The Academic
International Journal of Multidisciplinary Research

An Online Peer Reviewed / Refereed Journal
Volume 4 | Issue 5 | May 2026
ISSN: 2583-973X (Online), SJIF IF: 5.6
Website: www.theacademic.in

Enhancement in the Critical Thinking Skills of Secondary School Students through Discourse Construction in English

Dr. Sheena Elizabeth Varghese

Associate Professor, Government College of Teacher Education, Thiruvananthapuram, Kerala, India.

Email id: sheenajij@gmail.com

DOI : https://doi.org/10.5281/zenodo.20682515

ARTICLE DETAILS

Research Paper

Accepted: 23-05-2026

Published: 10-06-2026

Keywords:

critical thinking skill, discourse construction, enhancing, secondary school students

ABSTRACT

Critical thinking is the process by which the acquired knowledge is applied to new problems or situations in order to devise new solutions. The present study aims to enhance the critical thinking skills of secondary school students through discourse construction in English.The study was conducted through single group pretest posttest experimental design in a sample of 50 secondary school students of Kerala, India. For testing the critical thinking skill, Test of Critical Thinking Skill which is modelled on most highly employed test of critical thinking termed as the Watson-Glaser Thinking Appraisal was prepared and standardised by the researcher. The test prepared by the researcher gives due weightage to the component skills namely; recognising assumptions, inference, deduction, interpretation and evaluation of arguments. Followed by the pretest, the selected experimental group was instructed with the modules of discourse construction prepared by the researcher for enhancing critical thinking skill. Data was analysed with descriptive statistics along with Paired t -test. From the results of the present study, it is evident that discourse construction is effective for enhancing the critical thinking skill of secondary school students.

Introduction

The term ‘thinking’ is complex in nature and different types of thinking have been identified by the thinkers and scholars in the field. The term critical thinking is derived from ancient Greek. Critical

thinking is the process by which the acquired knowledge is applied to new problems or situations in order to devise new solutions. The extensive readings on various studies conducted on the notions of critical thinking by past researchers reveals that there is no one agreement on the absolute definition on critical thinking. Critical thinking is reflective and reasonable thinking that is focused on deciding what to believe or do (Ennis,2002). Critical thinking is an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences (Cosgrove,2002). Critical thinking includes a commitment to using reason in the formulation of our beliefs (Mulnix,2012). A panel of 46 authority figures in the field of critical thinking and reasoning skills generated a consensus of the definition of critical thinking by means of the well-known Delphi method. The definition of critical thinking thus arrived can be stated as, "We understand critical thinking to be purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" (Facione, 1990). The leading figures in the educational tradition of theorizing thinking Bloom (1956), Gagne (1965), Perkins (1981), and Renzulli (1976), whose theorizing seems directly responsive to the skills needed by children in the classroom for problem solving, decision making, and concept learning. Bloom's (1956) famous taxonomy of cognitive skills and Gagne's (1965) well known hierarchy of learning skills have widespread application in classroom situations and even textbook creation. These theorists have drawn heavily upon classroom observation, text analysis, and process analysis of thinking in the classroom to guide their thinking about critical thinking.

The use of interactive web modules and classes that use interactive video can improve students' critical thinking skills (Febliza etal.,2023). The study conducted to measure the effectiveness of the Discovery-based Multiple Representation (DMR) learning model to improve student critical thinking skills (CTS) of students concluded that the DMR learning model is effective to improve students' CTS on environmental change topics (Chusni etal.,2022).The research to evaluate the impact of active learning strategies over the enhancement of CTS revealed that CTS is related to factors external to the learning strategy, such as the type of activity, the tools needed to perform the activities, the actual relevance of the results, peer discussions, expectations, and self-appreciation (Forte-Celaya etal.2021). Project-Based-Learning (PBL) on critical reading course was implemented to enhance critical thinking skills of 26 EFL students at STKIP PGRI Sidoarjo, Indonesia. The results revealed that Project-Based-Learning enhanced critical thinking skills (Sari and Prasety 2021).

Studies have been conducted rarely on the potential of various discourses in developing higher order thinking skills. A discourse is a mode of communicating certain ideas meaningfully in a particular

context (Rao et.al., 2022). Discourse constructions are idiomatic constructions with fixed and variable elements where the fixed elements capture relational meaning grounded in high-level cognitive models. (Ruiz de Mendoza & Maira ,2014).

A model based on discourse and pragmatic theory for English classroom teaching was used for enhancing the critical thinking of students in Grade 3. The findings of the study revealed that there is an increase in the learning interest, discourse construction ability and critical thinking of the students (Jia, 2021). The study on how to use critical discourse analysis to improve students' critical thinking skills suggested the reading activities through which discourse analysis help the students in enhancing critical thinking skills (Avendaño and Fonseca 2009).

In the present study, the modules for discourse construction in English prepared by the investigator is intended to enhance the critical thinking skills among secondary school students. Test of Critical Thinking Skill developed by the researcher is modelled on most highly employed test of critical thinking termed as the Watson-Glaser Thinking Appraisal. The test prepared by the researcher gives due weightage to the five components of critical thinking skill namely, recognising assumptions, inference, deduction, interpretation and evaluation of arguments. After making a thorough study of various discourses, the investigator selected twelve discourses that are suitable for developing the critical thinking skill and its component skills. For discourse construction in English, the investigator selected both spoken and written discourses suitable to permit the contextualization of language which paves way for the easy flow of thoughts, ideas and opinions. In order to ensure the active participation of the learners to construct the various discourses the researcher provided necessary inputs like appropriate reading text and other learning materials based on adequate and relevant themes. The learners engaging actively in the various stages of constructing each discourse using the given inputs is termed as discourse construction. These inputs given at the time of construction of discourses leads to the deeper comprehension of ideas and opinions through the different level of interaction and allows them to develop higher-order thinking skills.

Objective of the Study

To find out whether there is a significant enhancement in the critical thinking skill and its components namely; inference, recognition of assumptions, deduction, interpretation and evaluation of arguments of secondary school students through discourse construction in English.

Hypothesis of the Study

1.There exists a significant enhancement in the critical thinking skill of secondary school students through discourse construction in English.

2. There exists a significant enhancement in the component of critical thinking skill: inference of secondary school students through discourse construction in English.

3. There exists a significant enhancement in the component of critical thinking skill: recognition of assumptions of secondary school students through discourse construction in English.

4. There exists a significant enhancement in the component of critical thinking skill: deduction of secondary school students through discourse construction in English.

5. There exists a significant enhancement in the component of critical thinking skill: interpretation of secondary school students through discourse construction in English.

6. There exists a significant enhancement in the component of critical thinking skill: evaluation of arguments of secondary school students through discourse construction in English.

Methodology

Experimental method was adopted for the present study. For conducting the experimental study, 50 secondary school students from the state of Kerala were selected through cluster sampling. For testing the critical thinking skill, Test of Critical Thinking Skill was prepared and standardised by the researcher. Twelve modules of discourse construction in English prepared by the researcher were validated by the experts and practitioners in the field of education. Single group pretest posttest design is used for the present study. Test of Critical Thinking Skill was administered as pre-test to this group. Followed by the pretest, the selected experimental group was instructed with the modules of discourse construction prepared by the researcher for enhancing Critical thinking skill. After completing the transaction of twelve modules, Test Critical Thinking Skill was administered as post-test to this group. The difference in the score obtained in the pre-tests and post-tests were analysed using paired t-test.

Analysis of Data and Results of the Study

1.Comparison of means of critical thinking skill and its components of experimental group before and after experimentation

After experimentation, the investigator collected data on critical thinking skill and its components namely; inference, recognition of assumptions, deduction, interpretation, evaluation of arguments of

secondary school students belonging to the experimental group. The two means pretest and post test scores of each of the variables under study: critical thinking skill and its components namely; inference, recognition of assumptions, deduction, interpretation, evaluation of arguments of secondary school students were compared using test of significance of difference between means of two large dependent groups in order to check the effectiveness of discourse construction in English for enhancing critical thinking skill and its components.

Table 1

Number (N), Mean (M), Standard Deviation (SD), t-value of pretest and post -test scores on critical thinking skill of secondary school students in the experimental group

	N	M	SD	r	t-value	Level of significance
Pretest	50	15.46	3.36	0.50	12.15	0.01
Posttest	50	21.92	4.04			

Table 1 shows the comparison of mean of pretest and posttest scores of critical thinking skill in the experimental group. It is seen that the calculated t-value(t=12.15) is greater than the table t- value 2.58 at 0.01level of significance. Hence it is significant at 0.01 level. The mean of posttest score (M=21.92) of experimental group is greater than the mean of pretest score (M=15.46) of experimental group. It shows that there is enhancement in critical thinking skill through discourse construction in English.

2. Comparison of means of critical thinking skill: inference of experimental group before and after experimentation

The mean pretest and post test scores of critical thinking skill: inferencing of secondary school students was compared using test of significance of difference between means of two dependent groups in order to check the effectiveness of discourse construction in English for enhancing critical thinking skill: inference. The data and results are presented in Table 2.

Table 2

Number(N), Mean (M), Standard Deviation (SD), t-value of pretest and posttest scores of the component inference of critical thinking skill in the experimental group

	N	M	SD	r	t-value	Level of significance
Pretest	50	2.08	1.62	0.013	8.92	0.01

Posttest	50	4.62	1.29			

Table 2 shows the comparison of mean of pretest and posttest scores of the component skill namely inference in the experimental group. It is seen that the calculated t-value (t=8.92) is greater than the table t- value 2.58 at 0.01level of significance. Hence it is significant at 0.01 level. The mean of posttest score (M=4.62) of experimental group is greater than the mean of pretest score (M=2.08) of experimental group. It shows that there is enhancement in the component skill namely inference through discourse construction in English.

3. Comparison of means of critical thinking skill: recognition of assumptions of experimental group before and after experimentation

The mean pretest and post test scores of critical thinking skill: recognition of assumptions of secondary school students was compared using test of significance of difference between means of two dependent groups in order to check the effectiveness of discourse construction in English for enhancing critical thinking skill: recognition of assumptions. The data and results are presented in Table 3.

Table 3

Number(N), Mean (M), Standard Deviation (SD), t-value of pretest and posttest scores of the component recognition of assumptions of critical thinking skill in the experimental group

	N	M	SD	r	t-value	Level of significance
Pretest	50	2.64	1.10	0.019	4.50	0.01
Posttest	50	3.58	1.21			

Table 3 shows the comparison of mean of pretest and posttest scores of the component skill namely recognition of assumptions in the experimental group. It is seen that the calculated t-value (t=4.50) is greater than the table t- value 2.58 at 0.01level of significance. Hence it is significant at 0.01 level. The mean of posttest score (M=3.58) of experimental group is greater than the mean of pretest score (M=2.64) of experimental group. It shows that there is enhancement in the component skill namely recognition of assumptions through discourse construction in English.

4. Comparison of means of critical thinking skill: deduction of experimental group before and after experimentation

The mean pretest and post test scores of critical thinking skill: deduction of secondary school students was compared using test of significance of difference between means of two dependent groups in order to

check the effectiveness of discourse construction in English for enhancing critical thinking skill: deduction. The data and results are presented in Table 4.

Table 4

Number(N), Mean (M), Standard Deviation (SD), t-value of pretest and posttest scores of the component deduction of critical thinking skill in the experimental group

	N	M	SD	r	t-value	Level of significance
Pretest	50	5.00	1.78	0.46	6.20	0.01
Posttest	50	6.64	1.80			

Table 4 shows the comparison of mean of pretest and posttest scores of the component skill namely deduction in the experimental group. It is seen that the calculated t-value (t=6.20) is greater than the table t- value 2.58 at 0.01level of significance. Hence it is significant at 0.01 level. The mean of posttest score (M=6.64) of experimental group is greater than the mean of pretest score (M=5.00) of experimental group. It shows that there is enhancement in the component skill namely deduction through discourse construction in English.

5. Comparison of means of critical thinking skill: interpretation of experimental group before and after experimentation

The mean pretest and post test scores of critical thinking skill: interpretation of secondary school students was compared using test of significance of difference between means of two dependent groups in order to check the effectiveness of discourse construction in English for enhancing critical thinking skill: interpretation. The data and results are presented in Table 5.

Table 5

Number(N), Mean (M), Standard Deviation (SD), t-value of pretest and posttest scores of the component interpretation of critical thinking skill in the experimental group

	N	M	SD	r	t-value	Level of significance
Pretest	50	2.40	.83	-.18	1.54	0.01
Posttest	50	2.66	.72			

Table 5 shows the comparison of mean of pretest and posttest scores of the component skill namely interpretation in the experimental group. It is seen that the calculated t-value (t=1.54) is less than the table t- value 1.96 at 0.05level of significance. Hence it is not significant at 0.05 level. The mean of posttest score (M=2.66) of experimental group is not significantly greater than the mean of pretest score

(M=2.40) of experimental group. It shows that there is no enhancement in the component skill namely interpretation through discourse construction in English.

6. Comparison of means of critical thinking skill: evaluation of arguments of experimental group before and after experimentation

The mean pretest and post test scores of each of the variable critical thinking skill: evaluation of arguments of secondary school students was compared using test of significance of difference between means of two dependent groups in order to check the effectiveness of discourse construction in English for enhancing critical thinking skill: evaluation of arguments. The data and results are presented in Table 6.

Table 6

Number(N), Mean (M), Standard Deviation (SD), t-value of pretest and posttest scores of the component evaluation of arguments of critical thinking skill in the experimental group

	N	M	SD	r	t-value	Level of significance
Pretest	50	3.40	1.43	.16	3.67	0.01
Posttest	50	4.40	1.49			

Table 6 shows the comparison of mean of pretest and posttest scores of the component skill namely evaluation of arguments in the experimental group. It is seen that the calculated t-value (t=3.67) is greater than the table t- value 2.68 at 0.01level of significance. Hence it is significant at 0.01 level. The mean of posttest score (M=4.40) of experimental group is greater than the mean of pretest score (M=3.40) of experimental group. It shows that there is enhancement in the component skill namely evaluation of arguments through discourse construction in English.

Discussion of Results

The results of the present study reveals that discourse construction in English was effective for enhancing analytical thinking skill and its components namely; inference, recognition of assumptions, deduction, and evaluation of arguments of secondary school students. Hence the formulated hypotheses 1,2,3,4 & 6 are accepted. It is evident from the results that the calculated t-value (t=1.54) of pretest and posttest scores of the component interpretation of critical thinking skill in the experimental group is less than the table t- value 1.96 at 0.05level of significance. It is not significant at 0.05 level and hence hypothesis 5 is rejected.

Figure 1 shows the difference in the mean scores of critical thinking skill before and after experimentation. Figure 2 shows the difference in the mean scores of the component skills of critical

thinking skill namely; inference, recognition of assumptions, deduction, interpretation and evaluation of arguments before and after experimentation.

Figure 1*:* Pretest and posttest mean scores of critical thinking skill

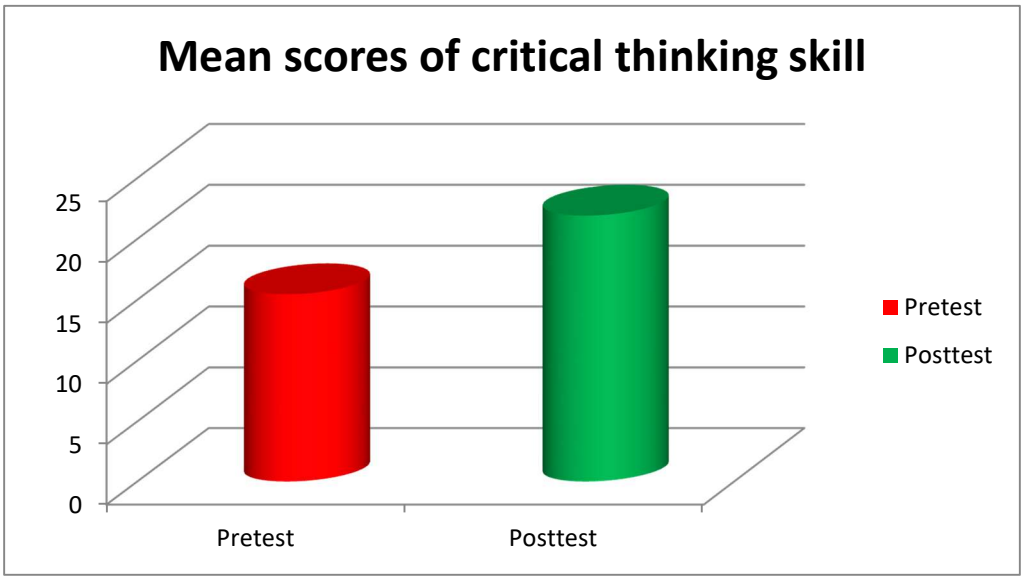
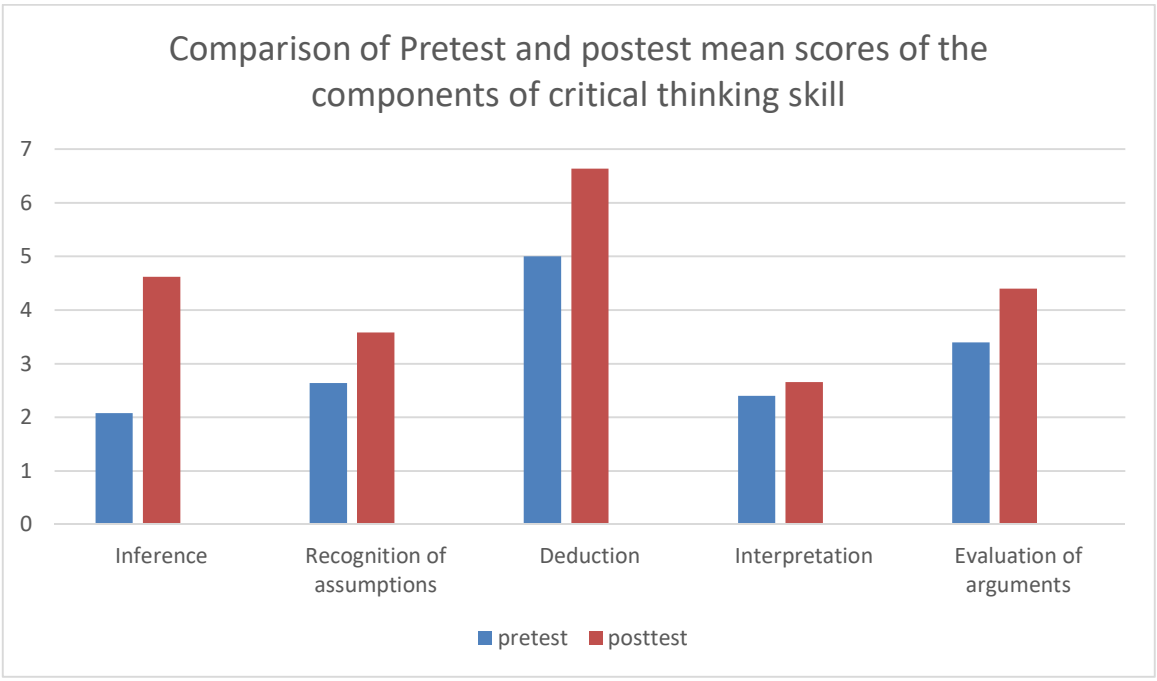


Figure 2*:* Pretest and posttest mean scores of the component skills of critical thinking skill



The above results show that there is significant enhancement in the critical thinking skills and its components namely; inference, recognition of assumptions, deduction, and evaluation of arguments of secondary school students through the construction of various discourses in English. The results also reveal that there is no significant enhancement in the component interpretation of critical thinking skill

through discourse construction in English. This is the result of the transaction of the twelve modules on discourse construction done by the researcher during the experimentation phase. The different discourses selected for the preparation of modules on discourse construction give due weightage for each of the component skills of critical thinking as mentioned in the learning outcomes of all the twelve modules. Among the four stages of the process of discourse construction, the stage 1 'General interaction' gives more importance to critical thinking skill: recognition of assumptions and critical thinking skill: deduction. During this stage the technique used is 'brainstorming' where the students critically engage in the general discussion which helped them to recognize the various assumptions related to the topic and deduce the answers. The posttest results prove that the students improved the critical thinking skill: recognition of assumptions and critical thinking skill: deduction. The stage 2 'focused interaction' gives emphasis to critical thinking skill: inference, critical thinking skill: interpretation and critical thinking skill: evaluation of arguments. The 'mind mapping' technique used for reading the authentic text helped the students to infer the meaning of the given text in the context, interpret and evaluate the ideas and it resulted in the significant enhancement of critical thinking skill: inference, critical thinking skill: interpretation and critical thinking skill: evaluation of arguments. The findings reveal that the experimentation has resulted in high achievement in critical thinking skill: inference followed by critical thinking skill: deduction. The lowest change in achievement is seen in critical thinking skill: interpretation. This shows that the discourses chosen and the process of discourse construction was most effective for enhancing critical thinking skill: inference and critical thinking skill: deduction than the other components. From the results it is evident that the prepared modules on discourse construction were effective for enhancing the critical thinking skill of secondary school students.

Discourse construction in English was effective for enhancing analytical thinking skill and its components namely; matching, differentiating, attributing, categorising and organising of secondary school students (Varghese, S.E. 2026). A sample of 172 students (120 M ,62 F) of a Dutch university of applied sciences participated in a pre -test-intervention -post -test design. The results revealed that the participants' critical thinking skills improved from pre-test to immediate post-test and even further after a delay. The findings provide evidence that a relatively brief instructional intervention is effective for enhancing critical thinking skills, which is promising for educational practice (van Peppen etal.,2021). A study conducted among Vietnamese high school students show that Coffee Shop game was effective to enhance Critical Thinking Skills. The findings suggested that educators could use problem-solving games as tools for developing critical thinking skills among secondary school students (McDonald, 2017). The effect of content-based EFL instruction in promoting critical thinking among junior high school students

showed no significant differences between the students' critical thinking scores before and after taking the lessons in content-based EFL instruction. The results also show the need for devising better instructional strategies for EFL instruction to enhance critical thinking skills in high school students (Liaw, 2007).A study titled Critical discourse analysis and critical thinking: An experimental study in an EFL context investigated the impact of critical discourse analysis (CDA) on EFL students' critical thinking ability in Reading Journalistic Texts classes.Watson Glaser Critical Thinking Appraisal was administered as the pretest and posttest for measuring the critical thinking ability. The results of the posttest indicated that CDA has a positive and significant influence on learners' critical thinking ability. CDA was also found to have the highest impact on two components of CT namely interpretation and recognizing unstated assumption (Hashemi & Ghanizadeh,2012). The results of the present study shows that discourse construction was effective for enhancing the critical thinking skill of secondary school students.

Conclusion

Critical thinking is a skill to be learned, developed, and practiced. After practicing critical thinking, it becomes more automatic and natural. Critical thinking can be fostered through critical pedagogy and constructivist approach in education. Many scholars in the field generally agree with the importance of assisting students in developing the critical thinking skills while being engaged in their academic learning process (Facione,1998; Landsberger, 1996; Halpern, 2003). It enables students to be more purposeful and self-regulatory in judgment, in their evaluation of the arguments of others and of their own, coming to well-reasoned resolutions to any complex problems and to be able to resolve conflicts encountered in their daily lives. However, there are still quite a number of educational institutions that still emphasises on 'what to think rather than how to think" (Daud & Husin, 2004). Thus, changing such pedagogical approaches from what to think to how to think would definitely require some major shifts in their belief about instructional paradigms. Such changes would require educators to think more about how they could develop their students' critical thinking skills while teaching different disciplines. The present study becomes significant in the context where the new curriculum frameworks at the global, national and state level attempt to develop the curriculum that is competent to enhance higher order thinking skills through the process of education. The present study can help the educationists and curriculum planners and teachers to design learning materials that are suitable for developing thinking skills. Further, it will help the educators and practitioners in the field of language education to explore the potential of discourse construction for enhancing the thinking skills.

References

Avendaño, C.E.M., & Fonseca, M.H. (2009). Use of discourse analysis to enhance students' critical thinking skills. *zona proxima*,2(10),36-49.

Bloom, B.S. (1956). *Taxonomy of Educational Objectives, Handbook: The Cognitive Domain.* New York: David McKay.

Chusni, M. M., Saputro, S., Suranto., & Rahardjo, S. B. (2022). Enhancing critical thinking skills of junior high school students through discovery-based multiple representations learning model. *International Journal of Instruction*, 15(1), 927-944. https://doi.org/10.29333/iji.2022.15153a

Cosgrove, Rush. (2009). *Critical Thinking in the Oxford Tutorial*. Thesis submitted to the University of Oxford in partial fulfilment for the degree of M.Sc. in Higher Education.

Daud, N.M., & Husin, Z. (2004). Developing critical thinking skills in computer-aided extended reading classes. *British Journal of Educational Technology,* 35(4), 477-487. **https://doi.org/10.1111/j.0007-1013.2004.00405.x**

Ennis, R. H. (2002). Goals for a Critical Thinking Curriculum and Its Assessment. In A. L. Costa (Ed.), *Developing Minds* (3rd ed., pp. 44-46). Alexandria, VA: Association for Supervision and Curriculum Development.

Facione, A. P. (1998). *The Complete American Philosophical Association Delphi Research Report. https://insightassessment.com/*

Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction—The Delphi report*. Millbrae, CA: California Academic Press.

Febliza, A., Afdal, Z., & Copriady, J. (2023). Improving Students' Critical Thinking Skills: Is Interactive Video and Interactive Web Module Beneficial? *International Journal of Interactive Mobile Technologies (iJIM)*, *17*(03), 70–86. https://doi.org/10.3991/ijim.v17i03.34699

Forte-Celaya, J., Ibarra, L., & Glasserman-Morales, L.D. (2021).Analysis of Creative Thinking Skills Development under Active Learning Strategies. Educ. Sci, (11), 621.

Gagne, R. M. (1968). Contributions of learning to human development. *Psychological Review, 75*(3), 177–191. https://doi.org/ 10.1037/h0025664

Halpern, D. F. (2003). Thinking critically about creative thinking. In M. A. Runco (Ed.), *Critical creative processes* (pp. 189–207). Hampton Press.

Hashemi, M.R., & Ghanizadeh, A. (2012). Critical discourse analysis and critical thinking: An experimental study in an EFL context. *Sci Verse Science Direct* ,40,37-47. http://dx.doi.org/10.1016/j.system.2012.01.009

Jia, Y. (2021). The Development of Critical Thinking in Language Learning. *Advances in Social Science, Education and Humanities Research*, 588,82-85.

Landsberger, J. (1996). Strategies for critical reading. [Online] Available: http://www.studyguidesandstrategies.com

McDonald, S.D. (2017). Enhanced Critical Thinking Skills through Problem Solving Games in Secondary Schools. *Interdisciplinary Journal of e-Skills and Lifelong Learning*, 13, 79-96.

Mulnix, J. (2012). Thinking Critically about Critical Thinking. Educational Philosophy and Theory, 44(5). DOI:10.1111/j.1469-5812.2010.00673.x

Perkins, D.N. (1981). *The Mind's Best Work*. Cambridge, MA: Harvard University Press.

Rao, N. M., Raju, T.S., & Ramesh, T. (2022). Attitude of Teachers towards Teaching English through Discourse-Oriented Pedagogy. *International Journal of Advances in Engineering and Management (IJAEM),*4(7)871-876.

Renzulli, J. S. (1976). The enrichment triad model: A guide for developing defensible programs for the gifted and talented. *Gifted Child Quarterly, 20*(3), 303–326.

Ruiz de Mendoza, J. F., Maria, A. G. G. (2014). Constructing Discourse and Discourse Constructions. Chapter in book *Theory and Practice in Functional Cognitive*

Sari, D. M. M.; Prasety, Y. (2021). Project Based-Learning on Critical Reading Course to Enhance Critical Thinking Skills. *Studies in English Language and Education*, 8(2), 442-456

van Peppen, L.M., Verkoeijen, P.P.J.L., Heijltjes, A.E.G., Janssen, E.M., & van Gog, T. (2021). Enhancing students' critical thinking skills: is comparing correct and erroneous examples beneficial? *Instructional Science*, 49,747–777. https://doi.org/10.1007/s11251-021-09559-0

Varghese, S.E. (2026). Enhancement in the Analytical Thinking Skills of Secondary School Students through Discourse Construction in English. *The Academic*, 4(4). https://doi.org/10.5281/zenodo.20126958

Watson, G., Glaser, E.M. (1980). *Watson Glaser critical thinking appraisal: manual*. Psychological Corp.