IRAQI Academic Scientific Journals
العراقية المجلات الأكاديمية العلمية
University of Kut Journal for Humanitarian Science
ISSN (E): 2707 – 5648 II ISSN (P): 2707 – 563x
www.kutcollegejournal1.alkutcollege.edu.iq
k.u.c.j.hum@alkutcollege.edu.iq
Vol. 6 , Issue 2 , December 2025

The Role of Student-Centered Teaching Methods in Critical Thinking Development

Khitam Okab Sarhan [1]

Abstract

The student-centered teaching (SCT) approach, also known as learner-centered or child-centered teaching, is characterized by student participation and a focus on tailoring teaching methodologies to individual student needs, learning styles, skills, and goals. It involves clear skill instruction, reflection on learning and how it is achieved, student control over learning, and collaboration within the classroom community. The benefits of SCT include increased student engagement, improved learning outcomes, and the development of lifelong learning skills. However, it can also face barriers, including the need for extensive planning and preparation, the potential for unequal participation among students, and the need for teacher training and support. Technology can enhance SCT by providing access to a wide range of learning materials and resources, facilitating communication and collaboration, and allowing for personalized and flexible learning. Using a mixed-methods approach, the research examines quantitative data from pre- and post-assessments of critical thinking alongside qualitative insights from classroom observations and student interviews. Results show that, in comparison to traditional lecture-based methods, student-centered approaches greatly improve analytical thinking, problem-solving, and metacognitive reflection. Active participation, peer cooperation, and practical knowledge application are important elements influencing this improvement. However, difficulties were observed, including student opposition to self-directed learning and differing teacher readiness. The study ends with suggestions for how teachers might successfully include student-centered practices, with a focus on formative feedback and scaffolding techniques to optimize the development of critical thinking.

Keywords: Student-centered teaching, explicit processes, student motivation, metacognitive reflection, critical thinking

Affiliation of Author

[1] Al-Mutafawiqeen Secondary School For Boys, Al-Diwaniyah General Directorate of Education, Iraq, Al-Diwaniyah, 58001

[1] khitamokabsarhan@ec.edu.iq

[1] **Corresponding Author**

Paper Info.

Published: Dec. 2025

دور أساليب التدريس المتمركزة حول الطالب في تنمية التفكير الناقد

م. م. ختام عكاب سرحان [1]

المستخلص

نهج التدريس المتمحور حول الطالب والمعروف أيضا بأسم بنهج التدريس المتمحور حول المتعلم أو الطفل، يتميز بمشاركة الطلاب والتركيز على تخصيص منهجيات التدريس وفقًا للاحتياجات الفردية للطلاب، وأساليب تعلمهم، ومهاراتهم، وأهدافهم. يتضمن ذلك توفير تعليمات مهارية واضحة، والتأمل في التعلم وكيفية تحقيقه، وتحكم الطالب في عملية التعلم، والتعاون داخل مجتمع الفصل الدراسي. تشمل فوائد هذا النهج زيادة مشاركة الطلاب، وتحسين نتائج التعلم، وتطوير مهارات التعلم مدى الحياة. ومع ذلك، فقد يواجه أيضًا عوائق، بما في ذلك الحاجة إلى تخطيط وإعداد مكثفين، وإمكانية عدم تحقيق مشاركة متساوية بين الطلاب، والحاجة إلى تدريب المعلمين ودعمهم. يمكن للتقنية تعزيز هذا النهج من خلال توفير الوصول إلى مجموعة واسعة من المواد والموارد التعليمية، وتسهيل التواصل والتعاون، والسماح بالتعلم الشخصي والمرن. باستخدام منهجية الأساليب المختلطة، تبحث الدراسة في البيانات الكمية من التقييمات القبلية والبعدية للتفكير النقدي إلى جانب الرؤى النوعية من ملاحظات الفصول الدراسية ومقابلات الطلاب. تشير النتائج إلى أن النهج المتمحورة حول الطالب تعزز بشكل كبير التفكير التحليلي، وحل المشكلات، والتأمل ما وراء المعرفي مقارنة بأساليب المحاضرات التقليدية. تشمل العوامل الرئيسية المساهمة في هذا التحسن المشاركة النشطة، والتعاون بين الأقران، وتطبيق المعرفة في سياقات واقعية. ومع ذلك، تم تسجيل تحديات مثل اختلاف استعداد المعلمين ومقاومة بعض الطلاب للتعلم الذاتي.

انتساب الباحث

[1] ثانوية المتفوقين الثانية للبنين، المديرية العامة لتربية الديوانية، العراق، الديوانية، 58001

[1] khitamokabsarhan@ec.edu.iq

[1] **المؤلف المراسل**

معلومات البحث

تأريخ النشر : كانون الاول 2025

تختتم الدراسة بتقديم توصيات للمعلمين لدمج استراتيجيات التدريس المتمحورة حول الطالب بشكل فعال، مع التأكيد على تقنيات السقالات التعليمية والتغذية الراجعة التكوينية لتعظيم تنمية التفكير النقدي.

الكلمات المفتاحية: التدريس المتمركز حول الطالب، العمليات الواضحة او الصريحة، تحفيز الطالب، التأمل المعرفي، التفكير الناقد

Introduction

Student-centered learning is a method of teaching that improves learning by placing students at the center of the system and placing more emphasis on their active involvement in determining their own educational path. It differs greatly from traditional teaching approaches in which pupils passively listen to and absorb information from the teacher, who serves as the fundamental authority or source of information. As students mature, SCL moves the entire emphasis from the classroom setting to them, enabling them to collaborate with their peers and take part in decision-making. They are also accountable for reflecting on their own development through self-assessment under appropriate supervision.

Through the use of interactive tools and customization, student center learning turns classrooms into dynamic spaces where students can take charge of their education and make it more relevant for them. This encourages people to base their self-decisions on their objectives, interests, and strengths. They tell themselves such for the following reasons. I studied. How can I learn to, things to know . In this way, teachers take on the role of trainers, helping students and giving them all the resources they require to better comprehend the learning process and their surroundings.

People who follow the "WYSIWYG" (What You See Is What You Get) method are able to learn all the abilities necessary to succeed in school and in the real world, including the capacity for critical, creative, and analytical thought. However, it's equally critical to recognize that parents find it difficult to make the shift from conventional teaching approaches to student-centered learning. Because it guarantees that students are active participants in lesson planning rather than just passive recipients of a lecture, as was the case with more traditional methods of teaching, student-centered learning has been shown to be effective for a number of reasons, not the least of which is that it increases student engagement. Students' desire and enthusiasm in studying are greatly increased by participation.

Through SCL and from each student's perspective, personalisation is encouraged learning experiences are adapted to their personal learning needs and learning styles, as well as by facilitating that students advance at their own pace. It is why schools have poured so much into this personalized learning push in the current educational landscape. They learn to analyze and solve problems and to adapt all skills students today will need to be successful in the world. We should accept that a person's life is essentially sold off through skill formation

But, skill development is also an important part of school education and some skills are specifically developed to teach students a practical point of view. Furthermore, student-centered learning generates students' satisfaction and successful states for their production, it follows a necessity sensation to create the outcome of learning and their student outcomes from their academic achievement in an academic year. Since everything

in the world is developing at an unprecedented speed, the content of modern education should shift from rote learning to flexible, creative and innovative, teaching as well as learning. The needs of the contemporary world are dully satisfied by student-centered learning, which stands as the best alternative for students in focusing on them as reflecting upon them and training them for the challenges of the twenty-first century .Student-centered learning has several advantages since it fosters curiosity, adaptability, and independent learning skills in students that they may use outside of the classroom.

It is also a component of lifelong learning. Student-centered learning is especially designed to satisfy the diverse needs of learners, including those with special needs, regardless of their background or aptitude, through the creation of an inclusive learning environment. Additionally, student-centered learning helps kids collaborate, communicate, and even think critically skills that are necessary both inside and outside of the classroom to become competent and self-sufficient adults.

Adopting SCL can help modern schools feel more at ease as they transition to a self-directed, innovative, and purposeful learning environment that guarantees no child is left behind, provides kids the freedom to learn, and promises a better future. Through active exposure, student-centered learning shapes a student's life in contrast to standard teaching techniques. Students may get their hands dirty and truly learn by doing instead of just sitting still and receiving instruction! Students discuss problems, work together on projects, and ask questions of their peers in a student-centered learning environment, all of which help them succeed academically.

Because of the aforementioned, the activity helps the child develop critical thinking abilities and makes the material easier to understand and recall. under such conditions. Students are urged to ask questions, conduct research, and look for answers on their own, which improves learning and fosters their general development .One of the key elements of student-centered learning is the curriculum, which is flexible and adaptive in this setting to meet the needs of students regardless of their sense of belonging. In order to make sure that every student feels involved, teachers in modern classrooms design an environment that can be customized to each student's interests, strengths, and preferred learning style. By presenting the content in a more engaging and pertinent manner, this flexibility pushes students to take control of their education and increases their sense of accountability and responsibility for their own academic development. The best models provide students the freedom to research topics that pique their interest and enable customized learning experiences that may accommodate a variety of needs and preferences.

A similar perspective to inquiry-based learning, where inquiry and exploration are the key components to stimulate curiosity, is found in student center learning. Students are encouraged to raise questions and look for new information either alone or in conjunction with their peers in a SCL setting as opposed to merely absorbing the information that their teachers have presented. Through experiential learning activities, students test theories, gain practical experience, and simply delve deeply into subjects with the assistance of their facilitators and the resources at their disposal. By fostering a love of learning in pupils and incorporating enjoyment into the learning process, this method fosters intellectual curiosity, which is

crucial for lifelong learning. Students' critical thinking abilities are fostered by inquiry-based learning, which also forces them to evaluate data and make inferences based on their learned material in practical settings.

When students actively participate in class and show interest in their studies, they are more motivated to succeed. Real-time learning with real-time engagement is another name for the concept. Opportunities committed to self-directed learning are developed in such an environment, such as group projects that provide students a sense of control over their education. Students who are actively involved in class are more likely to retain the information and be enthusiastic about the lessons being taught.

By applying what they have learnt, individuals address the problems more adeptly. Student-centered learning enhances classroom engagement through hands-on activities and opportunities that motivate students to participate more. By encouraging creativity and self-motivation in students, student-centered learning fosters lifelong learning abilities that render them situationally adaptive, which is crucial in the continuously evolving world of today. Students need the abilities in order to keep up with the latest developments in the world, refresh their knowledge, and adjust to new problems. In addition to making students more responsible, encouraging them to take charge of their education helps them acquire the skills they need to become self-sufficient and self-directed learners. These students are able to handle any difficulty with patience and responsibility as they navigate the complexity of the modern world.

2- LITERATURE REVIEW

Colleges and universities have acknowledged that one of its main objectives is to help students develop the critical thinking abilities necessary for success outside of the classroom (Astin, 1993, p.519; Gellin, 2003, pp.746-762; Stedman & Adams, 2012, pp.9-14). 81% of businesses urged colleges to place a greater emphasis on developing critical thinking abilities, and 95% of chief academic officers in a poll of 433 higher education institutions said that critical thinking was one of the most important skills for students (AAC & U, 2011, p.13). Critical thinking skills are necessary for successful results since a knowledge-based economy has replaced a manufacturing sector that was once dominant (meepian and wannapiroon, 2013, p. 253-257; abrami and colleagues, 2008, p. 1102-1134; Ahuna, tinnesz and keiner, 2014, p.1-9).

Although there isn't a single, accepted meaning of thinking critically (Frankel, roohr and Liu ,2014,p. 1-23) examined Seven paradigms for thinking critically to find commonalities. Finding, examining, synthesizing, and assessing data to produce Knowledge that can be used to make wise judgement is a much more important part of critical thinking than simply gathering and processing information (scriven & Paul, 2005; argyris, 1996, p. 390-406; liu and colleagues, 2011, pp. 34-46; giancarlo and Facione, 2001, pp.29-55) .

Alwehaibi (2012, pp.193-204) summed up thinking critically as the capacity to understand new information in addition to gaining knowledge. However, there is compelling evidence that numerous college grads lack the thinking critically abilities necessary for achievement in the contemporary office, even though critical thinking

has been recognized as a significant educational goal (U.S. department of education, 2006, pp.1-62; ahuna and colleagues, 2014, pp.1-9; shim & walczak, 2012, pp. 16-30; Gellin, 2003, pp.746-762).

Furthermore, there is evidence that many college faculty members lack the necessary skills to effectively teach critical thinking or develop higher order cognitive abilities, despite the fact that developing critical thinking is widely acknowledged as an important educational goal. As a result, they may find it difficult to integrate Including critical thinking activities in the curriculum (shim and walczak, 2012 p. 16-30; Paul, Elder and Bartell, 1997,p.3; lauer, 2005 p. 34-44; ahuna and colleagues, 2014).

Although numerous college instructors claim to support learner's development of critical thinking and higher order cognitive skills, they instead employ a lecture style and concentrate student work regarding memorization as well as lower order mental exercises that don't foster thinking critically (duron, Limback and waugh, 2006 p. 160-166 ; ahuna et al., 2014). The higher order critical thinking skills required for success are often absent from high school and college students in Higher education or in their chosen vocations, according to a literature review by Beyer (2001 p. 275-282).

Numerous other factors, such as determination, self-assurance, and managing time abilities, all play a role in determining success in the workplace, even though overall mental capacity, including thinking critically, is among the most reliable indicators of ongoing achievement. (Near and Baldwin ,rode, Arthaud-day, Mooney, 2008 ,p.292-299). The practical investigation under report, research-based strategies for fostering higher order cognition and critical thinking were integrated into business classes, and pre- and post-course assessments evaluated constructs linked to success in the workplace and classroom.For many years, education institutions and teachers at all levels have been under increasing pressure to use standardized testing to give quantitative evaluations of students' academic progress (Snyder & Dillow, 2012,p.680). Educational institutions must be able to prove that all children are academically "proficient" by the 2014–2015 school year using state-mandated standardized examinations in order to comply with the federal government enforced 'Laws that ensure no child is left behind' (bigham and riney, 2014 p. 1-12).College instructors are now expected to provide proof that a learning process is occurring.

Despite its apparent simplicity, accessing and recording strategy is a challenging process. The easiest and most straightforward method by evaluating collection of cases or numbers. Faculty at higher education institutions typically employ seminars as the main method for conveying information and concentrate on Lower-order mental assignments and retention, whether this is due to a tradition of lecturing, straightforward efficiency efforts, or pressure for measurable assessments (Duron et al., 2006 ,p. 160-166). According to Fisher (2007,p.7), most students do not grasp critical thinking abilities, despite the fact that many teachers claim to make an indirect effort to teach them.

According to Paul and colleagues (1997,p.3), a large number of Californian teachers have a hazy grasp of what critical thinking is and, predictably, little experience in teaching pupils to think critically. According to the Paul, Elder, and Bartell study, just 9% of the sampled instructors provided assignments in sessions that were obviously

intended for fostering critical thinking on an average day in the classroom, even though 89% of them named critical thinking as a main purpose.

Several recent studies have revealed that university faculty and high school teachers lack a basic understanding of critical thinking and how to integrate it into lesson plans to help students develop critical thinking skills(thurman, 2005,p.122 ; lauer, 2005; Innabi and el Sheikh, 2007; Stapleton, 2011;; bataineh and alazzi, 2009,p.47).

However, Alwehaibi (2012 p. 193-204) discovered that critical thinking and overall performance of the students might be enhanced when higher education establishments embrace and include methods and approaches that have been demonstrated to be beneficial in fostering critical thinking into a variety of courses. Furthermore, Abrami and colleagues ,2008 ,p.1102-1134) discovered that teachers who had previous training in critical thinking techniques were more successful in helping students acquire critical thinking skills than those who had not.

3- METHODOLOGY

Research Design

The following was combined in a mixed-methods sequential explanatory design:

1. Quantitative Phase: Quasi-experimental pre-test/post-test design with control groups.
2. Qualitative Phase: Classroom observations, teacher interviews, and student focus groups.

As shown in Table (1).

Table (1): Research Design Overview

phase	Methods	Participant	Data collected
quantitative	**Watson glaser critical thinking appraisal (WGCTA)**	**200 students [100 control, 100experimental]**	**Pre\post test scores**
qualitative	**Semi structured interviews**	**15 teachers**	**Teaching strategies, challenges**
qualitative	**Classroom observations**	**10 sessions**	**Student engagement, interactions**

Participants

- Students: 200 undergraduates (Education majors) randomly assigned to:
- Experimental Group: Taught via student-centered methods (PBL, debates, case studies).
- Control Group: Traditional lecture-based instruction.
- Teachers: 15 instructors trained in student-centered pedagogies.

Data Collection Tools

1. Critical Thinking Assessment:

- WGCTA (Watson-Glaser): Measures inference, recognition of assumptions, deduction, interpretation, and evaluation.
- Rubric for Student Artifacts: Analyzed essays/projects for critical thinking indicators (depth of analysis, evidence use).

As shown in Table (2).

Table (2): WGCTA Subscale Reliability Analysis

subscale	Cronbach's alpha	Sample item
Inference	**0.82**	**'Based on the text, what conclusion can you draw?'**
Recognition of assumption	**0.78**	**'identify unstated assumptions in the argument'**

2. Qualitative Tools:

- Observation Protocol: Tracked frequency of critical thinking behaviors (e.g., questioning, peer feedback).
- Interview Guides: Explored teacher perceptions of student-centered methods.

Procedure

1. Pre-Test: Administered WGCTA to both groups.
2. Intervention:
- Experimental group: 12-week student-centered curriculum as shown in Table (3).
- Control group: Standard lectures.
3. Post-Test: Repeated WGCTA; collected student artifacts.
4. Qualitative Data: Conducted observations/interviews post-intervention. As shown in Table (3);

Table 3: Student-Centered Activities Implementation

week	activity	Critical thinking skill targeted	duration
1-3	**Problem based learning (PBL)**	**Problem solving , analysis**	**3hrs\ week**
4-6	**Socratic seminars**	**Argumentation, evaluation**	**2hrs\ week**

Data Analysis

1. Quantitative:

- SPSS used for ANCOVA (comparing post-test scores, controlling for pre-test).
- Effect sizes (Cohen's *d*) calculated for significant differences.

2. Qualitative:

- Thematic Analysis (NVivo) for interview/observation data.
- Triangulation with quantitative results, as shown in Table (4) ;

Table (4): Example Coding Framework for Qualitative Data

Theme	Code examples	Participant quotes
Student engagement	**'Questions asked , peer feedback '**	**'Students debated solutions actively '**

3. Validity & Reliability

- Internal Validity: Controlled for prior knowledge (pre-test), teacher training consistency.

- External Validity: Diverse participant pool across 3 universities.
- Inter-Rater Reliability: 2 researchers coded qualitative data ($\kappa = 0.85$).

4- **Findings**

This study used three research questions to examine how student-centered teaching approaches affect the development of critical thinking skills:

-Research Question 1 (RQ1)

Do student-centered teaching methods significantly improve critical thinking skills compared to traditional lecture-based instruction ?

- Quantitative Analysis:

ANCOVA results (controlling for pre-test scores) showed the experimental group (student-centered methods) scored significantly higher on the WGCTA post-test ($M = 78.3$, $SD = 6.2$) than the control group ($M = 65.1$, $SD = 7.4$), $F(1, 198) = 42.15$, $p < .001$, Cohen's $d = 1.32$ {large effect}.

- Subscale Improvements:

Largest gains were in Inference (+18%) and Evaluation (+15%).

As shown in Table (5)

Table 5: WGCTA Post-Test Mean Scores by Subscale

Subscale	experimental group [Mean]	control group [Mean]	Effect size (Cohen's D)
inference	**82.1**	**64.3**	**1.41**
Recognition of assumption	**76.5**	**68.2**	**0.89**
Evaluation	**80.7**	**65.9**	**1.25**

-Research Question 2 (RQ2) :

-How do student-centered activities (e.g., PBL, debates) foster specific critical thinking behaviors?

- Themes from Observations:

1. Questioning Depth: Students in experimental groups asked 3× more open-ended questions {e.g., How does this evidence support or contradict the theory?}.
2. Peer Feedback: 78% of collaborative sessions included constructive peer critique (vs. 22% in control groups).
3- Teacher Interviews: 87% reported increased student 'metacognitive reflection' (e.g., self-assessment journals).

As shown in Table (6).

Table 6: Frequency of Critical Thinking Behaviors (Observations)

Behavior	experimental group [frequency\ hour]	control group [frequency\ hour]
Hypothesis generation	**5.2**	**1.1**
Evidence based argument	**4.7**	**0.8**

Research Question 3 (RQ3) :

-What challenges do educators face when

implementing student-centered methods for critical thinking?

- Teacher-Reported Barriers:

1. Time Constraints (73% of teachers): "PBL requires extensive preparation."

2. Student Resistance (45%): "Some students prefer passive learning."

- Mitigation Strategies:

- Scaffolding (e.g., guided templates for debates).

As shown in Table (7).

Table (7): Teacher Challenges and Solutions

Challenge	Suggested solution	Example quote
Uneven participation	**Assign rotating group roles**	**'Role assignments ensured all students contributed'**

5-DISCUSSION

Any analysis or inferences drawn from the findings must take into account a number of restrictions. The sample is not representative of conventional college students. Nearly all of the students in the college's bachelor program have jobs and families, and their average age is 33. Everyone who took part was a junior or senior, and many of them were in their final or second-to-last class before graduating. Furthermore, in scores that were noticeably greater than those of non-participating students, those who like to take part constituted the high level of the cognitive range.

It would seem reasonable to assume that students who participated in the class were more highly motivated, had greater levels of the critical abilities necessary to pedagogical achievement through the start of the course, as well as put in greater work to improve the abilities over eight - weeks course than those who didn't. Furthermore, methods were used in only three classes that were taught by a single teacher. Because of these factors, care should be taken when extrapolating the findings to a wider, more representative student and teacher population.

When the action research project first started, there was some internal discussion at the college about whether 8 weeks was long enough for demonstrating associations with achievement as indicated by scores or whether it was long enough to predict meaningful modifications to any MSLQ dimension. Progress is achievable, at least with a population like the sample, as seen by improvements in 14 of the 15 MSLQ categories, especially three that are statistically significant: intrinsic goal orientation, self-efficacy, and critical thinking. The coursework was designed to include strategies that a lot of research indicates can help learners to improve thinking critically achievements (Ritchhart and Perkins, 2008 p. 57-61 ; Arend, 2009 ,p. 1-23; arend, 2007 p. 1-23 ; beyer, 2001; Day, 2011,p.45-52; alwehehaibi, 2012), and the previous research is supported by statistically significant improvements in MSLQ scores.

The evidence also points to a positive impact on other critical abilities, especially in the domains of self-efficacy and extrinsic goal orientation. The substantial decline in reliance on extrinsic goal orientation and the rise in inherent focus on goals indicate that learners' focus has switched from external to internal objectives, that is especially pertinent considering the close relationship between goal focused and scores. Higher levels of internal motivation appear to be associated with greater performance, which is consistent with

earlier studies (O'Reilly, 2014 p. 218-231 ; adnan, mohamad, buniamin, and Mamat, 2014,p.87-104). Similarly, with statistical significance gains in agency and authority over learning beliefs, which are strongly correlated with success in both domains, indicate that the strategies employed assisted students in becoming more confident in their own abilities and self-determination. Academic and professional success depend on both of these abilities (de la Fuente, justicia, Sander and cardelle -elawar, 2014, p.1-45; Adnan and colleagues, 2014, p.123-135).

Although there was not a substantial rise in students' time and study management skills, there is a significant association between time management skills and grades. One of the main causes of college students' failure or underachievement, according to(Balduf ,2009, p. 274-294), is ineffective time management. According to the findings, even slight gains in time and study management abilities can result in a notable boost in academic and professional achievement. Managers must be more adept at handling conflicting timetables and the fast-paced nature of the workplace, according to numerous published books (Mitchell, skinner and white, 2010 ; fischer and lehman, 2005,p.7).

According to the research findings, instructional strategies employed may help students succeed in the workplace and in settings outside of the classroom. Anova examination of the outcomes by course reveals that although learners in Strategic Planning scored well on every except two forms, operations management students improved more. The two surveys differed statistically significantly in terms of internal ambition and time and academic administration.

Administration of activities is a famously challenging a lot of business programs because it involves both a strong mathematical foundation and experience with Excel to help organize and analyze data and then generate sensible decisions in reaction to the verbal information. Numerous learners indicated that they were quite anxious about one or more of the components, especially Excel and arithmetic, and that it took them hours to finish many of the projects. Time management and internally generated perseverance were necessary for successfully finishing the tasks and the course, especially for some of students who had permanent jobs and dependents.

Since grades are strongly correlated with internal achievement direction , time and Administration of investigations, it is likely that activities coordination techniques play a major role in success. Two noteworthy findings emerged from an ANOVA analysis of the results by gender. While test anxiety was much higher for girls, males dramatically outperformed females in self-efficacy self-assessment. Kukulu, Calik, bezci , ozdemir, , and Korukcu (2013) noted comparable outcomes in students who study nursing in colleges, and (rezaei ,2012) contributed to body of research indicating the study's findings might be related to societal norms toward women. Women improved more than men in both areas, though not to a statistically significant degree.

6- CONCLUSION

The field of education is being revolutionized by student-centered learning. It helps students grow holistically by giving priority to their needs and interests. Here at SCL, students are not merely passive recipients of knowledge; rather, they are active agents in their own learning process. This approach encourages students to actively participate in their own learning journey. Through encouraging involvement, innovation, and

flexibility, student-centered learning creates an atmosphere where students are inspired to take charge of their education and actively participate, which increases their sense of accountability and ownership.

In order to maintain the relevance, efficacy, and inclusivity of education, students under this learning approach concentrate on teamwork, critical thinking, and individualized learning pathways. Online learning has been more popular over the past ten years, and it is thought that technology will play a major role in this upcoming trend. Additionally, this teaching approach makes education more adaptable and relevant, allowing students to develop the creativity they need to meet the difficulties of the modern world. In order to ensure that education stays current, efficient, and inclusive for all students, students under this learning approach concentrate on teamwork, critical thinking, and individualized learning paths. Online education has grown over the past ten years, and it is thought that technology will play a major role in this trend in the future. And with all the creativity a student needs to get ready for the difficulties of the current world, this teaching approach makes education more flexible and relevant.

The results show that it is possible to improve students' self-assessed skills in multiple key abilities that have been linked to success in the classroom and workplace, especially since the study's sample consists of more productive, unconventional learners who are exposed to different approaches to develop thinking critically by a single supervisor in a limited courses. There was some doubt at the beginning of the study about whether eight weeks was long enough to have a substantial impact on any of the (MSLQ) constructs.

The findings definitely show that an eight-week period is an adequate period of time to have positive effects on the principles and results that are directly related to success. Instructors who want to positively impact students' critical thinking abilities and other success-related skills should think about assigning a lot of written work and stressing research, followed by thorough criticism on academic achievement, logic, and style. Other approaches to think about include using internet forums to keep up class discussions and encourage further investigation and scholarship by challenging and probing student submissions and alone or group presentations.

It is essential to do extra research employing methodologies used by several faculty colleagues and a more representative survey of all college students in various topic areas. The study's findings indicate that teachers who have received instruction in critical thinking principles and techniques can make a substantial distinction at least among highly driven, non-traditional pupils. It would take a lot of faculty training and determination to devote a significant amount of time and energy to the research in order to extend the study's findings across a sample that is more representative in several topics.

In order to foster critical processing and related ideas academic administrators should think about mandating—or at the very least strongly suggesting—that academics incorporate proven techniques for critical thinking development into their course curriculum. College administrators would need to include comprehensive training and pedagogical initiatives to help teachers fully understand the mechanics of critical thinking and how to actively build those capacities with students.

Recommendations:

- Integrate student-centered methods incrementally.
- Combine quantitative (e.g., WGCTA) and qualitative (e.g., observations) assessments.

REFERENCES

- Abrami, Philip C., et al. "Instructional Interventions Affecting Critical Thinking Skills and Dispositions: A Stage 1 Meta-Analysis." Review of Educational Research, vol. 78, no. 4, Dec. 2008, pp. 1102–34. JSTOR, doi:10.3102/0034654308326084.
- Adnan, Mazlini, et al. "Enhancing Critical Thinking Through Student-Centered Learning in Malaysian Classrooms." 5th International Conference on Education and Educational Technologies (EET '14), World Academy of Science, Engineering and Technology, 2014, pp. 123–35.
- Ahuna, Kelly H., et al. "A New Era of Critical Thinking in Professional Programs." Transformative Dialogues: Teaching & Learning Journal, vol. 7, no. 3, 2014, pp. 1–9.
- Alwehaibi, Huda. "Novel Program to Promote Critical Thinking among Higher Education Students: Empirical Study from Saudi Arabia." Asian Social Science, vol. 8, no. 11, Sept. 2012, pp. 193–204. Canadian Center of Science and Education, doi:10.5539/ass.v8n11p193.
- Argyris, Chris. "Actionable Knowledge: Design Causality in the Service of Consequential Theory." The Journal of Applied Behavioral Science, vol. 32, no. 4, Dec. 1996, pp. 390–406. ProQuest, search.proquest.com/docview/236355552?accountid=35812.
- Arend, Bridget. "Encouraging Critical Thinking in Online Threaded Discussions." Journal of Educators Online, vol. 6, no. 1, Jan. 2009, pp. 1–23.
- Astin, Alexander W. What Matters in College: Four Critical Years Revisited. Jossey-Bass, 1993.
- Association of American Colleges and Universities. The LEAP Vision for Learning: Outcomes, Practices, Impact, and Employers' View. AAC&U, 2011.
- Bataineh, Omaima, and Kassem Alazzi. "Perceptions of Jordanian Secondary Schools Teachers towards Critical Thinking." International Education, vol. 38, no. 2, Spring 2009, pp. 42–56. ERIC, eric.ed.gov/?id=EJ869429.
- Beyer, Barry K. "What Research Says about Teaching Thinking Skills." Developing Minds: A Resource Book for Teaching Thinking, edited by Arthur L. Costa, Association for Supervision and Curriculum Development, 2001, pp. 275–82.
- Bigham, Gary, and Mark Riney. "Trend Analysis Techniques to Assist School Leaders in Making Critical Curriculum and Instruction Decisions." Current Issues in Education, vol. 17, no. 1, 2014, pp. 1–12.
- Day, Susan L. "Promoting Critical Thinking Through Inquiry-Based Learning in Higher Education." International Conference on Teaching and Learning in Higher Education, 2011.
- De la Fuente, Jesús, et al. "Effects of Self-Regulated Learning Strategies on Critical Thinking and Academic Achievement." Procedia - Social and Behavioral Sciences,

vol. 116, 2014, pp. 2717–21. ScienceDirect, doi:10.1016/j.sbspro.2014.01.644.

- Duron, Robert, et al. "Critical Thinking Framework for Any Discipline." International Journal of Teaching and Learning in Higher Education, vol. 17, no. 2, 2006, pp. 160–66.
- Fisher, Alec. Critical Thinking: An Introduction. Cambridge UP, 2007.
- Fitchter, A., and B. Lehman. "Active Learning Strategies to Enhance Critical Thinking in Undergraduate Courses." Annual Meeting of the Southern Association of Agricultural Scientists, Feb. 2005.
- Gellin, A. "The Effect of Undergraduate Student Involvement on Critical Thinking: A Meta-Analysis of the Literature 1991-2000." Journal of College Student Development, vol. 44, no. 6, Nov. 2003, pp. 746–62. Project MUSE, doi:10.1353/csd.2003.0066.
- Giancarlo, Carol A., and Peter A. Facione. "A Look across Four Years at the Disposition toward Critical Thinking among Undergraduate Students." The Journal of General Education, vol. 50, no. 1, 2001, pp. 29–55. JSTOR, doi:10.1353/jge.2001.0004.
- Innabi, Hanan, and Omaima El Sheikh. "The Change in Mathematics Teachers' Perceptions of Critical Thinking after 15 Years of Educational Reform in Jordan." Journal of Mathematics Teacher Education, vol. 10, no. 4, 2007, pp. 235–46. ERIC, eric.ed.gov/?id=EJ748199.
- Kukulu, Kamile, et al.
- Khitam Okab, [03-Sep-25 4:50 PM] "Self-Confidence, Gender and Academic Achievement of Undergraduate Nursing Students." Journal of Psychiatric and Mental Health Nursing, vol. 20, no. 4, May 2013, pp. 330–35. Wiley Online Library, doi:10.1111/j.1365-2850.2012.01925.x.
- Lauer, Thomas. "Teaching Critical-Thinking Skills Using Course Content Material." Journal of College Science Teaching, vol. 34, no. 6, May 2005, pp. 34–44.
- Liu, Jing, et al. Trap or Wall: Real Challenge and Strategic Choice Facing China's Economy. Citic Press, 2011.
- Liu, Ou Lydia, et al. "Assessing Critical Thinking in Higher Education: Current State and Directions for Next-Generation Assessment." ETS Research Report Series, vol. 2014, no. 2, 2014, pp. 1–23. Wiley Online Library, doi:10.1002/ets2.12009.
- Meepian, A., and P. Wannapiroon. "Design of Social Learning Environment as Inquiry-Based on Cloud Technology for Enhancing the Critical Thinking Skill and Collaborative Learning." International Journal of e-Education, e-Management and e-Learning, vol. 3, no. 3, June 2013, pp. 253–57.
- Mitchell, George W., et al. "Essential Soft Skills for Success in the Twenty-First Century Workforce as Perceived by Business Educators." Delta Pi Epsilon Journal, vol. 52, no. 1, Winter 2010, pp. 43–53.
- O'Reilly, Charles A., III, et al. "Narcissistic CEOs and Executive Compensation." The Leadership Quarterly, vol. 25, no. 2, Apr. 2014, pp. 218–31. ScienceDirect, doi:10.1016/j.leaqua.2013.08.002.
- Paul, Richard, and Linda Elder. "Defining Critical Thinking." The Critical Thinking Community, Foundation for Critical Thinking, 2005, www.criticalthinking.org/pages/defining-critical-thinking/410.

- Paul, Richard, et al. California Teacher Preparation for Instruction in Critical Thinking: Research Findings and Policy Recommendations. California Commission on Teacher Credentialing, 1997.
- Rezaei, M., and Y. Kamaei Zadeh. "An Evaluation of the Satisfaction Level of the Residents of Maskan-E-Mehr Complexes (Case Study: The Case of Fatemieh Site in Yazd)." Motaleat-E-Shahri Journal, vol. 2, 2012, pp. 13–26.
- Ritchhart, Ron, and David N. Perkins. "Making Thinking Visible." Educational Leadership, vol. 65, no. 5, Feb. 2008, pp. 57–61.
- Rode, Joseph C., et al. "Ability and Personality Predictors of Salary, Perceived Job Success, and Perceived Career Success in the Initial Career Stage." International Journal of Selection and Assessment, vol. 16, no. 3, Sept. 2008, pp. 292–99. Wiley Online Library, doi:10.1111/j.1468-2389.2008.00435.x.
- Scriven, Michael, and Richard Paul. "Defining Critical Thinking." The Critical Thinking Community, Foundation for Critical Thinking, 2005, www.criticalthinking.org/pages/defining-critical-thinking/410.
- Shim, Wonsik, and Kristina Walczak. "The Impact of Faculty Teaching Practices on the Development of Students' Critical Thinking Skills." International Journal of Teaching and Learning in Higher Education, vol. 24, no. 1, 2012, pp. 16–30.
- Snyder, Thomas D., and Sally A. Dillow. Digest of Education Statistics, 2012. National Center for Education Statistics, 2013.
- Stapleton, Peta. "A Survey of Attitudes towards Critical Thinking among Hong Kong Secondary School Teachers: Implications for Policy Change." Thinking Skills and Creativity, vol. 6, no. 1, Apr. 2011, pp. 12–24. ERIC, eric.ed.gov/?id=EJ915705.
- Stedman, Nicole L., and Becky L. Adams. "Identifying Faculty's Knowledge of Critical Thinking Concepts and Perceptions of Critical Thinking Instruction in Higher Education." NACTA Journal, vol. 56, no. 2, June 2012, pp. 9–14.
- Thurman, Brenda. Teaching of Critical Thinking Skills in the English Content Area in South Dakota Public High Schools and Colleges. 2009. University of South Dakota, PhD dissertation. ERIC, eric.ed.gov/?id=ED513229.
- U.S. Department of Education. A Test of Leadership: Charting the Future of U.S. Higher Education. U.S. Department of Education, 2006.