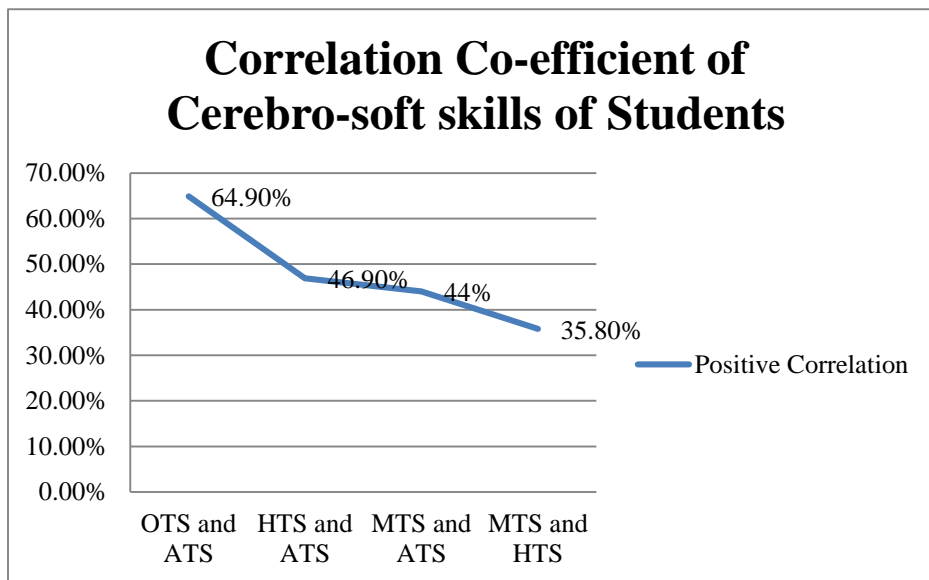
Note: \*\* denotes significant at 1% level

\* denotes significant at 5% level

RBD – Right brain dominance, MTS – Monarchic Thinking Style, HTS – Hierarchic Thinking style, OTS – Oligarchic Thinking style

ATS – Anarchic Thinking style, SPSS – Sensing Problem solving skill, IPSS – Intuitive Problem solving skill, FPSS – Feeling Problem

solving skill, TPSS – Thinking Problem solving skill



OTS: Oligarchic Thinking style  
 ATS: Anarchic Thinking Style  
 MTS: Monarchic Thinking Style  
 HTS: Hierarchic Thinking style

**Fig.5.** The positive Correlation coefficient between Cerebro soft skills of students

The correlation co-efficient between oligarchic thinking style and anarchic thinking style is 0.806 which indicates  $(0.806^2 = 0.649)$  **64.9** per cent positive relationships between oligarchic thinking style and anarchic thinking style and is significant at 1% level.

The correlation co-efficient between hierarchic thinking style and anarchic thinking style is 0.685 which indicates  $(0.685^2 = 0.469)$  **46.9** per cent positive relationships between hierarchic thinking style and anarchic thinking style and is significant at a 1% level.

The correlation co-efficient between monarchic thinking style and anarchic thinking style is 0.664 which indicates  $(0.664^2 = 0.440)$  **44.0** percentage positive relationship between monarchic thinking style and anarchic thinking style and is significant at a 1% level.

The correlation co-efficient between monarchic thinking style and hierarchic thinking style is 0.599 which indicates  $(0.599^2 = 0.358)$  **35.8** percentage positive relationships between monarchic thinking style and anarchic thinking style and is significant at 1% level and so on.

**RESULTS**

In this study of Cerebro soft skills of higher secondary students, it is found that right-brain dominance is one of the variables that have a significant difference in the medium of instructions and Tamil medium students are better than English medium students. In the type of school, significance found, aided and private schools are significantly different from government schools and better too in their right brain dominance. In problem-solving skills, a significant difference was found between home and hostel students. Day scholars are better at their intuitive problem-solving skills. In sensing problem-solving skills, significance was found regarding the type of schools. Government school students are better than private school students. But, aided school students do not significantly differ from any other school students. In thinking and problem-solving skills, private school students are better than government school but aided school students do not significantly differ from any other schools. A Positive Pearson correlation coefficient was found between oligarchic thinking style and anarchic thinking style which is at 64.90%, a positive correlation was found between hierarchic thinking style and anarchic thinking style which is 46.90%, the positive correlation was found between monarchic thinking style and anarchic thinking style which is in 44%, the positive correlation found between monarchic thinking style and hierarchic thinking style which is in 35.80%.



## DISCUSSION

From the result of the study, educational talks or seminars will conduct by school management once a month on Cerebro soft skills. This kind of effort will impact students' academic life and make them clear to take a perfect judgment in their academic and also social life. Low studies were found on cerebral soft skills and most of the researchers found that there is no association between brain dominance and the education among the learners (Tan Sing Keat et.al (2016). In this higher secondary stage, there is only one target for the students that are getting pass marks with high scores so they concentrate on that and continuously run, in this way, the teacher's role is vital and they should put some efficient strategies in teaching-learning and made them strong in their Cerebro soft skills. In right-brain dominance, 43% of the students have a high level and understand the need and importance of their mother tongue. Any form of communication by using their mother tongue is always effective. Because understanding, simple and effective communication in their academic is one of the easy platforms to achieve. Sometimes, which may be a hurdle to continuing the higher study where they follow English as a medium of instruction. In intuitive problem-solving skills, day scholars are better intuition skills. Proper provisions are created by themselves and by the society according to the lifestyle of the students is one of the main reasons that day scholars are better in their intuition skills. But hostel students, their entire life is controlled by the timetable; rules and regulations for achieving their academic goals. In the type of schools, government school students are better than private school students in their sensing problem-solving skills, in thinking problem-solving skills private school students are better. Capturing something by sense is one of the clever skills of the individual. Teachers should train the students in classrooms not only the teaching and learning but also the Cerebro soft skills which may use in their personal life too. Likewise thinking is also very important to initiate any kind of action it may be academically or socially. This study has a positive significant relationship with thinking styles and problem-solving skills; even intuition and feeling skills are one of the right brain dominant features which has also a positive significant relationship in this research which is in 22.84%.

## CONCLUSION

The researcher concluded by this study that more qualitative studies shall be made on Cerebro soft skills (brain dominance, thinking styles and problem-solving skills) of the teenagers, especially school-going learners. In this study, the level of students in right-brain dominant academic activity is low. The t-test found significance in Medium and residence. These two important factors tell that creativity and understanding are purely done by mother tongue which leads to innovations. F' test results show that the free approach made by the teachers for a better understanding of their needs. In correlation, the test result shows that a positive relationship is found in thinking styles which also tells the need and improvement for better understanding of thinking styles and problem-solving skills in the learners in this period. For the betterment of supportive documents, more detailed studies will be conducted on Cerebro soft skills.

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