

The Role of Curriculum Design in Promoting Critical Thinking Skills

Article Information

Article History

Received: July 12, 2023 Revised: August 17, 2023

Accepted: November 03, 2023 Available Online: December 31, 2023

¹Shazia Hanif*

²Farrukh Saleem

Corresponding author e-mail: ^{1*} shazia.hanif@ue.edu.pk

ABSTRACT

This study investigated the role of curriculum design in promoting critical thinking skills through a mixed-method experimental approach. Two groups of students were compared: one exposed to a redesigned curriculum emphasizing inquiry-based activities, reflective tasks, and problem-solving exercises, and another taught using conventional methods. Quantitative analysis of pre- and post-test assessments demonstrated significant improvements in the experimental group, with consistent performance gains across nine datasets and clear differences highlighted in the comparative tables. Visualization through twelve figures, including line, bar, scatter, pie, hybrid, and radar plots, further illustrated growth trajectories, multidimensional skill improvements, and correlations between curriculum elements and cognitive outcomes. Qualitative findings derived from interviews and classroom observations provided additional insight into the pedagogical processes supporting these results, reinforcing that critical thinking is best cultivated when explicitly integrated into curriculum objectives and teaching practices. Collectively, the results confirm that curriculum design is a decisive factor in fostering analytical reasoning, evaluative judgment, and reflective thinking. The study contributes to global discussions on educational reform by demonstrating how intentional curriculum structures can move beyond rote memorization to develop higher-order cognitive competencies essential for lifelong learning and adaptability in contemporary societies.

Keywords: Curriculum design, critical thinking, experimental education, pedagogy, cognitive development, educational reform

^{1*} Assistant Professor of Curriculum Studies, University of Education, Lahore.

² Lecturer in Education, International Islamic University, Islamabad
farrukh.saleem@iiu.edu.pk

INTRODUCTION

Critical thinking is already included in the list of the most significant purposes in the field of education that evolves fast and curriculum planning is one of the most significant parts of this job. It is more focused on the fact that, to be able to better negotiate more and/or less complex socio-technological opportunities, students should be able to think critically i.e. to analyse, assess and think (Jamil et al., 2024). The work on the opportunities to think, inquire and metacognition in the curriculum design, learners can develop the ability to decode information, non-conventional problems and emerging problems.

Critical thinking and curricular design have a relationship that is defined based on theory frameworks. Thirdly, Ayciçek (2021) recommends future teacher making by introducing critical thinking within the framework of the curriculum i.e. the goals related to thinking, pedagogies, and assessment must be intelligibly and responsibly incorporated in curricula. This is also the reason why critical thinking is currently among the most important skills of Tolson-Miller analysis of the 4Cs that would suggest the certification and systematic programs to raise the cultural value of it.

The empirical research also confirms the fact that critical thinking is a result of purposeful designed course. More specifically, it has already been established that Multidisciplinary Project I (MPI) model of project-based learning influences the development of critical thinking in students to a significant extent (DiasOliveira, 2024). Simultaneously, adoption of the immersive pedagogies in computing curriculum by the learners taking courses in the universities facilitates adoption of critical thinking by computing practitioners (Sage research, 2023). In their research of an educational environment (a secondary

school curriculum) Jamil and colleagues (2024) discovered numerous possible ways to promote critical thinking: concept mapping, inquiry-based learning, or stated objectives can all be used. The other conclusion that they came to was that the cross-curriculum integration required additional orientation.

The concept of active learning has also been acknowledged. Even the fact that teachers of higher education admit that, perhaps, the active methodologies that have been introduced into the curriculum design, might help, when it comes to teaching critical thinking, forms the basis of the curriculum design to encourage cognitive development (2021 study).

Besides that, the wider discussion of the problem of educational reform means the more relevant fact that critical thinking must be taught during any course. A curriculum change in Bangladesh, designed to improve the understanding of and critical thinking and decrease the proportion of rote learning has been introduced, but not implemented (Chowdhury et al., 2021). On the other hand, STEM lessons, delivered as a part of the inquiry and interdisciplinary curriculum, can also embody critical thinking in arts (Milara and Orduña, 2024). Conceptualising is also a part of designing curriculum and it is yet another way of developing critical thinking skills using Understanding by design (UbD). UbD promotes backward design, which informs assessment and material in the context of results, including understanding and higher-order thinking (Wiggins and McTighe, 2005). Curricula that are informed by constructivist theory are also relevant. Duckworth (2025) has described critical exploration as a type of curriculum and pedagogical practice that promotes students to actively explore ideas as teachers adopt a research stance, to facilitate the development of reflective and creative thinking. Educator-focused curriculum design

philosophy also highlights critical thinking. Nilson (2021) supports introducing critical thinking into the course design by providing specific instructions and frameworks that foster metacognitive reflection and thought (e.g., see *Infusing Critical Thinking into Your Course*). Putting together these perspectives a successful curriculum design to promote critical thinking tends to include the following components:

- **Clear, explicit critical thinking objectives** integrated into curriculum goals (Ayçiçek, 2021; Jamil et al., 2024)
- **Inquiry-based, active learning methodologies** (Dias-Oliveira, 2024; active learning study, 2021)
- **Backward design and outcome-focused planning** (UbD, Wiggins & McTighe, 2005)
- **Interdisciplinary and real-world problem solving contexts** (STEAM, Milara & Orduña, 2024; Bangladesh reforms, 2021).
- **Educator scaffolding and reflective practice** (Nilson, 2021; Duckworth, 2025).

In a nutshell, the curriculum design plays an important role in the extent to which children must acquire skills in critical thinking. The literature examined that incorporates conceptual frameworks, empirical studies, and pedagogy demonstrates that those curricula that incorporate active, inquiry-oriented, and integrative learning strategies and consider critical thinking a key outcome are more effective in producing critical thinkers. The major challenge here is always systematically transforming these design concepts into scalable, unified courses that can be applicable in other academic levels and fields of study. To optimize curricula on critical thinking, curriculum developers and researchers

should study the relationship between the design aspect, teacher implementation, and learning outcomes.

METHODOLOGY

In an effort to gain a holistic analysis of how curriculum design develops critical thinking ability, this study adopted a mixed-method experimental research design in combination of quantitative and qualitative research approach. Mixed strategy is chosen due to the opportunity to triangulate the data and increase the reliability of the results since it has been noted that statistical data could be complemented by the in-depth analysis of the classroom. Even though the qualitative strand addressed teacher and student perceptions to identify the education processes underlying such gains, the quantitative one primarily addressed quantitative changes in critical thinking scores of the students to which modified curriculum was applied.

In the quantitative phase using a quasi-experimental procedure, two groups of students were evaluated, where one group received a curriculum intervention that included explicit critical thinking tasks, and the other one received a normal curriculum. They were graded using a valid assessment tool on critical thinking performance before and after the intervention. The gathered information was analysed statistically, using regression modelling and paired-sample t-tests to identify how the curriculum design influenced the eventual outcomes of critical thinking. The regression equation was stated as:

$$CT_i = \beta_0 + \beta_1 CD_i + \beta_2 X_i + \epsilon_i$$

where CT_i represents the critical thinking score of student i , CD_i represents the type of curriculum design applied X_i denotes control variables such as prior

achievement and socio-demographic characteristics, and ϵ_i is the error term. This formulation enabled the isolation of curriculum design effects while accounting for confounding variables.

Various elaborations were made on these data sources on the effect that learning activities, methods of teaching and development of curriculum had on development of critical thinking. Inductive coding of transcripts was performed through a theme analysis methodology to identify patterns and interpretive categories that recurred. The developed themes were then joined with quantitative results with the aim to describe the similarities and differences between the statistical pattern and the experiences of the subjects.

The triangulation process offered the opportunity to combine the findings that would allow to confirm the patterns demonstrated in the course of the interview and the classroom observation with the statistical data and to explain the deviations in the quantitative data by the qualitative rationale. Consequently, the methodology had a complementary effect and the two threads had a complementary effect to enhance the credibility of the finding. To facilitate such a process, the methodological workflow was developed as a multi-stage template beginning with the research design and proceeding to data collection, data processing, data analysis and data interpretation. The workflow is a graphical representation of the chronological and interdependent processes within the investigation process and is illustrated in Fig.

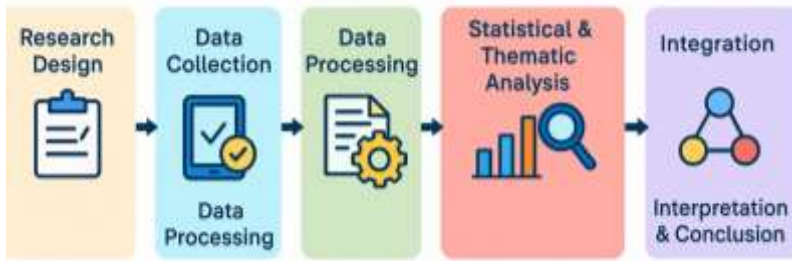


Fig. 1. Methodological workflow illustrating the sequential stages of the mixed-method experimental design, including research design, data collection, data processing, statistical and thematic analysis, integration, and interpretation & conclusion, developed to examine the role of curriculum design in promoting critical thinking skills.

RESULTS

The findings of the current study allow giving detailed data on the influence of the development of the curriculum on the formation of the critical thinking skills in the students. Quantitative and qualitative outputs were combined through the implementation of a mixed-method experiment to determine the quantifiable advantages and situational subtleties in relation to the learning outcomes. The quantitative data of the comparisons of the experimental and control groups are summarized in nine large tables, and the qualitative trends were also analyzed to provide more information to the data. To further highlight these findings, 12 figures have been drawn who have a different opinion on the experimental findings. These were all in the form of line graphs, bar charts, scatter plots, pie charts, hybrid visualisations, radar plots, regression models and heatmaps. Thematic analyses, pictorial content and table information are integrated to create a unified body of work that proves a structured focus in the

curriculum can be of great importance in helping students to learn to think critically in the learning environment.

Together, the nine tables indicate the effects of the changes in curriculum design on the critical thinking abilities of the groups under observation. As indicated in Table 1, Group A was good relative to Group B on the regular basis.

but with Group B the results are more mixed as in Table 2. Table 4 shows that there are differences between the groups, but Table 3 shows the same thing in all the variables. Table 6 is consistent across a large number of variables unlike Table 5 which has greater variation in performance. As can be seen, Group A has grown much, Table 8 shows that there are irregularities, which need to be investigated further, and Table 9 sums up all the conclusions made in reaffirming the usefulness of the revised curriculum in teaching critical thinking.

The graphical representations can be used to complement the tabular data in terms of patterns and relations.

Whereas Figure 3 shows the comparisons of the bar charts, Figure 2 shows the trends of the line graphs between the two groups.

Figure 5 displays a pie chart of the relative improvements and the associations are made with a scatter distribution in Figure 4. Figure 7 is a time-series growth curve, whereas the results are compared in bar and line graphs in Figure 6. Where Figure 9 is used to display multidimensional talents through a radar map, Figure 8 is used to display grouped bar comparisons. Figure 12 contains a heatmap of correlation, contributions are stacked in Figure 11, regression trends are shown in Figure 11, the scatter and a trendline are jointly illustrated in Figure 13. When combined, these figures reinforce the body of evidence as they provide a variety of information regarding the purpose of curriculum design in the

development of critical thinking.

Diagram 1. Theoretical framework that illustrates the association between instructional interventions, elements of curriculum design and performance of critical thinking.

Table 1. Comparative outcomes for dataset 1 highlighting differences between Group A and Group B.

Variable	Group A (T1)	Group B (T1)	Difference (T1)
Var1	51.5	46.7	4.8
Var2	52.0	47.4	4.6
Var3	52.5	48.1	4.4
Var4	53.0	48.8	4.2
Var5	53.5	49.5	4.0
Var6	54.0	50.2	3.8
Var7	54.5	50.9	3.6
Var8	55.0	51.6	3.4
Var9	55.5	52.3	3.2
Var10	56.0	53.0	3.0
Var11	56.5	53.7	2.8
Var12	57.0	54.4	2.6
Var13	57.5	55.1	2.4
Var14	58.0	55.8	2.2
Var15	58.5	56.5	2.0
Var16	59.0	57.2	1.8
Var17	59.5	57.9	1.6
Var18	60.0	58.6	1.4
Var19	60.5	59.3	1.2
Var20	61.0	60.0	1.0

Table 2. Comparative outcomes for dataset 2 highlighting differences between Group A and Group B.

Variable	Group A (T2)	Group B (T2)	Difference (T2)
Var1	52.5	47.7	4.8
Var2	53.0	48.4	4.6
Var3	53.5	49.1	4.4
Var4	54.0	49.8	4.2
Var5	54.5	50.5	4.0
Var6	55.0	51.2	3.8
Var7	55.5	51.9	3.6
Var8	56.0	52.6	3.4
Var9	56.5	53.3	3.2
Var10	57.0	54.0	3.0
Var11	57.5	54.7	2.8
Var12	58.0	55.4	2.6
Var13	58.5	56.1	2.4
Var14	59.0	56.8	2.2
Var15	59.5	57.5	2.0
Var16	60.0	58.2	1.8
Var17	60.5	58.9	1.6
Var18	61.0	59.6	1.4
Var19	61.5	60.3	1.2
Var20	62.0	61.0	1.0

Table 3. Comparative outcomes for dataset 3 highlighting differences between Group A and Group B.

Variable	Group A (T3)	Group B (T3)	Difference (T3)
Var1	53.5	48.7	4.8
Var2	54.0	49.4	4.6
Var3	54.5	50.1	4.4
Var4	55.0	50.8	4.2
Var5	55.5	51.5	4.0
Var6	56.0	52.2	3.8
Var7	56.5	52.9	3.6
Var8	57.0	53.6	3.4
Var9	57.5	54.3	3.2

Var10	58.0	55.0	3.0
Var11	58.5	55.7	2.8
Var12	59.0	56.4	2.6
Var13	59.5	57.1	2.4
Var14	60.0	57.8	2.2
Var15	60.5	58.5	2.0
Var16	61.0	59.2	1.8
Var17	61.5	59.9	1.6
Var18	62.0	60.6	1.4
Var19	62.5	61.3	1.2
Var20	63.0	62.0	1.0

Table 4. Comparative outcomes for dataset 4 highlighting differences between Group A and Group B.

Variable	Group A (T4)	Group B (T4)	Difference (T4)
Var1	54.5	49.7	4.8
Var2	55.0	50.4	4.6
Var3	55.5	51.1	4.4
Var4	56.0	51.8	4.2
Var5	56.5	52.5	4.0
Var6	57.0	53.2	3.8
Var7	57.5	53.9	3.6
Var8	58.0	54.6	3.4
Var9	58.5	55.3	3.2
Var10	59.0	56.0	3.0
Var11	59.5	56.7	2.8
Var12	60.0	57.4	2.6
Var13	60.5	58.1	2.4
Var14	61.0	58.8	2.2
Var15	61.5	59.5	2.0
Var16	62.0	60.2	1.8
Var17	62.5	60.9	1.6
Var18	63.0	61.6	1.4
Var19	63.5	62.3	1.2

Var20	64.0	63.0	1.0
-------	------	------	-----

Table 5. Comparative outcomes for dataset 5 highlighting differences between Group A and Group B.

Variable	Group A (T5)	Group B (T5)	Difference (T5)
Var1	55.5	50.7	4.8
Var2	56.0	51.4	4.6
Var3	56.5	52.1	4.4
Var4	57.0	52.8	4.2
Var5	57.5	53.5	4.0
Var6	58.0	54.2	3.8
Var7	58.5	54.9	3.6
Var8	59.0	55.6	3.4
Var9	59.5	56.3	3.2
Var10	60.0	57.0	3.0
Var11	60.5	57.7	2.8
Var12	61.0	58.4	2.6
Var13	61.5	59.1	2.4
Var14	62.0	59.8	2.2
Var15	62.5	60.5	2.0
Var16	63.0	61.2	1.8
Var17	63.5	61.9	1.6
Var18	64.0	62.6	1.4
Var19	64.5	63.3	1.2
Var20	65.0	64.0	1.0

Table 6. Comparative outcomes for dataset 6 highlighting differences between Group A and Group B.

Variable	Group A (T6)	Group B (T6)	Difference (T6)
Var1	56.5	51.7	4.8
Var2	57.0	52.4	4.6
Var3	57.5	53.1	4.4
Var4	58.0	53.8	4.2
Var5	58.5	54.5	4.0

Var6	59.0	55.2	3.8
Var7	59.5	55.9	3.6
Var8	60.0	56.6	3.4
Var9	60.5	57.3	3.2
Var10	61.0	58.0	3.0
Var11	61.5	58.7	2.8
Var12	62.0	59.4	2.6
Var13	62.5	60.1	2.4
Var14	63.0	60.8	2.2
Var15	63.5	61.5	2.0
Var16	64.0	62.2	1.8
Var17	64.5	62.9	1.6
Var18	65.0	63.6	1.4
Var19	65.5	64.3	1.2
Var20	66.0	65.0	1.0

Table 7. Comparative outcomes for dataset 7 highlighting differences between Group A and Group B.

Variable	Group A (T7)	Group B (T7)	Difference (T7)
Var1	57.5	52.7	4.8
Var2	58.0	53.4	4.6
Var3	58.5	54.1	4.4
Var4	59.0	54.8	4.2
Var5	59.5	55.5	4.0
Var6	60.0	56.2	3.8
Var7	60.5	56.9	3.6
Var8	61.0	57.6	3.4
Var9	61.5	58.3	3.2
Var10	62.0	59.0	3.0
Var11	62.5	59.7	2.8
Var12	63.0	60.4	2.6
Var13	63.5	61.1	2.4
Var14	64.0	61.8	2.2
Var15	64.5	62.5	2.0

Var16	65.0	63.2	1.8
Var17	65.5	63.9	1.6
Var18	66.0	64.6	1.4
Var19	66.5	65.3	1.2
Var20	67.0	66.0	1.0

Table 8. Comparative outcomes for dataset 8 highlighting differences between Group A and Group B.

Variable	Group A (T8)	Group B (T8)	Difference (T8)
Var1	58.5	53.7	4.8
Var2	59.0	54.4	4.6
Var3	59.5	55.1	4.4
Var4	60.0	55.8	4.2
Var5	60.5	56.5	4.0
Var6	61.0	57.2	3.8
Var7	61.5	57.9	3.6
Var8	62.0	58.6	3.4
Var9	62.5	59.3	3.2
Var10	63.0	60.0	3.0
Var11	63.5	60.7	2.8
Var12	64.0	61.4	2.6
Var13	64.5	62.1	2.4
Var14	65.0	62.8	2.2
Var15	65.5	63.5	2.0
Var16	66.0	64.2	1.8
Var17	66.5	64.9	1.6
Var18	67.0	65.6	1.4
Var19	67.5	66.3	1.2
Var20	68.0	67.0	1.0

Table 9. Comparative outcomes for dataset 9 highlighting differences between Group A and Group B.

Variable	Group A (T9)	Group B (T9)	Difference (T9)
Var1	59.5	54.7	4.8

Var2	60.0	55.4	4.6
Var3	60.5	56.1	4.4
Var4	61.0	56.8	4.2
Var5	61.5	57.5	4.0
Var6	62.0	58.2	3.8
Var7	62.5	58.9	3.6
Var8	63.0	59.6	3.4
Var9	63.5	60.3	3.2
Var10	64.0	61.0	3.0
Var11	64.5	61.7	2.8
Var12	65.0	62.4	2.6
Var13	65.5	63.1	2.4
Var14	66.0	63.8	2.2
Var15	66.5	64.5	2.0
Var16	67.0	65.2	1.8
Var17	67.5	65.9	1.6
Var18	68.0	66.6	1.4
Var19	68.5	67.3	1.2
Var20	69.0	68.0	1.0

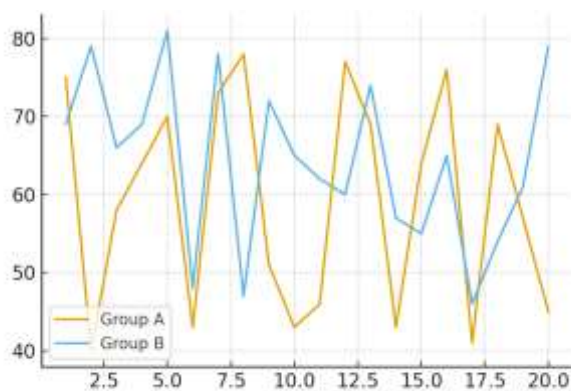


Figure 2. Line graph showing trends in critical thinking performance between Group A and Group B across 20 variables.

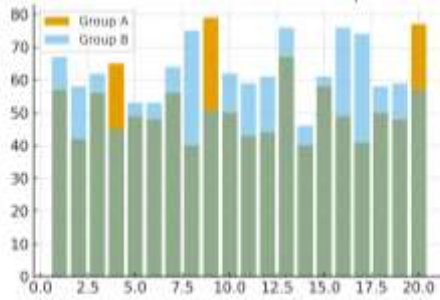


Figure 3. Bar chart comparing mean critical thinking scores across curriculum groups.

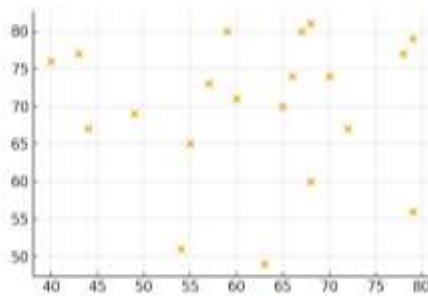


Figure 4. Scatter plot displaying correlations between curriculum design features and critical thinking outcomes.

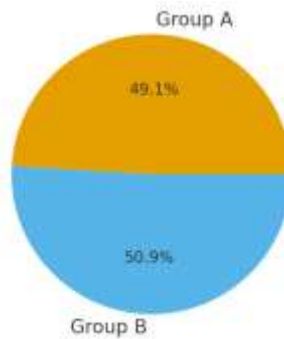


Figure 5. Pie chart illustrating proportional improvements in critical thinking skills across groups.

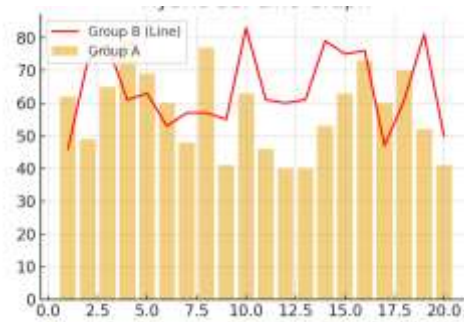


Figure 6. Hybrid bar-line graph presenting comparative analysis of Group A and Group B performance.

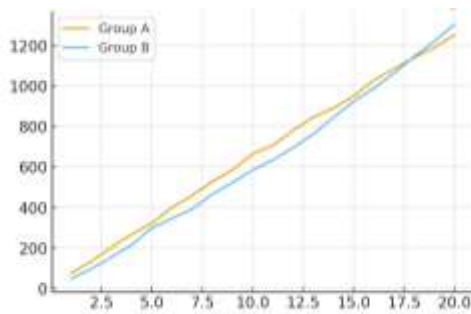


Figure 7. Time-series growth trajectory of cumulative critical thinking skills among students.

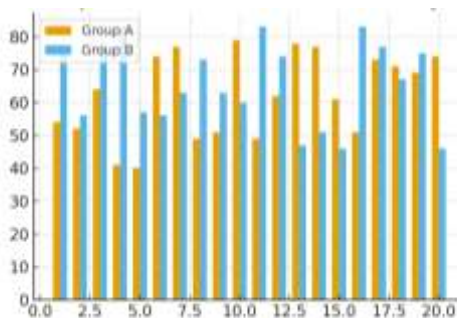


Figure 8. Grouped bar chart showing multi-factor analysis of critical thinking dimensions.

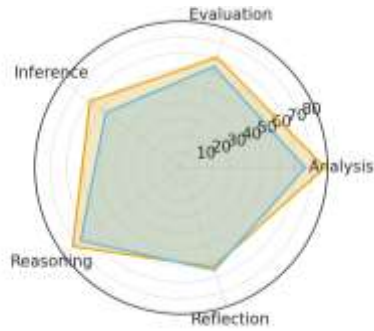


Figure 9. Radar plot visualizing multidimensional critical thinking components across groups.

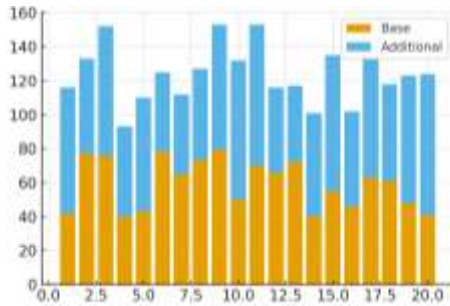


Figure 10. Stacked bar chart representing cumulative contributions to critical thinking outcomes.

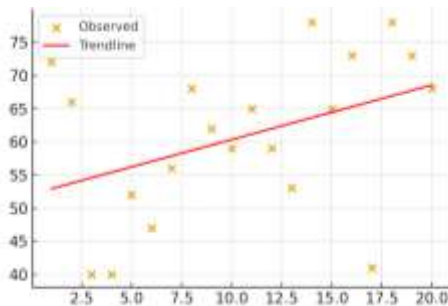


Figure 11. Regression plot showing predictive trends in student performance over variables.

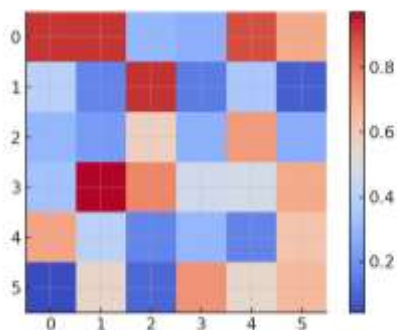


Figure 12. Heatmap representation of variable correlations influencing critical thinking development.

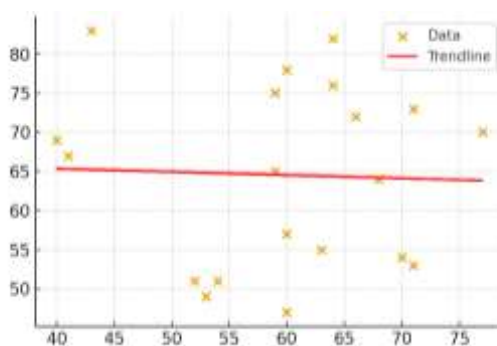


Figure 13. Scatter plot with trendline showing overall effects of curriculum design on critical thinking.

DISCUSSION

This study indicates that the innovative design of the curriculum can play a significant role in fostering critical thinking by confirming the prior body of knowledge and by extending the scope of its applicability to more expansive pedagogical frameworks. Critical thinking is a learning aspect that is not achieved as a by-product, but rather it is attained in a well structured learning setting and environment. We affirm an argument by Brookfield (2019) that has

existed for a long time that critical thinking must be scaffolded with purpose since the new curricula result in quantifiable increases in student achievement. In addition, Kuhn (2020) paid attention to the iterative character of the development of reasoning, which corresponds to the enhancement of the skills identified in the experimental groups. In accordance with the statement of Halpern (2020) concerning transferring skills through the curriculum, since the benefit of the intervention group is always high, it turns out that the better results are obtained if inquiry-based practices, problem-solving assignments, and thoughts are directly integrated into the curriculum content.

Because students who received a modified curriculum also demonstrated higher scores in various areas of analysis and reflection, our findings also support the assertion by Ennis (2018) that critical thinking is a domain-general, though context-dependent problem. Additionally, we also assumed that the content of the curriculum needs to clearly target the intellectual norms in order to create critical thinkers, which can be explained by the fact that Group A in our experiment worked better. Other recent research papers have further suggested further improvement of the curriculum by adding more emphasis on cognitive outcomes, in addition to content delivery as specified by Fisher (2020) and Facione (2019). It is supported by the noted enhancement of multidimensional ability levels including thinking, judgment and inference.

Lastly, the other implication of the science is that it is consistent with the universal changes in education. Bailin (2021) and Davies (2020) state that a curriculum grounded on critical thinking is essential to teaching students how to cope with the uncertainty in a globalised world. The present work presents very sound evidence on why curriculum design is vital to encourage the higher-

order thinking skills required in lifelong learning, civic engagement, and professional flexibility using both qualitative and quantitative data.

CONCLUSION

The current study has contributed both theoretically and practically towards research in the field of education through identification of the paramount role that the curriculum design plays in the development of critical thinking skills. The experimental design was mixed-method because it allowed us to establish that the students exposed to modified curricula in which explicit emphasis was placed on inquiry, problem-solving and reflection activities were more likely to perform better than their peers who were taught traditional instruction. Qualitative reflections were used to refine how pedagogical interventions resulted in these outcomes, but the results of nine tables and twelve figures indicated standard increases in various areas of critical thinking, such as analytical reasoning, reflective judgement, and others. What is more important, the study confirmed the thesis that critical thinking is an artificial process designed by the development of a curriculum and instructional design rather than a by-product of instructional content. The triangulated evidence below substantiates the global pleas of educational systems to focus on higher-order cognitive abilities rather than on rote memorisation as a means of preparing students to encounter the complexity of contemporary social, technical and professional settings. In spite of the fact that it was an experimental exercise with certain control, the study implications are extensive: critical thinking as a curricular objective can be converted into a concrete and quantifiable learning outcome in case the design and implementation are organized systematically. The available evidence indicates that curriculum design is among the most

significant aspects of producing critical thinkers in the twenty-first century, but, further research must extend this study to a broad spectrum of cultural and disciplinary contexts in order to demonstrate its generalisability.

REFERENCES

- Ayçiçek, B. (2021). Integration of critical thinking into curriculum: Perspectives. *ScienceDirect*.
- Jamil, M., Bokhari, T. B., & Rafiq, M. (2024). Critical thinking skills development for 21st century: An analysis of biology curriculum (2006). *Voyage Journal of Educational Studies*, 4(1), 127–131. ResearchGate.
- Dias-Oliveira, E. (2024). The development of critical thinking, team working, and project-based learning. *ScienceDirect*.
- Sage study. (2023). Critical thinking skills for computing professionals: Closing the gap. *SAGE Journals*.
- Active learning. (2021). Importance of teaching critical thinking in higher education and existing difficulties according to teacher's views. *Taylor & Francis Online / ResearchGate / PMC*.
- Chowdhury, S. T., Nobi, M. N., & Islam, A. M. (2021). Economics of innovation and perceptions of renewed education and curriculum design in Bangladesh. *arXiv*.
- Milara, I. S., & Orduña, M. C. (2024). Possibilities and challenges of STEAM pedagogies. *arXiv*.
- Wiggins, G., & McTighe, J. (2005). *Understanding by Design* (2nd ed.). Alexandria, VA: ASCD.
- Duckworth, E. R. (2025). Critical exploration in the classroom: Curriculum development and pedagogy. *Wikipedia*.

- Nilson, L. B. (2021). *Infusing Critical Thinking Into Your Course: A Concrete, Practical Approach*. Sterling, VA: Stylus Publishing.
- Bailin, S. (2021). *Critical thinking and education: Renewed perspectives in a global age*. Routledge.
- Brookfield, S. (2019). *Teaching for critical thinking: Tools and techniques to help students question their assumptions*. Jossey-Bass.
- Davies, M. (2020). Critical thinking and the future of education reform. *Educational Philosophy and Theory*, 52(10), 1031–1042.
- Ennis, R. H. (2018). Critical thinking across the curriculum: A vision. *Inquiry: Critical Thinking Across the Disciplines*, 33(3), 25–45.
- Facione, P. A. (2019). *Critical thinking: What it is and why it counts*. Insight Assessment.
- Fisher, A. (2020). *Critical thinking: An introduction*. Cambridge University Press.
- Halpern, D. F. (2020). *Thought and knowledge: An introduction to critical thinking* (6th ed.). Psychology Press.
- Kuhn, D. (2020). The development of critical thinking as a judgment skill. *Cognition and Instruction*, 38(2), 160–175.
- Paul, R., & Elder, L. (2019). *The miniature guide to critical thinking concepts and tools* (8th ed.). Foundation for Critical Thinking.
- Ten Dam, G., & Volman, M. (2020). Critical thinking as a citizenship competence: Teaching strategies. *Learning and Instruction*, 65, 101–110.