

**STUDY HABITS AND CRITICAL THINKING OF CBSE AND
STATE BOARD STUDENTS IN CHENNAI CITY**

Zeba Samrah T.A

Researcher

Department of Applied Psychology & Behavioral Research,

J.B.A.S College for Women, Chennai, India

Samrah.zeba@gmail.com

ABSTRACT

Studying forms a vital part in a students' life. The academic success rate is determined by the students study habits. Tamil Nadu students have been achieving excellent results in the state board exams academically, but are lagging behind in competitive exams, which has created a lot of distress for the students & resulted in controversial suicides. The purpose of this study was to review the existing literature to find solutions to this problem and to analyze the existing patterns of Study habits and Critical thinking in the secondary school students belonging to CBSE and State board curriculum. The Study design was Descriptive Research, Also known as Ex Post Facto Research. A sample size of two-hundred and thirty-six students' was sampled from seven schools across the Chennai city using the non-probability convenience sampling method. Two tools were used: Study habits were measured using (PSSHI) Palsane and Sharma Study Habit Inventory by Palsane and sharma. Critical thinking was measured using the (CTAT) Critical Thinking Ability Test by Deepa and Sadananthan. Statistical analysis was done using the Pearson Product-Moment Correlation Coefficient and t-test. The correlative results indicated that there was a significant relationship between the study habit and critical thinking of the state board students. The t-test on study habits indicated that there was significant difference between CBSE and state board students, where the latter had a better mean in study habits. The CBSE board students had a better mean in critical thinking.

Key Words– Study Habits, Critical thinking, Board exams, Competitive exams, Senior Secondary School, Chennai, Tamil Nadu.

INTRODUCTION

Students typically spend fourteen years of their school life in the process of studying and learning. Day-in and day-out, they have to process new concepts, information and knowledge from their subjects. And at the end of the learning process, they have to face the

examinations which will evaluate their performance and segregate them into percentage criteria. This in turn, would be used to determine their academic success. The whole focus of academic education is to impart quality knowledge to the students and to prepare them for their future careers. As the students are always on the receiving side of instructions, it becomes really necessary for them to structure and organize all of the received information. Study habits help the students to do that. Kelly (1998) stated that study is the application of one's mental capacity to the acquisition, understanding and organization of knowledge. It often involves some form of formal learning. According to Patel (1976), study habits include: • Reading and note taking habits • Planning of subjects • Habits of concentration • Preparation for examination • General habits and attitudes • School environment

At the end of the day, what really matters is the students understanding of the concepts, how far they easily retain it and apply it to the real life. This is where their critical thinking steps in. Hence, the study habits and critical thinking established by the student work together in contributing towards their success in academics. According to Deepa and Sadananthan (2010), Critical Thinking means the ability of the students being able to perform the test having statements in the areas of assumption, interpretation, deduction and the evaluation. The critical thinking ability can be measured in terms of four dimensions as given below. They were (a) Recognition of assumptions (b) Interpretations (c) Deduction and (d) Evaluation.

Need for Study

The current scenario of Tamil Nadu state is being one of the states which had been getting poor results in the overall performance of competitive exams such as NEET, IIT and other entrance

exams, which is a thing of concern. The statistics show that Tamil Nadu has been the worst performing state in the southern region (Jain, 2018). This has not only affected the self-confidence and self-esteem of the state's students but it has also led to controversial suicide cases due to the failure of the states' students in achieving the qualifying percentage required (Baral, 2018).

An article posted in Express News Service (2018) highlights the State government's efforts to help the students achieve success. In a bid to ease the pressure on the students, the government had also announced a no-detention policy for class 11, which meant that students who couldn't clear the exam could take it up later during Class 12. Another article posted by, DH News Service (2018), indicates the various reforms that were brought to the State to inculcate the sudden changes in NEET entrance exams. The State saw a dip in results due to this change.

On the other hand, contradicting results were published regarding the pass percentage results of State board exams. According to the statistics, in 2018, nearly 8.47 lakh candidates from schools across the state had appeared for the board exam. The pass percentage of students in secondary board exams is high; the highest pass percentage was recorded to be 97.05 per cent (Mathur, N., 2018). It is evident from the given statistics that the state students are performing good academically in their secondary & higher secondary school examinations. But they tend to face difficulty in attempting the competitive exams when trying for professional courses. The entrance tests, competitive examinations and other eligibility exams have critical thinking as one of the crucial aspects of setting the question papers. Critical thinking has been determined to be a predictor of performance in objective exams (Robert, 2002). Only those students who have in-depth subject knowledge, ability to think critically and analyze different

problems in an excellent manner with lots of practice tend to reach the right answer and are successful in conquering these tests.

Statistics: Success Rate of CBSE and State board in Competitive Exams

IIT:

Statistics have shown that CBSE students fare better than the State board students in competitive exams. The CBSE boards' course syllabus is in favor of the CBSE students who are planning to join the IITs. On the other hand, it was published by India Today (2015), that Tamil Nadu has the second highest number of engineering applications. But out of the 8 lakh Tamil Nadu state board students who appear, hardly only 20 enter IITs. (RAMAN, A., 2017). Articles have supported that the students from CBSE, urban area and higher income group have four times higher success rate than those from lower income group (SINGH, S., 2013).

NEET:

The CBSE schools tend to keenly anticipate the enforcement of NEET (Krishnamoorthy, 2016). By completely disregarding the percentile obtained in Class XII board exams and the sudden transition to multiple choice questions solving which has been privileged over detailed concept development, the Tamil Nadu board students are finding it hard to cope.

The predominant language, in which the question paper has been set, is either English or Hindi. This has also has been acting as a barrier for the states students. Research supports the view that students tend to think critically better in their native language. (Manalo, E., Sheppard, C., 2016)

It was of expert opinion that the class room coaching would be of no help to the students who prepare for the common medical entrance test. Another reason for low pass

percentage was attributed to the reason that, students from Tamil Nadu were not trained for entrance exams as there was no entrance exam from 2007 in the state and then, the NEET exam was suddenly imposed on them. Lack of coaching centers and the high fee structure for attending such coaching classes were the other barriers noted (Raman, 2017).

GATE Exam:

Similarly, GATE results were also recorded with the highest failure being in Tamil Nadu (JOSH, J., 2015).

Little research has been carried out in the area of study between the variables, Study habits influencing the critical thinking in the CBSE and State board sample. This research has been undertaken to address this gap. This study has also been conducted to find out if the controversy surrounding the CBSE and State board students' performance in competitive exam and board exam has any relationship hidden in their study habits and critical thinking. Thirdly, the statistical analysis of the competitive exam results and board exam results in Tamil Nadu, have shown contradicting results. The states students have excellent academic pass percentage in board exams, but have very poor performance in competitive exams.

The core research problem is, "Why the students of Tamil Nadu have poor success rate in competitive exams, whereas the academic results of the state indicates excellent success rate."

The objective of this study is to find out the link between study habit and critical thinking. It is also to find out, how this link is related to different boards and if any differences exist in the CBSE and State board students. The units of analysis taken for this study are the male and female students of secondary school, belonging to CBSE and State board.

The need of the hour is to train the students with the required academic skills and to empower them, for a brighter future of India, for the betterment of society. All for the sake of

more number of innovations and contributions to the field of science and development taking place through critical thinking.

The ability to study, understand, analyze and think critically is going to open more doors of opportunities for the students. The students would learn to crack the competitive exams and pursue any professional course according to their passion. Secondly, it gives them the insight and ability to look at existing problems in the society and coming up with novel innovations and solutions. Third, it brings an overall development to the student's competitiveness and ability to compete with other students around the world in terms of subject knowledge and in terms of analytical, creative and practical application. Fourth, the society would benefit from such bright and efficient students who are going to be the future of this country.

Reviewing the literature

It has been found through reviewing the literature that there is a relationship existing between study habits and academic achievement. There is also another link existing between critical thinking and competitive exams. With the help of this, we analyze the existing patterns in the students to find out the answers to our research questions.

Study habits & Academic achievement

Many research studies have found that the students who have good study habits tend to perform higher in terms of academic achievement (Naqvi et al., 2018; Joseph, 2017; Bilge, 2014; Anwar, 2013; Credé, M & Kuncel, N. R., 2008). High achievers tend to have other characteristics like punctuality, good concentration and better time management skills (Malik, 2016). Specific study behaviors tend to impact higher levels of course achievement

(Onwuegbuzie et al., 2001). Good performing students tend to read ahead, cram for exams, participate in class and do their homework (Yu, 2011). Intervention techniques for study habits were found to have enhancing effects in improving the students study skills and academic performance (Abdullahi, U., 2013; Jiménez, E. F., Martínez, M. S & Gutiérrez, M. R., 2010).

Study habits & Critical thinking

The students who had the study habit of reading everyday had higher scores in critical thinking (Genç, G., 2017 & KIRMIZI, F. S., et al., 2014). Thinking skills instruction was found to facilitate the development of critical thinking and also seems to lead in the successful achievement in the areas of language and mathematics. The quality of critical thinking depends on content of the topic (Stapleton, P., 2001 & Caines, J.O., 1993). The instructional time in teaching the various habits of the mind to the student's, results in effectively facilitating the development of conceptual knowledge (Fletcher, J., 2013; Alan D. Bensley., 2010). Skill instruction at the time of class presentation, working on class project improved the perception of students' on their critical thinking (Tsui, L., 1999). The prior academic performance of the students and the instructional approaches, teaching strategies used by the teachers seem to influence the students' critical thinking ability (Tiruneh, D. T., Verburgh, A & Elen, J., 2014).

Enhancing Critical thinking

The activities in the text book promote critical thinking skills in the students, few researchers focused on restructuring the curriculum to increase the quality and critical thinking aspect of the students (Puadi Ilyas, H., 2015; Bellomo, C & Strapp, R., 2008).

Deeper comprehension is achieved through critical thinking. Critical analysis of issues helps the students to increase their ability in evaluating and interpreting. Literature discussion and

critical literacy methods enhance critical thinking (Kenney, J., 2013; Gadzella, B. M & Ginther, D. W & Bryant, W. G. 1996).

Critical Thinking & Exams

Critical thinking has found to be a mediator of interest in the students' performance in school (Walter, C & Walter, P., 2018). Students tend to do better critical evaluation in their native language (Manalo, E & Sheppard, C., 2016). A student's critical thinking is the best predictor of success in objective type questions. Whereas, note taking is the best predictor of performance in the total academic course (Robert L, W & Stephen L, W., 2002).

RESEARCH METHODOLOGY

Research Problem:

The core research problem is, "Why the students of Tamil Nadu have very poor success rate in competitive exams, when the academic results of the state indicates excellent success rate."

Research Design:

Descriptive Research, Also known as Ex Post Facto Research.

Statistical Design:

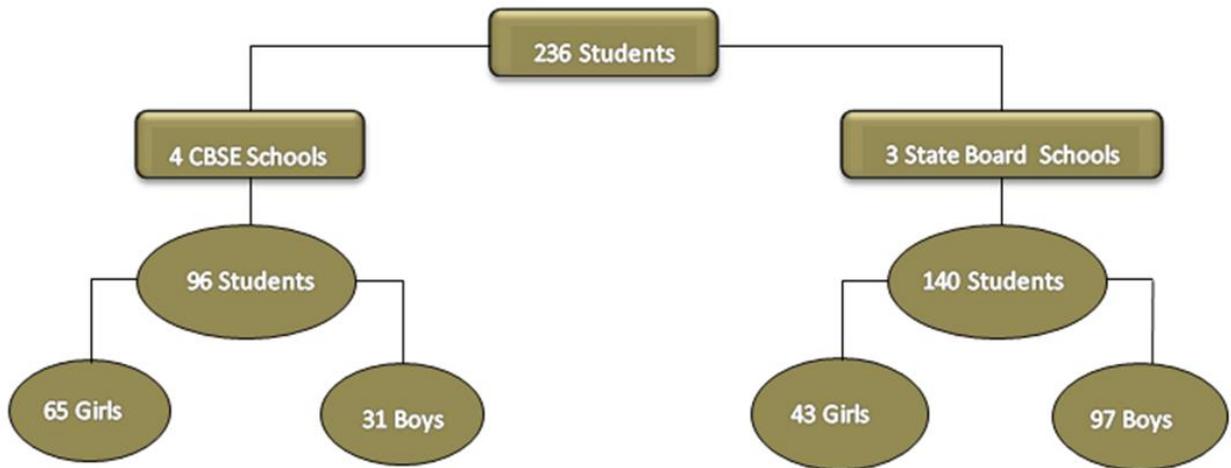
Pearsons' Product Moment Correlation, r was used to find the relationship And Comparison was done using the T-test.

Population:

The students studying in 11th & 12th grade of CBSE and State board schools in Chennai were taken as the population. Both the commerce and science streams were considered.

Sample:

A sample of 236 students was taken from Four CBSE & Three State board schools. Ninety six CBSE students were sampled (65 girls & 31 boys) and one hundred and forty State board students were sampled (43 girls & 97 boys).



Sample Design:

1. **Type of universe:** Finite

2. **Sampling Unit:** Students of 11th & 12th standard belonging to:

Four CBSE Schools (96 students) and three State Board Schools (140 students)

3. **Size of the sample:** 236

4. **Parameters of interest:** 11th & 12th grade students; Belonging to CBSE & State board curriculum; from both the science and commerce streams.

5. **Budgetary Constraint:** limited budget constraint leading to use of non-probability sample & small sample size.

6. **Sampling procedure:** Non Probability, convenient sampling.

7. **Inclusion Criteria:** Students of CBSE & State board curriculum belonging to 11th & 12th standard of both the science and commerce streams.

8. **Exclusion Criteria:** Students of other boards, students studying in Tamil medium schools. The students with disabilities and the students belonging to class 10th.

Instrument for Data Collection:

I) (CTAT) Critical Thinking Ability Test by Deepa and Sadananthan

II) (PSSHI) Palsane & Sharma Study Habit Inventory by Palsane & sharma

Results and Discussion

Hypothesis 1. There is no significant relationship between the Study habits and Critical thinking in the CBSE & State board students

Table 1

Pearson's Product Moment correlation between Study habits and Critical thinking in CBSE & State board students

Variables	Board	N	Correlation Coefficient
Study Habit & Critical thinking	State	140	0.366**
	CBSE	96	0.024 NS

Note. **= $p < .01$, NS= Not Significant

Table 1 shows the correlation value r , between the Study habits and Critical thinking of the CBSE and the State board students. Coefficient value, $r(138) = .366$, where, $p < 0.01$. This shows that there is a significant, weak positive correlation between the study habits and critical thinking of the state board students. It indicates that, as the students develop their study habits; their critical thinking also seems to develop simultaneously. The better the study habits of the students, the better seems to be their critical thinking ability.

Supporting results were found by KIRMIZI (2014), where there was a significant relationship found between the candidates' tendencies on critical thinking scores and their attitudes toward reading habit. Hence the hypothesis, 'There will be no significant relationship between study habits and critical thinking of the state board students' is not accepted.

Table 1 also shows the correlation value r , between the study habits and critical thinking in the CBSE students. The coefficient value, $r(94) = .024$, where, $p > 0.5$. This shows that there is no significant relationship between the study habits and critical thinking in the CBSE

students. This indicates that the CBSE students have study habits which do not seem to influence their critical thinking ability. Supporting results were found by Harish (2013), where the Study habits of the students did not influence their critical thinking skills. Hence the hypothesis, ‘There will be no significant relationship between the study habits and critical thinking of the CBSE students’ is accepted.

Hypothesis 2. There will be no significant difference in the study habits between the students of CBSE and State board

Table 2
Shows the Mean, S.D, ‘t value’ of study habits between the CBSE & State board students

Variable	Board	N	Mean	S.D	t value
Study Habit	State	140	54	7.88	2.186*
	CBSE	96	51.36	9.84	

Note.*= $p < .05$

Table 2 shows the Mean, S.D and t value of the study habits between the CBSE & State board students. From the above table it has been observed that $t(174) = 2.18$. Where, $p < .05$. This shows that, there is significant difference existing between the study habits of CBSE and State board students. The State board curriculum students had higher Study habit scores ($M = 54, S.D=7.88$) than the CBSE students ($M = 51.36, S.D= 9.84$). The Study habit score for CBSE students was interpreted as ‘Unsatisfactory’ and for the State board students it was

interpreted as ‘Average’. The hypothesis ‘There will be no significant difference between the study habits of CBSE and State board’ cannot be accepted.

Hypothesis 3. There will be no significant difference in critical thinking between the students of CBSE & State board.

Table 3
Shows the Mean, S.D, ‘t’ value of critical thinking between the State board and CBSE students

Variable	Board	N	Mean	S.D	t value
Critical Thinking	State	140	24.578	5.725	-1.620 NS
	CBSE	96	26.041	7.470	

Note. NS= Not Significant

Table 3 shows the *Mean*, *S.D* and *t value* of critical thinking between the State board and CBSE students. It can be observed from the above table that, the ‘t value’ is, $t(168) = -1.620$. Where, $p > .05$. This shows that there is no significant difference existing between the CBSE and State board students in the Critical thinking. The CBSE students had higher Critical thinking scores ($M = 26.041$, $S.D=7.470$) than the State board students ($M = 24.578$, $S.D=5.725$). The hypothesis ‘There will be no significant difference in critical thinking between the students of State board and CBSE board curriculum’ is accepted.

Findings of the study

1. A positive correlation between Study habits and Critical thinking has been found through this study.

2. CBSE board students were found to have ‘unsatisfactory’ study habit mean scores
3. State board students were found to have lower critical thinking mean scores
4. Through reviewing literature, the relationship between Study habits and Academic success has been found. The relationship between Critical thinking and Competitive exams has also been found through reviewing the literature.
5. It has been established through reviewing the literature that students think more critically in their native language.

Conclusions

1. Developing good study habits enhances the students ability to inculcate appropriate critical thinking habits of the mind.
2. As study habits are also the predictors of academic success. Interventions in study skill development will facilitate academic success.
3. Critical thinking interventions such as thinking skills instruction, instructional time given for teaching and various teaching strategies nurture critical thinking. Critical analysis of issues with literature discussion and critical literacy methods need to be implemented in class room discussions. The activities in the text book as well as the content of the topic will determine the quality of critical thinking. Hence, the need of the hour is to restructure the text books contents and utilize the principles of enhancing critical thinking to help the students become more equipped in terms of knowledge, conceptual applications and to think critically.
4. Teachers need to be trained in aiding the students to develop critical thinking. This will benefit the student community immensely in their preparations for competitive exams, rather than just rote learning. As critical thinking is the predictor of success in objective exams, it is

crucial to train the teachers in giving 'critical thinking skills instruction' to the students, to enhance their ability towards achieving an open mind towards thinking conceptually.

5. For competitive exams, the initiative of setting the question paper in both English/ regional language of the state would help the students to comprehend the questions in a better way. As the literature concludes that students think more critically in their native language. This would be one step towards helping the students overcome their language barrier difficulty.

REFERENCES

- Abdullahi, U., Atsua, T. G., Amuda, B. G., & Ago, H. A. (2013). Study habits consoling and academic performance of senior secondary school students in Maiduguri, Nigeria. *JORIND*, 11(2), 36-42. URL: www.transcampus.org/journals; www.ajol.info/journals/jorind
- Alan D. Bensley (2010). *Teaching and Accessing Critical Thinking Skills for Argument Analysis in Psychology*. Retrieved on December 12, 2011, from [http:// www. Proquest.com/en/-us/products/ dissertations/individuals.shtml](http://www.Proquest.com/en/-us/products/dissertations/individuals.shtml).
- Anwar, E. (2013). A correlational study of academic achievement and study habits: Issues and concerns. *Excellence International Journal of Education and Research*, 1(2), 46-51.
- Bellomo, C., & Strapp, R. (2008). A survey of advanced mathematics topics: a new high school mathematics class. *International Journal Of Mathematical Education In Science & Technology*, 39(1), 13-22. doi:10.1080/00207390701368561
- Bilge, F., Dost, M. T., & Cetin, B. (2014). Factors Affecting Burnout and School Engagement among High School Students: Study Habits, Self-Efficacy Beliefs, and Academic Success. *Educational Sciences: Theory & Practice*, 14(5), 1721-1727.
- Caines, Overton June (1993). "An investigation of the effect of thinking skills instruction on academic achievement and the development of critical and creative thinking skills of

- second – fourth, and sixth – grade students". *Dissertation Abstract international*, 55(3),pp.509A.
- Credé, M., & Kuncel, N. R. (2008). Study Habits, Skills, and Attitudes: The Third Pillar Supporting Collegiate Academic Performance. *Perspectives On Psychological Science*, 3(6), 425-453. doi:10.1111/j.1745-6924.2008.00089.x
- Deepa, R.P. & Sadananthan, M.(2010) Attitude of Secondary School Teachers Towards Cooperative Learning. *Edutracks*, 11(9), 34-36.
- FLETCHER, J. (2013). Critical Habits of Mind. *Liberal Education*, 99(1), 50-55.
- Gadzella, B. M., Ginther, D. W., & Bryant, W. G. (1996). Teaching and learning critical thinking skills. *XXVI International Congress of Psychology*. 150-54
- Genç, G. (2017). The Relationship Between Academic Achievement, Reading Habits And Critical Thinking Dispositions of Turkish Tertiary Level EFL Learners. *Educational Research Quarterly*, 41(2), 43-73.
- Jiménez, E. F., Martínez, M. S., & Gutiérrez, M. R. (2010). Apoyo de Profesores y Padres de Familia en la Formación de Hábitos de Estudio. *Revista Mexicana De Orientación Educativa*, 7(18), 2-6.
- Joseph, R. (2017). *A study of academic achievement of secondary school students in relation to their achievement motivation study habits and learning styles in Kigali City Rwanda*. Ph.D. University of Mysore.
- Kelly, W.A., 1998. *Educational Psychology*. Bruse Pub.Co., Milwaukee.
- Kenney, J. (2013). Fostering Critical Thinking Skills: Strategies for Use with Intermediate Gifted Readers. *Illinois Reading Council Journal*, 41(2), 28-39.
- Kirmizi, F. S., FENLİ, A., & Kasap, D. (2014). SINIF ÖĞRETMENİ ADAYLARININ ELEŞTİREL DÜŞÜNME EĞİLİMLERİ İLE OKUMA ALIŞKANLIKLARINA

- YÖNELİK TUTUMLARI ARASINDAKİ İLİŞKİ. *International Journal Of Turkish Literature, Culture, Education*, 3(1), 354-367.
- Malik, M., & Parveen, N. (2016). Study Habits and Academic Achievement: A Comparative Analysis of the High and Low Academic Achievers. *Bahria Journal Of Professional Psychology*, 15(2), 46-54.
- Manalo, E. and Sheppard, C. (2016). How might language affect critical thinking performance?. *Thinking Skills and Creativity*, 21, pp.41-49.
- Naqvi, S., Chikwa, G., Menon, U., & Al Kharusi, D. (2018). Study Skills Assessment among Undergraduate Students at a Private University College in Oman. *Mediterranean Journal Of Social Sciences*, Vol 9 No 2(ISSN 2039-2117 (online)).
- Onwuegbuzie, A. J., Slate, J. R., & Schwartz, R. A. (2001). Role of study skills in graduate-level educational research courses. *The journal of educational research*, 94(4), 238-246.
- Palsane, M.N and Sharma S. (1963). Palsane and Sharma Study habit inventory. Agra: National Psychological Corporation.
- Patel, B. V. (1976). Manual for Study Habits Inventory. Agra: Agra Psychological Research cell.
- Patel, B. V. (1976). Study Habits Inventory. In: Second HandBook of Psychology and Social Instrument, ed. Pestonjee, D.M., . New Delhi: Concept Publishing Company
- Puadi Ilyas, H. (2015). *Critical Thinking: Its Representation in Indonesian ELT Textbooks and Education* (Ph.D). University of York Education.
- Robert L., W., & Stephen L., W. (2002). Thinking Skills and Work Habits: Contributors to Course Performance. *JGE: The Journal Of General Education*, 51(3), 200-227.

- Stapleton, P. (2001). Assessing Critical Thinking in the Writing of Japanese University Students. *Written Communication, 18*(4), 506-548. doi: 10.1177/0741088301018004004
- Tiruneh, D. T., Verburgh, A., & Elen, J. (2014). Effectiveness of critical thinking instruction in higher education: A systematic review of intervention studies. *Higher Education Studies, 4*(1), 1-17.
- Tsui, L. (1999). Courses and instruction affecting critical thinking. *Research in Higher Education, 40* (2), 185- 200
- Walter, C., & Walter, P. (2018). Is Critical Thinking a Mediator Variable of Student Performance in School?. *Educational Research Quarterly, 41*(3), 3-24.
- Yu, D. D. (2011). How Much Do Study Habits, Skills, and Attitudes Affect Student Performance in Introductory College Accounting Courses?. *New Horizons In Education, 59*(3), 1-15.

Websites

- Baral, M. (2018). Tamil Nadu Among States With Lowest Pass Percentage In NEET 2018. Retrieved from <https://www.ndtv.com/education/neet-2018-result-declared-39-55-pass-in-tamil-nadu-1862317>
- DH News Service. (2018). Dip in pass percentage in TN class XII exams. Retrieved from <https://www.deccanherald.com/national/dip-pass-percentage-tn-class-xii-exams-670219.html>
- Express News Service (2018) Tamil Nadu sees slight dip in Class 12 pass percentage. (2018). Retrieved from <http://www.newindianexpress.com/states/tamil-nadu/2018/may/16/tamil-nadu-sees-slight-dip-in-class-12-pass-percentage-1815344.html>
- Jain, A. (2018). NEET 2018 Result Statistics. Retrieved from <https://medicine.careers360.com/articles/neet-2018-result-statistics>

- JOSH, J. (2015). GATE results failure highest in Tamil Nadu. Retrieved from <https://www.jagranjosh.com/articles/gate-results-failure-highest-in-tamil-nadu-1428402784-1>
- IndiaToday.in (2019). *Tamil Nadu: Second highest number of engineering applications*. [online] India Today. Available at: <https://www.indiatoday.in/education-today/news/story/tamil-nadu-iit-madras-258609-2015-06-20>.
- Krishnamoorthy, R. (2016). CBSE schools keenly anticipate NEET enforcement. Retrieved from <https://www.thehindu.com/news/national/tamil-nadu/cbse-schools-keenly-anticipate-neet-enforcement/article8567946.ece>
- Mathur, N. (2018). Tamil Nadu Board 12th Result 2018 declared: Highlights. Retrieved from <https://www.hindustantimes.com/education/tamil-nadu-board-12th-result-2018-at-tnresults-nic-in-and-dge-tn-nic-in/story-WJ98WeMw7NYHndoThVJIXL.html>
- Raman, A. (2017). 41 per cent in Tamil Nadu pass NEET, lowest in South India. Retrieved from <https://www.deccanchronicle.com/nation/in-other-news/270217/41-per-cent-in-tamil-nadu-pass-neet-lowest-in-south-india.html>
- RAMAN, A. (2017). Of 8 lakh Tamil Nadu state board students only 20 enter IITs. Retrieved from <https://www.deccanchronicle.com/nation/current-affairs/311017/of-8-lakh-tamil-nadu-state-board-students-only-20-enter-iits.html>
- SINGH, S. (2013). IIT-JEE Distortion: Why CBSE, Rich & Urban Students Fare Better. Retrieved from <http://www.forbesindia.com/blog/technology/iit-jee-distortion-why-cbse-rich-urban-students-fare-better/>