

# The strengthening critical thinking literacy: Through mentoring system non-formal education in Indonesia

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## Rafforzare l'esercizio del pensiero critico: il sistema di *mentoring* nell'educazione non formale in Indonesia

The mentoring methods used by mentors in non-formal institutions can strengthen critical thinking in learners. Using a qualitative approach incorporating observation, interviews, and document analysis, this study examines how mentoring methods enhance students' critical thinking skills. The qualitative research determines the mentoring system by mentors, strengthening crucial thinking by collecting relevant information, compiling logical analysis, and emphasizing data quality through interviews, observations, and documentation studies. Mentoring by Moderator Iman (*Modim*), a term used by mentors, is a solution in non-formal communities established from 2003 to 2025 (22 years). It utilizes mentoring as a tool for strengthening critical thinking among learners. The research examines methods employed by *Modim*'s mentoring system to enhance learners' critical thinking culture through a five-method approach. *Modim* serves as an egalitarian person, motivator, companion, and appreciator who acts with empathy.

I metodi di mentoring utilizzati dai mentori nelle istituzioni non formali possono rafforzare il pensiero critico negli apprendenti. Utilizzando un approccio qualitativo che incorpora osservazione, interviste e analisi documentale, questo studio esamina come i metodi di mentoring migliorino le competenze di pensiero critico degli studenti. La ricerca qualitativa determina il sistema di mentoring dei mentori, rafforzando il pensiero critico attraverso la raccolta di informazioni pertinenti, la compilazione di analisi logiche e l'enfasi sulla qualità dei dati raccolti tramite interviste, osservazioni e studi documentali. Il mentoring di Moderator Iman (*Modim*), termine usato dai mentori, è una soluzione nelle comunità non formali istituite dal 2003 al 2025 (22 anni). Utilizza il mentoring come strumento per rafforzare il pensiero critico tra gli apprendenti. La ricerca esamina i metodi impiegati dal sistema di mentoring *Modim* per migliorare la cultura del pensiero critico degli apprendenti attraverso un approccio a cinque metodi. *Modim* agisce come persona egualitaria, motivatore, compagno e apprezzatore con empatia.

**Keywords:** Critical thinking; Egalitarian; Emphatically; Mentors; Motivator.

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## 1. Introduction and literature review

In a social environment with rapidly changing information, in addition to knowledge transfer, mentors or teachers must also help learners develop their problem-solving skills and guide them in collecting data for analysis, assessment, and decision-making. This ability of learners to solve problems and overcome life's challenges is referred to as critical thinking (Lin, Hwang, Chang & Hsu, 2021). The study reveals that preservice teachers' practicum experiences are shaped by controllable and uncontrollable factors, with preparedness, emotional disposition, and mentor-mentee relationships significantly influencing outcomes, necessitating further exploration and policy adjustments in teacher education (Mohabi, 2023). Critical thinking is essential for learners to develop through strong collaboration between learners and mentors, which can lead to high levels of satisfaction and self-confidence (Guerrero, Ali & Attallah, 2022).

In learning, the role of mentors in non-formal institutions and teachers in formal institutions plays a crucial part in enabling learners or students to think critically. Mentors or teachers as companions must have the best strategies to improve their students' critical thinking skills through the mentor's treatment of learners; best practices from mentor attitudes are researched and found to be able to encourage critical thinking, so that learners tend to develop their ability to think critically (Mahdi, Nassar & Almuslamani, 2020). Students enjoy interactive, reflective, and creative non-formal education spaces that foster critical thinking, autonomy, and engagement with real-life issues through diverse, visual, and experiential learning methods (Díaz, 2024).

Most tutors make students the objects of their work and consider themselves more competent and more experienced than their students, resulting in an unequal relationship between mentors and learners that hinders the development of critical reasoning. The inegalitarian social distance between mentors and learners can impede the development of students' critical thinking skills due to the lack of open and collaborative interactions (Mahdi *et al.*, 2020). The role of a mentor is generally more focused on the learning and achievement of their students. Professional development is undoubtedly one of the most critical aspects of quality improvement activities in teaching (Tias & Tongjean, 2022).

The most common conventional tasks assigned by mentors to learners are memorizing texts and writing summaries, which don't provide opportunities for critical thinking. Learners often listen and are given the same tasks to do, reducing the chance for deeper thinking (Rahiem, 2020). The conventional approach of mentors assumes that by providing practical teaching, learners will become more diverse in making decisions related to their learning activities, thereby achieving academic success (Head, 2019). In traditional one-way teaching, learners often struggle to understand, and there are limited opportunities to ask questions, leading to a lack of motivation to continue learning and hindering the development of critical thinking (Lin *et al.*, 2021).

It is worth exploring whether history teachers work autonomously in designing their teaching processes, as independently established schools do not always grant accompanying autonomous rights, making it challenging for them to act as effective facilitators for their learners. Rather than being friends with learners, they can be discussion friends to enhance learners' critical thinking abilities, which has a positive impact on the participants. Because self-confidence and open-mindedness can help them improve their critical thinking skills (Muthmainnah, Ibna Seraj & Oteir, 2022).

Empathy can strengthen critical thinking in students. Mentors need to build mentoring relationships characterized by mutual trust, compassion, and emotional engagement to support students' social-emotional, cognitive, and identity development, which contributes to positive learning outcomes (Lyons, McQuillin & Henderson, 2019). Mentors generally cannot act to meet the needs of learners because an integrated curriculum already exists. Government-regulated, which focuses on achieving established basic competencies, managing classes, and evaluating learners with tests, assignments, and assessments. In this case, prioritizing academic achievement was emphasized (Bravo González & Reiss, 2023). In this case, we should empathize less with the condition of students with different abilities.

Appreciation is crucial for learners and teachers who foster critical thinking in students; it is essential to seek various ways to value each learner, taking into account their strengths, weaknesses, and boundaries (Fügener, Grahl, Gupta & Ketter, 2022). The importance of appreciation from mentors towards learners enables the development of students' critical thinking and metacognitive skills through trusting

and adaptive interactions (Forte, 2015).

Very few experimental studies have been conducted to strengthen the critical reasoning of learners. To fill this gap, this paper presents a systematic review of studies on approaches to mentoring systems to enhance essential rationale. The studies reviewed demonstrate that a companion is a crucial person in supporting critical thinking. Future studies can utilize learning analytics to gain a fine-grained understanding of learners, enabling the provision of support that best suits individual learners (Wong, Baars, Davis, Van Der Zee, Houben & Paas, 2019). However, our knowledge of the design features of collaborative learning processes in companion learning support groups remains limited. Based on a teacher survey of lesson study, this study found that facilitators' focus on learner thinking, the quality of materials, and the duration of lesson study were significantly associated with teacher participation in an effective inquiry process, which in turn was associated with perceived positive changes in teacher knowledge, self-efficacy, and expectations (Akiba, Murata, Howard & Wilkinson, 2019).

This is based on the fact that many educational systems still don't favor learners. This creates a gap, resulting in learners simply following all the programs without developing their potential. This research highlights that mentoring by mentors and teachers who prioritize their students' needs will strengthen critical thinking. A mentoring system that favors learners can be a method to enhance critical thinking. However, no research has been conducted on how to boost critical thinking with a mentor-centered approach in non-formal education in Indonesia.

This research aims to analyze the strengthening of critical thinking through the use of mentors' methods to support learners in both non-formal and formal education. Therefore, further research is needed on various strategies that can strengthen the critical thinking of non-formal learners, as well as a system of mentoring led by experienced mentors. Moreover, it is intended to analyze whether mentoring by a mentor can be a solution. Through this research, a comprehensive picture is gained from the analysis of various mentoring methods used by mentors to enhance learners' critical thinking in non-formal institutions.

## 2. Methodology

This study employs a qualitative approach to investigate critical thinking literacy by identifying problems, collecting relevant data, and conducting logical analysis (Rapanta, Botturi, Goodyear, Guàrdia & Koole, 2020). Researchers immerse themselves in the natural environment of the Qaryah Thayyibah Learning Community (QTLC) in Salatiga, Central Java, Indonesia, located at Jl. Raden Mas Said No. 12, Kalibening Village, Tingkir Sub-district, to deeply engage with participants (Berends & Deken, 2021). A case study method is used, focusing on an in-depth and comprehensive analysis of phenomena at QTLC (Berends & Deken, 2021). Data, consisting of words, images, or videos, are gathered through interviews (coded W), observations (coded O), and document studies (coded D) to ensure high-quality findings. Interviews provide in-depth, subjective insights from participants, capturing nuanced perspectives critical for qualitative research. Observations allow researchers to directly witness behaviors and contexts, enhancing the validity of findings. Document studies offer objective, archival evidence, complementing primary data and ensuring robust, high-quality results. Thematic analysis is applied to identify and interpret recurring patterns by repeatedly reviewing data (Hennink & Kaiser, 2022).

Primary data were collected through interviews with the QTLC founder, mentors (*Modim*), and learners, providing insights into the institution's philosophy, community-based learning, and the development of critical thinking (Hennink & Kaiser, 2022). The study involved one QTLC founder, offering a strategic perspective on the institution's vision. Five mentors (*Modim*) were interviewed to explore their roles in facilitating learning. Additionally, ten learners provided diverse insights into their experiences and the development of critical thinking. Secondary data from observations and documents support the primary findings. Primary data collection through interviews was conducted multiple times over nine months from January 2024 to December 2024, allowing for in-depth exploration of participants' perspectives. Secondary data, gathered through observations and document studies, spanned a one-year timeframe to ensure comprehensive contextual analysis. This extended duration for secondary data collection enhanced the robustness and triangulation of the study's findings. Data analysis involves reduction (summarizing key points), presentation (organizing data in narratives or matrices), and ver-

ification (drawing valid conclusions) (Wahyuni, Desyanty & Rahma, 2020). The data analysis in this research uses Miles and Huberman's approach, which involves three main steps: data reduction, data display, and concluding drawing. First, data is simplified by selecting and summarizing relevant information. Then, the data is organized into clear formats like tables or charts for easier understanding. Finally, conclusions are drawn by interpreting patterns and findings from the displayed data. The data was analyzed in such a way that we could ultimately capture the meaning from each information (Dull & Reinhardt, 2014).

Triangulation of data collection methods ensures validity and reliability (Hongphanut, 2023). Triangulation refers to the use of multiple data sources, methods, or perspectives to validate research findings and enhance credibility. In this study, triangulation involves combining interviews, observations, and document studies to ensure comprehensive insights. By cross-verifying data from these diverse sources, the research minimizes bias and strengthens reliability. This approach confirms that conclusions are robust and grounded in varied evidence. The process continues until theoretical saturation is achieved, guaranteeing credible and comprehensive results. Cross-checking of interviews was conducted with informants from owners, learners, and mentors.

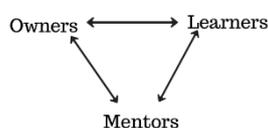


Figure 1 – Triangulation of Data Source.

Data collection through interviews, observations, and document studies is conducted iteratively to capture emerging themes fully. Saturation is reached when no new insights or patterns emerge from additional data. This rigorous approach ensures the findings are robust, reliable, and reflective of the studied phenomenon. Explain theoretical saturation, discuss data validation methods, and the process continues until theoretical saturation is achieved, guaranteeing credible and comprehensive results (Zulkarnain & Nurhadi, 2018).

### 3. Results and discussion

The research results, conducted at the research location where the researcher was directly involved in all learning process activities at QTLC, found that the mentoring system implemented by *Modim* had been ongoing for 22 years, thereby strengthening the critical thinking of learners. The theory of mentoring by *Modim* continues to improve critical thinking. Observation: During the observation, I found that learners carried out the mentoring activity as planned by *Modim*, both during its execution and after completing the activity. *Modim* and learners have an equal status (égalité). The data collection methods involved a questionnaire, individual semi-structured interviews, classroom observations, and the collection of teaching materials (Suttakun, Yutakom & Vajarasathira, 2011). Documentation results revealed numerous writings in books, project catalogs, and social media that demonstrate the closeness of *Modim* and learners without any boundaries that would distance them. *Modim* prioritizes the needs of its learners.

#### 3.1. *Modim* as an egalitarian person

At QTLC (Qaryah Thayyibah Learning Community), the egalitarian *Modim* refers to the role of mentors who foster an equal, democratic, and non-hierarchical relationship with learners, distinct from traditional teachers in non-formal education. An egalitarian, empowering, and interactive approach to personal relationships can foster social change and learning, particularly in addressing the structural injustices faced within an institution (Watts, Diemer & Voight, 2011). Mr. Baharuddin, as the founder of QTLC, expressed his view that every *Modim* is:

Modim, or Moderator Iman, are like friends in everyday life. Friends whose relationships aren't as distant as those between teachers and students in formal schools, where teachers truly teach in a one-way manner, making learners feel awkward. Modim, here are truly like friends and learn from each other. At QTLC, both Modim and Learners exchange knowledge. This makes learners feel valued and allowed to express their thoughts during discussions with Modim. This habit is felt to make learners become critical thinkers.

Egalitarian treatment as a friend to enhance learners' critical thinking abilities has a positive impact on the participants. Because of feeling like equal friends, discussions create learners' trust, self-confidence, open-mindedness, and maturity (Muthmainnah *et al.*, 2022). Students enjoy interactive, reflective, and creative non-formal education spaces that foster critical thinking, autonomy, and engagement with real-life issues through diverse, visual, and experiential learning methods. Teachers and students engage as equals, which enhances students' critical thinking through interactive, reflective, and creative non-formal learning environments (Torsteinson & Saevi, 2023).

### 3.2. *Modim* as a motivator

*Modim* as Motivator at QTLC: the role of *Modim* at the QTLC as a motivator centers on inspiring and empowering learners to develop critical thinking and autonomy in a non-formal education setting. For this reason, *Modim* is the person who will encourage learners, as expressed by Mr Zia Ul Haq, one of the interviewed mentors, informed:

Modim's role here isn't to teach; rather, he's more of a motivator for students in every project they achieve each semester. When students express their project learning ideas, how to execute them, encounter difficulties, and achieve them, Modim's role here isn't to teach but to accompany students in expressing their opinions and taking action, providing encouragement and motivation when they struggle.

Motivation and engagement by *Modim* during learning recommendations stimulate learners' critical thinking (Huang, Lu & Yang, 2023). Learners expressed an attitude of self-awareness and control, but did not always succeed. However, the strong motivation for learners to express their ideas became a trigger in strengthening critical thinking (Pjeldnæs & Karlsen, 2024).

### 3.3. *Modim* as a companion

The *Modim* at QTLC acts as a companion, guiding learners through personalized, empathetic, and egalitarian approaches in non-formal education. Paulo Freire's concept of critical consciousness, which promotes critical analysis of society through egalitarian, empowering, and interactive methods, is vital for fostering social change and learning, particularly to address structural injustices faced by marginalized youth, and consists of three core components: critical reflection, political efficacy, and critical action (Watts *et al.*, 2011). Miss Fanny, one of the interviewed mentors, informed:

As Modim, we don't teach subjects like conventional schools. As Modim, we are more than a companion; we are a friend to learners in all aspects. We will share when asked. When learners start to develop project ideas, encounter difficulties in executing them, and reach their project targets this semester, they will request input and evaluation. That's where we will always be-learners who are actively working to achieve their project goals.

A dynamic mentoring system that builds relationships of mutual respect, appreciation, and knowledge exchange, which encourages the development of students' critical thinking through positive interactions (Robnett, Nelson, Zurbriggen, Crosby & Chemers, 2018).

### 3.4. *Modim* behaves empathetically

The *Modim* at QTLC serves as an empath; Paulo Freire's pedagogy emphasizes that empathetic mentoring in social work education fosters critical thinking by creating a supportive "third place" for deliberate practice, where students can learn from emotional experiences and mistakes without negative consequences, enhancing their ability to apply theory and develop reflective skills (Meredith, Heslop & Dodds, 2023). Salis, one of the QTLC students, informed:

The *Modim* here is very easy to ask for help when invited to discuss anything: when we are confused about deciding on an idea, having difficulty executing it, even when we succeed, they always empathize with us. Essentially, I believe I unlock all the potential within me. It's not uncommon for them to wait for us longer than school hours just to listen to our complaints. We are used to expressing all our difficulties without shame or fear with the *Modim* here. It's very comfortable.

Salis felt that the *Modim* were always willing to understand their condition patiently. Empathetic mentoring in High-Fidelity Simulation (HFS) strengthens learners' critical thinking by providing realistic scenarios that boost self-confidence and enhance *Modim* competencies through unique, supportive experiences (Guerrero *et al.*, 2022).

### 3.5. *Modim* appreciation giver

The *Modim* at QT expresses appreciation to its learners, fostering the development of critical reasoning through support that builds self-confidence and encourages critical reflection. Appreciating learners through long-term feedback and realistic simulations helps them understand their strengths, weaknesses, and limitations, thereby strengthening critical reasoning in decision-making (Fügener *et al.*, 2022). Informant Mr. Baharuddin, the founder of QTLC, conveyed:

*Modim* here also plays a role in accompanying and empathizing with the difficulties in the learning process. *Modim* will also help correct and evaluate learners' achievements. *Modim* and the institution will provide learners with the opportunity to present their work from one semester. Learners are allowed to express their ideas, execution, and achievements at the end of the semester. This is an event that learners have been eagerly awaiting, as they will present their projects in front of parents, friends, *Modim*, institutions, and guests invited by external institutions, which are typically used for comparative studies at QTLC.

Mentors shape their teaching methods based on their long-standing experiences as learners, and their satisfaction stems from the positive emotional responses they receive from learners. This appreciation strengthens learners' critical thinking through supportive and motivating interactions (Hargreaves & Fullan, 2020).

## 4. Conclusion and recommendation

Strengthening critical thinking literacy through mentoring, commonly referred to as mentoring in non-formal education in Indonesia, has proven effective through an approach where mentors act as equal companions, motivators, empathetic listeners, and appreciators. *Modim's* QTLC mentoring approach begins by creating an equal learning atmosphere, making learners feel comfortable and accepted. With a compassionate attitude, *Modim* accompanies learners when they encounter difficulties, motivating them to build their self-confidence. *Modim's* appreciation for the efforts and challenges they face in the field encourages them to remain enthusiastic. This approach allows learners to understand their strengths, weaknesses, and limitations. This strengthens their critical reasoning in making better decisions. *Modim's* realistic simulations and long-term feedback also help learners hone their reflection and analysis skills. Overall, the QTLC approach, which is egalitarian, motivational, companionate, empathetic, and appreciative, is effective in supporting the cognitive and socio-emotional development of learners as it strengthens critical reasoning.

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