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Influence of Emotional Intelligence and Lateral thinking on Achievement in Biology of XI Standard Students

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Abstract: The present study aimed at finding out the influence of emotional intelligence and lateral thinking on achievement in Biology of XI standard students. The present study is limited with the XI standard students of higher secondary school in emotion intelligence and lateral thinking on achievement in biology. The samples of 265 students of class XI were selected for this research randomly from 54 schools. The study concluded that the high percentage level of emotional intelligence and lateral thinking on achievement in biology of XI standard students it possessed by only 23.8 %, 21.7% and 11.9% of students respectively. The governments have to organize yoga and emotional intelligence management training programme to the XI standard students every year. There is significant factor with positive loading of the self-awareness, self-management, social awareness, relationship management and emotional intelligence, analogies, fractionation, generation of alternatives, brain storming, dominant ideas and lateral thinking and knowledge, understanding, application, skills on their achievement in Biology of XI standard students. The factor for the study has been identified as 'Emotive Thinking Attainment'. The table (4) explains the graphical representation of factor loading of the Emotional intelligence and Lateral thinking on Achievement in Biology of XI standard Students.

Keywords: Emotional Intelligence, Lateral Thinking, Achievement, Biology, Emotive thinking Attainment.

I. INTRODUCTION

Emotional intelligence consists of two words Emotion and Intelligence. Emotion refers to intense feeling of human intelligence is basically based on mental ability of human to deal effectively with the environment. Emotional intelligence is the ability to sense and understand one's own emotions, to express and regulate then appropriately and to use them in the process of decision making. It includes the capacity to understand and feel for others, and so set up maintain quality relationships. Emotional intelligence refers to the ability to perceive, control and evaluate emotions. Some researchers suggest that emotional intelligence can be learned and strengthened, while others claim it an inborn characteristic. Emotional intelligence is the ability to recognize your emotions, understand what they are telling you, and realize how your emotions affect people around you. Emotional intelligence also involves your perception of others: when you understand how they feel, this allows you to manage relationships more effectively. There are five elements identified as the components of emotional intelligence: self-awareness, self-regulation, motivation, empathy and social skills that comprise the field of emotional intelligence.

Implications for practice or policy:

- Encourage the policy makers understand the need of promoting emotional intelligence and lateral thinking on achievement.
- To be aware of emotional intelligence and lateral thinking skills to cope up with challenges facing in their curriculum development as well as in society.
- Create awareness and understanding of emotional intelligence and lateral thinking.
- Make the school heads to understand the need of students' necessities and institutional support for the new comers to prevent the emotional problems.

Emotional Intelligence of XI Standard Students:

Jesu Prakash and Vasimalairaja (2015) revealed that Emotional Intelligence is considered as successful predictor of academic success of every student. The study has shown that emotional well-being could be emphasized on academic success. Bhat (2017) results revealed that there is significant difference between boys and girls in the level of Emotional Intelligence. This finding coincided the finding of Faisal (2016) resultsofthestudydemonstratedtheeffectofEmotionalIntelligencefactorson the academic achievement of the students and the difference in the Emotional Intelligence between male and female pupils. Nadeem and Ahmad(2016). The findings of the study revealed that male and female higher secondary students differ significantly on thecompositescoreof Emotional Intelligence.

Subramanyam (2011) the study concluded that there was significant difference between boys and girls with regard to their emotional intelligence.

Manju and Mollykutty (2013) there were asignificant difference in the mean scores of emotional intelligence of secondary school students based on gender.Kumar and Sethi (2017) resultsrevealedthattherewasnosignificantdifferenceingender,i.e.,maleand female. Adigwe(2015)gender had no significant influence on the students Emotional Intelligence Mahajan (2011) there exists no significant difference between the emotional intelligence of boys and girls.Saini (2012) it was also found that female students were better than male students with regard to their emotional intelligence. This finding coincided the finding of Sharma and Sharma (2017) Most of the adolescents had average level of Emotional Intelligence with boys scoring significantly higher mean than girls.

Kumar and Sethi (2017) social maturity were also not different for government and private school adolescents.Shalini Yadav (2014)there was significant difference between the emotional intelligence of government and private schools' students. This finding was not supported by the following studies. Yadav (2014)there was no significant difference between the emotional intelligence of senior secondary class students of government and non-government schools. Shalini Yadav (2014) there was no significant difference between the emotional intelligence of government schools' boys and girls.Manju and Mollykutty (2013) it is revealed that the urban students was found to be higher than rural students in their emotional intelligence and valuing competencies. This finding coincided the finding of Martin (2012) there is significant in the association was found that male students from rural areas with self-control, sociability and well-being agree were awarded high in their programming skills, the female students who were sociability agree achieved first class in the same.Jesu Prakash and Vasimalairaja (2015) It analyzed that the total EI score showed a percentage of 6.9 per cent of the sample being emotionally intelligent particular students from urban area. Also, the study has shown that emotional well-being could be emphasized on academic success. Jesu Prakash and Vasimalairaja (2015) This study examined possible relationships between the academic performance and the Self-awareness and Self-motivation of XI grade biology students through the use of descriptive statistics.

Lateral Thinking of XI Standard Students:

Vasimalairaja (2016) the finding of study showed that there exists a positive correlation between lateral thinking and academic achievement of high school students**.** Itwas found that the level of lateral thinking is moderate among high school students. Amiri and Sheikhy (2014) there was no significant difference between the impact of autonomy and Lateral thinking on EFL learners' writing achievement. Evens et al. (2013) there were no significant differences in growth based on field of study in SE. Manshaee et al. (2014) of XI Standard Students**.** There was a significant difference in the Lateral thinking aspects between female and male students interested and uninterested in learning a second language. This finding was not supported by the following studies. Smitha and Rao (2009) it was found that there was no interaction effect of gender and group on Lateral thinking. Mohammadi et al. (2012) the result revealed a significant difference between male and female learners in their Lateral thinking; males' Lateral thinking ability was higher than that of females. Harish (2011) there was no significant difference between the mean scores of boys and girls in the post-test achievement.Cynthia Gnanamalar & Vasimalairaja (2019) The research paper study clearly revealed that there is significant correlation between the Lateral Thinking and Problem-Solving Ability. If the teachers have high level of Lateral thinking, they can manage the class room effectively and they can defend any challenges and she can transfer these skills to the students.

Achievement in Biology of XI Standard Students

Dr. S. Kalaivani (2018)it is revealed thatthere is significant difference between Male and Female students with respect to their Scientific Aptitude. This finding coincided finding of Lupart, Cannon and Telfer (2004) it found that the research had shown that both boys and girls can have a positive attitude toward education. Kingdom-Aaron et al. (2019) it found that there was no significant difference in performance based on gender (male and female). Adodo Sunday and Oyeniyi Joke D.Student (2013) there is no significant difference between male and female students in their academic performance in Biology in secondary schools. Herbert and Stipek (2005) reported that there are no gender differences in the actual mathematical achievement. Shaiju Francies (2007) it found that there was significant relationship between emotional intelligence and academic achievement of the model residential school students'which controversy with Kingdom-Aaron et al. (2019) it revealed that there was no significant difference in performance based on school type (public or private).

The investigator adopted the survey method to study the influence of emotional intelligence and lateral thinking on achievement in biology of XI standard students. The survey method gathers data from a relatively large number of cases at a particular time. It attempts to describe and interpret what exists at present the conditions, practices, processes, trends effects, attitudes and beliefs for which the survey type of research would be more relevant and useful.

Title of the study:

In this study, the researcher investigatedthe Influence of Emotional Intelligence and Lateralthinking on Achievement in Biology of XI Standard Students

Emotional Intelligence and Lateral Thinking on Achievement in Biology of XI Standard Students who study, the following objectives and hypothesis are formulated for the present study:

Objectives:

- To find out the Relationship between achievement in biology and emotional intelligence of XI Standard Students.
- To find out the Influence of lateral thinking and achievement in biology of XI Standard Students.
- To find out the Influence of emotional intelligence and lateral thinking on achievement in biology of XI Standard Students.
- To find out the Identifying a factor from the variables of emotional intelligence and lateral thinking on achievement in biology of XI Standard Students.

Hypothesis:

- There is no significant relationship between Emotional Intelligence and Achievement in biology of XI standard students.
- There is no significant relationship between Lateral Thinking and Achievement in Biology of XI standard students.
- There is no significant influence of Emotional Intelligence and Lateral Thinking on Achievement in Biology of XI standard students.
- There is no significant factor with positive loading of the variables namely self-awareness, self-management, social awareness, relationship management and Emotional Intelligence, analogies, fractionation, generation of alternatives, brain storming, dominant ideas and Lateral Thinking on Achievement in Biology of XI standard students.

II. MATERIALS AND METHODS

In the present investigation, the normative survey research method was used. This methodology helps researcher to obtain general results about the sample. One of the main reasons employing survey methodology was that it would enable the researcher to go to the field and to collect data on the topic in question from a small sample of the population in a short period. This paper deals with the design and procedure adopted for the study. It also describes the development of necessary tool for data collection.

Area of the study:

The area of the study consists of three Southern revenue districts of Tamil Nadu namely, Tirunelveli, Tuticorin, and Kannyakumari.

Population of the study:

The population for the present study includes all the higher secondary school students studying in government, aided and matriculation schools of the above-mentioned southern districts. According to government norms, there are three educational district centred at Tirunelveli, Cheranmahadvi and Vallioor in Tirunelveli revenue district, two educational districts centred at Tuticorin and Kovilpatti in Tuticorin reveneue district and three educations districts centred at Nagercoil, Kuzhithurai and Thakkalai in Kanyakumari revenue district. Then the investigator administered the student check list, developed by him to all the 1080 students, identified by head masters or principals.

Sample:

The investigator had used stratified random sampling for selecting the sample. The investigator randomly selected sixteen schools from each district. From these schools, 765 students were selected by stratified random sampling technique.

Research Tool & Test Construction:

The Standardised attitude scale was developed and standardized by the researcher was used for data collection for Indian academia.

Statistics:

Suitable descriptive and inferential statistics was used for analysis of data.

III. RESULTS

The chapter deals with the analysis of data collected over 54 schools' students. The data is subjected to statistical analysis and discussed in different sub-headings related to the objectives of the study. The statistics gives a comprehensive picture of relation Emotional Intelligences and Lateral thinking on Achievements in Biology of XI Standard Students.

There is no significant relationship between self-awareness, self-management, social awareness, relationship management and emotional intelligence and achievement in Biology of XI standard students.

Table 1

Relationship between Self-Awareness, Self-Management, Social Awareness, Relationship Management and Emotional intelligence and Achievement in Biology of XI Standard Students

Variables	N	Df	Calculated 'γ' value	Remarks
Self-awareness and Achievement in Biology	765	763	0.011	NS
Self-management and Achievement in Biology	765	763	0.006	NS
Social awareness and Achievement in Biology	765	763	0.009	NS
Relationshipmanagement and Achievement in Biology	765	763	0.295	S
Emotional intelligence in total and Achievement in Biology	765	763	0.035	NS

(The table value of 'γ' is 0.069, S - Significant, NS - Not Significant)

It is inferred from the above table that the calculated 'γ'values (0.011, 0.006, 0.009, 0.035) are less than the table *'γ'*value (0.069) at 0.05 level of significance. Hence the respective null sub hypothesis areaccepted. Thus, the result shows that there isno significant positive correlation between self-awareness, self-management, social awareness, and emotional intelligence and their achievement in Biology of XI standard students. But there is significant positive correlation between relationship management and achievement in Biology of XI standard students.

There is no significant relationship between analogies, fractionation, generation of alternatives, brain storming, dominant ideas and lateral thinking and achievement in Biology of XI standard students.

Table 2

Relationship between Analogies, Fractionation, Generation of Alternatives, Brain Storming, Dominant Ideas and Lateral thinking and their Achievement in Biology of XI Standard Students

Variables	N	Df	Calculated 'γ' value	Remarks
Analogies and Achievement in Biology	765	763	0.260	S
Fractionation and Achievement in Biology	765	763	0.435	S
Generation of Alternatives and Achievement in Biology	765	763	0.158	S
Brain Storming and Achievement in Biology	765	763	0.275	S
Dominant Ideas and Achievement in Biology	765	763	0.354	S
Lateral thinking and Achievement in Biology	765	763	0.395	S

(The table value of 'γ' is 0.069, S – Significant)

It is inferred from the above table that the calculated 'γ'values (0.260, 0.435, 0.158, 0.275, 0.354, 0.395) is greater than the table *'γ'*value (0.069) at 0.05 level of significance. Hence the respective null sub hypothesis arerejected. Thus, the result shows that there is significant positive correlation between analogies, fractionation, generation of alternatives, brain storming, dominant ideas and lateral thinking and their achievement in Biologyof XI standard students

There is no significant relationship between self-awareness, self-management, social awareness, relationship management and emotional intelligence and their lateral thinking of XI standard students.

Table 3

Relationship between Self-Awareness, Self-Management, Social Awareness, Relationship Management and Emotional intelligence and their Lateral thinking of XI Standard Students

Variables	N	Df	Calculated 'γ' value	Remarks
Self-awareness and Lateral thinking	765	763	0.005	NS
Self-management and Lateral thinking	765	763	0.011	NS
Social awareness and Lateral thinking	765	763	0.030	NS
Relationship management and Lateral thinking	765	763	0.641	S
Emotional intelligence and Lateral thinking	765	763	0.074	S

(The table value of 'γ' is 0.069, S - Significant, NS - Not Significant)

It is inferred from the above table that the calculated 'γ'values (0.005, 0.011, 0.030) are less than the table *'γ'*value (0.069) at 0.05 level of significance. Hence the respective null hypothesis is accepted. Thus, the result shows that there is no significant positive correlation between self-awareness, self-management, social awareness and their lateral thinking of XI standard students. But there is significant positive correlation between relationship management and emotional intelligence and their lateral thinking of XI standard students. Hence the respective null hypothesis is rejected.

There is no significant factor with positive loading of the variables namely self-awareness, self-management, social awareness, relationship management and emotional intelligence, analogies, fractionation, generation of alternatives, brain storming, dominant ideas and lateral thinking, knowledge, understanding, application, skills and their achievement in Biology of XI standard students.

Table 4

Factor loading of Emotional Intelligence and Lateral Thinking on Achievement in Biology of XI Standard Students

Variables	Factor Loading	Nature of Variables
Self-awareness	.880	Very high presence
Self-management	.895	Very high presence
Social awareness	.883	Very high presence
Relationship management	.872	Very high presence
Emotional intelligence	.998	Extremely high presence
Analogies	.730	Very high presence
Fractionation	.727	Very high presence
Generation of alternatives,	.884	Extremely high presence
Brain Storming	.625	Considerable presence
Dominant ideas	.506	Extremely somewhat presence
Lateral thinking	.995	Extremely high presence
Knowledge	.779	Very high presence
Understanding	.784	Very high presence
Application	.802	Very high presence
Skills	.797	Very high presence

Achievement in Biology	.992	Extremely high presence	

The factor analysis of the correlation matrix for Emotional intelligence, Lateral thinking and Achievement in Biology and it yields a single factor with considerable factor loading as given the above table; hence there is self-awareness, self-management, social awareness, relationship management and emotional intelligence, analogies, fractionation, generation of alternatives, brain storming, dominant ideas and lateral thinking , knowledge, understanding, application, skills and their achievement in Biology of XI standard students. The factor for the study has been identified as Emotive Thinking Attainment. The table (4) explains the graphical representation of factor loading of the Emotional intelligence and Lateral thinking on Achievement in Biology of XI Standard Students.

IV. DISCUSSION

Findings indicated areas that the students' achievement in Biology:

- Significant positive correlation was found between relationship management and achievement in Biology of XI standard students. But no significant positive correlation was found between self-awareness, self-management, social awareness, and emotional intelligence and their achievement in Biology of XI standard students.
- Significant positive correlation was found between analogies, fractionation, generation of alternatives, brain storming, dominant ideas and lateral thinking and their achievement in Biology of XI standard students.
- Significant positive correlation was found between relationship management and emotional intelligence and their lateral thinking of XI standard students. But no significant positive correlation was found between self-awareness, self-management, social awareness and their lateral thinking of XI standard students.
- There is significant factor with positive loading of the self-awareness, self-management, social
- awareness, relationship management and emotional intelligence, analogies, fractionation, generation of alternatives, brain storming, dominant ideas and lateral thinking and knowledge, understanding, application, skills and their achievement in Biology of XI standard students.

Conclusion

The present study aimed to find out the influence of emotional intelligence and lateral thinking on achievement in Biology of XI standard students. The present study is limited in XI standard students of higher secondary school in emotion intelligence and lateral thinking on achievement in biology. The study concluded that the high percentage level of emotional intelligence, lateral thinking on achievement in biology of XI standard students it possessed by only 23.8 %, 21.7% and 11.9% of students respectively. The governments have toorganize yoga and emotional intelligence management training programme to the XI standard students every year.

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