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Critical Thinking for Cadets: Military Officer's Perceived Definitions and its Importance

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Abstract

In the military, officers not only use critical thinking (CT) in their military mission, but they are also required to have CT to complete their tasks at work and in professional military education. Improving the learning process of CT for military intelligence personnel directly benefits both the military and the people that they protect, allowing them to be more effective in their duties and decision-making. However, graduates of military education institutions often lack CT and problem-solving. Thus, this study aims to evaluate the need for critical thinking skills among military officer cadets. Specifically, the objective is to identify the military officers' perceived definition of CT and the importance of teaching CT to officer cadets. A semi-structured interview was conducted with thirteen (13) in-service military officers of the Malaysian Armed Forces (MAF). Four main themes emerged from the feedback given by the officers. They are i) analytical thinking, ii) evaluation of information, iii) problem-solving, and iv) decision-making. The results also show the importance of CT skills being implemented from the beginning (cadet level). The results suggest that there is a need to develop a critical thinking module for cadets that is practical for them.

Keywords: Critical Thinking, Defence University, Higher Education, Military Education, Officer-Cadets

Introduction

Critical thinking (CT) dates back more than 2000 years ago with Socrates's method, known as 'Socratic Questioning', which highlighted the significance of gathering information, critically investigating logic and presumptions, dissecting fundamental ideas, and determining the effects of both what is said and done (Paul et al., 2018). In general, CT is exposed and emphasised in order to enhance rational judgement in thoughts and actions, as well as independent thinking, and individual autonomy (Zainuddin et al., 2019). Critical thinking is not a skill that everyone has since childhood. It must be learned and not something that is gained naturally. Critical thinking should be taught to students by knowledgeable and trained experts

and not by parents or peers. For that reason, critical thinking is included in the curriculum in higher education institutions. Despite the continuous discussion on the importance of CT among undergraduates, the issues related to effective CT teaching among academicians are still lacking (Johan et al., 2023).

Critical thinking plays an important role in the military environment. Military officers do not only use critical thinking in their military mission Folker Jr (2017), but they are also required to have CT in completing their tasks at work (Ayers, 2016) as well as in professional military education (Emilio, 2000; Guillot, 2004; Parenteau, 2021). Improving the learning process of CT for military intelligence personnel directly benefits both the military and the people that they protect, allowing them to be more effective in their duties and decision-making (Smoot Jr., 2016). These leadership qualities are shaped from an early age, but Panait (2017) argued that in order to reach their maximum potential, military education is needed.

In military education, instructional strategies Smoot Jr (2016); Dice (2017), and course designing Amalanathan & Balraj (2018) should be taken into consideration when it comes to CT learning and the teaching process. In many studies done internationally, CT has been identified as one of the crucial skills in military officers' education Emilio (2000); Folker Jr., 2017; Parenteau (2021), along with leadership, integrity, open-mindedness, social intelligence, and others (Boe et al., 2015).

As suggested by Bakhtiyorovich (2024), the curriculum is one important element in professional military education. In producing good military leaders, the curriculum should emphasise the skills related to decision-making and CT. Therefore, integrating professional CT training into initial officer-cadet education is essential for practical military decision-making (Parenteau, 2021). However, regardless of its significance, there are still shortcomings in CT skills among military institution graduates (Hatfield et al., 2011; Ayers, 2016). One of them is related to the time allocated to teaching students CT skills (Dice, 2017).

In the defence university in Malaysia, the students are divided into three main categories: officer cadets, Reserved Officer Training Unit (ROTU) students, and civilian students. Since this is a defence university, apart from taking the courses related to their programmes, all students are required to take military-related courses such as Military History, Effective Leadership, and Military Law and Laws of Armed Conflict, among other university core courses. Some of the courses taught are inclined towards military settings and education. Although the NDUM is a boutique university that focuses more on military settings and education, all the students are expected to perform their best in academics. Students are expected to participate actively in the class as well as other curriculum requirements before finishing their undergraduate studies.

The defence university in Malaysia functions as an institution that prepares the officer cadets in terms of undergraduate education and military training. It is important to have a curriculum that is catered for the officer cadets as well as civilian students. Thus, a meticulous curriculum design is required (Rahman et al., 2023). Based on the discussion above, the evidence focuses more on international studies and not much on the Malaysian setting. Therefore, it is important to carry out this study to gauge the perspective of military officers on the importance of CT to be exposed to military officer cadets.

The aim of this study is to determine the military officer's perceptions of the definition of CT and the importance of exposing officer cadets to CT. This present study is based on two research questions:

i. What is the military officer's perceived definition of critical thinking?
ii. To what extent is critical thinking important to be taught to officer cadets?

By exploring these questions, this research aims to contribute to the development of a teaching module that integrates CT in the lesson. The teaching module could be utilised by instructors of the defence university in teaching cadets and civilian students.

Literature Review

Definitions of Critical Thinking

Critical thinking has been in discussion for many decades. In the Oxford Dictionary (2024), CT is "the process of analysing information in order to make a logical decision about the extent to which you believe something to be true or false". In education, John Dewey's ideas of reflective thinking serve as the foundation for CT theory, in which he distinguished between the process and the product in thinking (Yıldırım & Özkahraman, 2011). Many prominent experts and theorists, such as Robert Ennis, Diane Halpern, Richard Paul, Linda Elder, and Peter Facione have given their definitions of CT. According to Elder & Paul (2010, p.38), in assessing CT abilities, CT is "the process of analysing and assessing thinking with a view to improving it". Facione (2015, p.27) described CT as "a kind of purposeful, reflective judgment that results in a reasoned and fair consideration of evidence, conceptualisations, methods, and standards that ultimately frame beliefs and actions".

The definition of CT has then been continued to be discussed by many other researchers. Among the definitions, CT is "the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts" (Kaur et al., 2019, p.117). In her study, Barseghyan (2021, p.118) mentioned that "CT involves mindful communication, problem-solving, and freedom from bias or ego". CT is highly valued by employers in terms of problem-solving and creativity among future employees.

In the military, the experts have included descriptions of CT in their research. They asserted CT as;

i. "the ability to logically assess the quality of one's thinking and the thinking of others to consistently arrive at greater understanding and achieve wise judgments" (Guillot, 2004, p.3)
ii. "a cognitive process that intervenes between a set of initiating situational conditions and the observable performance of one or more tasks" (Fischer, Spiker & Riedel, 2009, p.23)
iii. "understanding, analysis, visualisation, and description of complex problems and the development of approaches to solve them" (Wrigley et al., 2021, p.116).

Based on the definitions of CT stated above, it can be summarised that CT involves a range of cognitive processes and skills that help individuals in various situations.

Critical Thinking in the Military

The need for a modern military environment that upholds K-Force (K refers to knowledge-based) means that producing intelligent military personnel is essential. This included critical thinking skills. Being a critical thinker does not only help an officer in his/her decision-making and problem-solving, but it also helps in his/her communication skills. They are always required to work and collaborate with foreign military organisations. The Malaysian Armed Forces (MAF) does send troops and observers to other countries, such as Congo, Somalia, Labenon and others to be involved in peacekeeping missions (Col. Naharuddin, n.d).

In addition to having effective leadership skills, an officer in the military is also required to think critically. Incorporating formal training in critical thinking skills into military education

could serve significant advantages (Dobson-Keeffe, 2021). In the studies conducted by Emilio (2000); Guillot (2004); Usry, Jr (2004); Dike et al (2006); Zacharakis & Van Der Werff (2012); Paparone (2014); Boe et al (2015); Ayers (2016); Smoot, Jr. (2016); Hoppe & Eils (2021); Kompan & Hrnčiar (2021); Parenteau (2021); and Rybiak (2022) CT is important because of the following reasons:

i. it is applied in military missions
ii. to educate and train future military leaders
iii. it is highly promoted and emphasised in Professional Military Education and identified as the most important outcome of officer education
iv. a crucial component in the military decision-making process
v. to improve the reflective military practitioner
vi. the ability to construct a hypothesis, validate an opinion, and have a greater understanding of complex concepts.

Critical Thinking in The Joint Military Appreciation Process (JMAP)

In the armed forces, an application of CT can be seen in the Joint Military Appreciation Process (JMAP). JMAP is a decision-making procedure that is used to support the needs of the military operational environment (Dobson-Keeffe, 2021). JMAP can be utilised to orchestrate, coordinate, and defuse conflicts between military and non-military actions to successfully respond to complex emergencies.

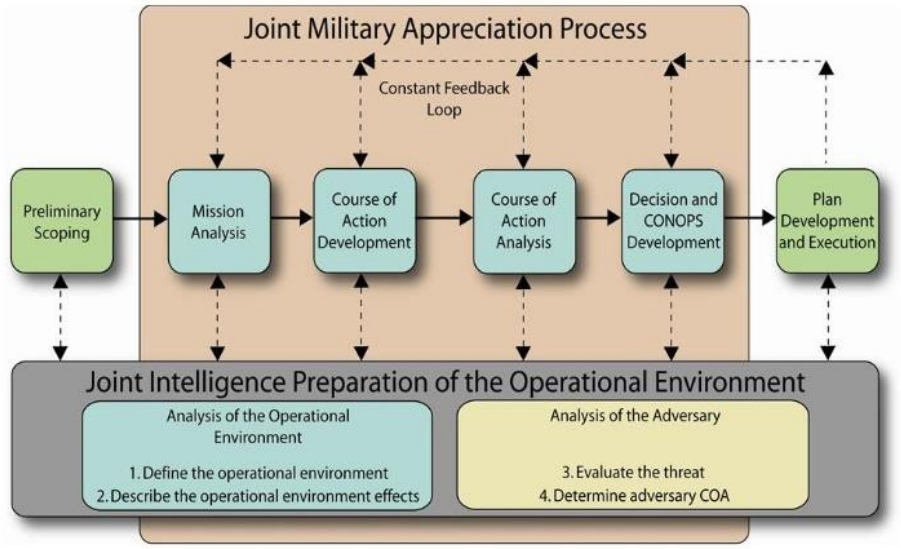

Figure 1. The Joint Military Appreciation Process (JMAP), (Australian Defence Force Publication 5.0.1 – Joint Military Appreciation Process, 2019)

CT is a primary part of JMAP. Analytical and creative thinking are combined to give original answers to challenging issues in an operational environment. Commanders and staff are required to engage in a structured planning process (Figure 1), which involves CT, information analysis, and the development of an action plan. Commander and staff must critically assess the circumstances, identify and evaluate the intentions of the superior commander, create their mission, identify and evaluate duties, and decide what course of action to take.

According to Commander Post (2022), the JMAP encourages both divergent and convergent thinking to ensure that all information is taken into consideration. It also creates a mechanism

to gather the most important data for better command decision-making. He also stated that the inclusion of framing into JMAP in 2015 has stimulated divergent thinking, providing a deep appreciation of the problem. However, focusing more on critical thinking throughout the whole process could improve the outcomes.

Improving the learning process of CT for military intelligence personnel directly benefits both the military and the people that they protect, allowing them to be more effective in their duties and decision-making (Smoot Jr, 2016; Martinsen, 2022). Nevertheless, the implementation of CT skills is challenging. Based on the previous studies (Emilio, 2000; Ayers, 2016; De Graaff et al., 2016; Parenteau, 2021), there are some of the issues and challenges that can be addressed. They are:

i. CT standards, testing, and faculty development efforts are still incomplete
ii. four-year degrees may not produce the critical thinking outcomes the Army expects
iii. the teaching of CT to officer cadets in military academies does not guarantee the actual use of critical thinking by all officers
iv. less attention is given to higher levels of critical thinking in the decision-making process

Teaching critical thinking to officer cadets in military academies and encouraging them to make good professional use of it after graduation does not mean that it will automatically translate into a chain of command willing to make greater room for this intellectual skill in its decision-making processes (Parenteau, 2021). However, exposing the officer cadets to CT could help them go through a better decision-making process once they are officers (Guillot, 2004).

Methodology

Research Design

This study was conducted qualitatively. This form of qualitative descriptive study is frequently employed to investigate social phenomena, events, or conditions (Creswell et al., 2003). The study used an exploratory qualitative design, using a semi-structured interview methodology Kaddoura (2013), to explore the perceived definition and importance of CT among military officers.

Participants

A total of 13 participants were involved in a semi-structured interview session. The participants are in-service military officers from the Malaysian Armed Forces (MAF), consisting of the Malaysian Army (MA), the Royal Malaysian Navy (RMN) and the Royal Malaysian Air Force (RMAF). All the officers served in various departments under the MAF, namely, military pilot, intelligence analyst, amour officer, IT officer, and others. The demographic information of the participants is as below

Table 1
Demographic Data of the Participants

No.	Code	Service*	Years of Service
1.	MO1	Navy	13 – 22 years
2.	MO2	Army	
3.	MO3	Navy	
4.	MO4	Air Force	
5.	MO5	Air Force	
6.	MO6	Army	
7.	MO7	Navy	
8.	MO8	Army	
9.	MO9	Navy	
10.	MO10	Army	
11.	MO11	Army	
12.	MO12	Army	
13.	MO13	Army	

***** The Malaysian Army (Army), the Royal Malaysian Navy (Navy) and the Royal Malaysian Air Force (Air Force)

Of all the participants, seven are from the Army, four are from the Navy, and two are from the Air Force. To date, they have served in the military between 13 to 22 years of service.

Data Collection and Analysis

A semi-structured interview was conducted with the participants to collect the data. The interview guidelines consisted of open-ended questions to find out the participant's definition of CT and the importance of teaching CT to the officer cadets. All the interviews were video-recorded and transcribed verbatim, manually into a written text for data analysis. Thematic analysis was used to identify the themes through careful reading of the transcribed data (Rosairo, 2023). Participant's actual names were replaced by codes (MO1 – MO13) to maintain the confidentiality of the data. The analysis of the data from the transcripts generated the themes of the study findings.

Results

Perceived Definition of Critical Thinking (CT)

Research question one is "What is the military officer's perceived definition of critical thinking?". Based on the responses provided by the participants, four main themes were identified in the perceived definitions of CT. They are i) analytical thinking, ii) evaluation of information, iii) problem-solving, and iv) decision-making.

Analytical thinking

The officers perceived CT as the ability to analyse problems or situations and strive to uncover the deeper meanings and purposes in situations. The officers defined CT as interpreting and analysing the situation and problems deeply by avoiding impulsive decisions and focusing on a deeper definition of a situation. As stated by the officers;

MO1:

"How you interpret & analyse something. It may pertain on how you perceive a phenomenon or an event. Looking at a deeper definition or purpose of that thing/situation. Critical thinking skill for me is the opposite of impulsive decision-making and a shallow understanding of a situation. This usually correlates with analytical and systems thinking".

MO6:

"Critical thinking skill is the ability to analyse the problem other free so why is the problem may not be the actual problem you need to be able to expand on it to break her path to financial problem also decision given to you may not be the right solution so you need to be able to get apart"

Evaluation of Information

Another theme identified through the officers' feedback is information processing and evaluation. The ability to process and evaluate information is considered part of critical thinking. MO2 emphasised the importance of evaluating information for authenticity, reliability and trustworthiness.

MO2

"Cognitive ability to process, to evaluate, to interpret, in my case to determine authenticity, accuracy & value of information…authenticity; how reliable and how trustworthy is the piece of information."

Problem-solving

The next theme that emerged from the definitions provided by the officers is problem-solving. One officer viewed CT as a process of evaluating alternatives and making judgments based on sound reasoning. Another officer described CT as a process of exploring unconventional options when making important decisions. MO3 stated that CT helps in maximising the potential of one's surroundings to achieve intended goals;

"it is ability of a person to analyse his surrounding and make full use of it and maximise the potential of it in order to achieve whatever he intended to…"(MO3)

Decision Making

Finally, decision-making is another theme identified from all the feedback gained from the officers. CT is related to making important and quick decisions, especially in conducting a mission. As stated by MO7 and MO8:

How we react to certain situations is based on our capacity.

MO7

"In making decision, I need to consider my crew, I need to consider the ageing asset in achieving the operational objective. I thought that is critical thinking because I need to make decision as fast as one click like that. It involved people's life, warship"

MO8

"…it requires you to make very important decisions and for foreign military men to send your troops or to allocate your troops or to conduct a sentence mission or to call for certain form of firing"

The Importance of Teaching Critical Thinking (CT) to Officer Cadets

For the second research question, this study also sought to identify the importance of teaching CT to officer cadets. Based on the interviews conducted, most participants agreed that military officer cadets should be exposed to CT. They supported the idea that teaching CT to officer cadets is essential as it prepares them for their military roles. It should start during their cadet training, helping them to develop situational awareness, and improve decision-making skills, and communication skills. As noted by the officers;

MO12

"The current generation today need to start the critical thinking from the basic which is from the training institution itself…"

MO2

"…they are supposed to be exposed and it should be continued something that should be continued until end they become officers"

One officer suggested that a specific course on critical thinking should be introduced for cadets to develop the skill more formally. The officer stated that: MO4:

"We should have one subject for the critical thinking, not like us (in-service officers) *because we learned critical thinking in an informal way".*

latesIn teaching CT to cadets, the officers mentioned that it has to be practical for military officer cadets to apply because the applications of the skills are much more important than the exposure to the theoretical parts of the skills. By exposing them to the skills, it is hoped that they will be able to apply them. As stated by one of the participants;

MO9:

"…don't make it too academic…if you want to teach it to cadet, basically make it simple for them and you apply that to them and you make them apply within their life...".

Discussion

The study focused on identifying perceived definitions of critical thinking and the importance of teaching CT to officer cadets. Four themes were identified from the definition provided by the officers: analytical thinking, evaluation of information, problem-solving, and decision-making.

CT is defined as analytical thinking, where it involves looking at a deeper definition or purpose of a situation. This is in harmony with Facione's (2006); Bloom's Clark (2015); Paul & Elder's (2010) work. In their study, analysis is considered a crucial part of the process. According to Paul & Elder (2010), analysis means breaking down complex issues into simpler components for better understanding. This finding is similar to a study done by (Tagutanazvo & Bhagwandeen, 2022). In their study, the participants described CT as "a way of observing, analysing, and assessing the situation before them in order to solve it".

The participants highlighted problem-solving, where it is important to organise rational thinking to address any issues. CT is a process of making judgements based on sound reasoning. This is supported by Paul & Elder (2006, p. 4), who stated that CT "entails effective communication and problem-solving abilities, as well as a commitment to overcoming our native egocentrism and sociocentrism".
The next theme is the evaluation of information. The participants emphasised the importance of evaluating information for its authenticity, reliability and trustworthiness. It is in line with Paul & Elder (2010), who mentioned that "all reasoning is based on data, information and evidence", which infused clarity and accuracy as part of the intellectual standard.
The last theme identified in this study was decision-making. CT is essential in making important and quick decisions. This is in harmony with Kaddoura (2013) who stated that CT requires taking appropriate actions to make reasonable decisions in different situations. In the military, wise decision-making is supported by CT (Guillot, 2004).
From the interview, most officers agreed that officer cadets should be taught CT as early as during their cadet training period. It is essential to expose and teach them CT as it can help them improve their thinking skills, decision-making skills, communication skills, and overall, their military roles once they become in-service officers. In the studies done by Kaur et al (2019); Parenteau (2021); Rybiak (2022), CT is essential as it is part of the military problem-solving and decision-making process.
One participant suggested that a dedicated subject should be introduced to officer cadets for them to develop their CT skills. In their study, Guiseffi & Ryan (2021) emphasised the importance of teaching CT as part of military educational institutions' educational objectives. Moreover, taking into consideration that the application of CT is more important than the theoretical part of it, the components related to course designing Amalanathan & Balraj (2018) and instructional strategies Smoot Jr (2016); Dice (2017); Pinza-Tapia et al (2021) are highly important in designing a practical teaching module for CT.
The findings of this study have important implications for education in general and military education in particular. The findings indicate that the participants were able to acknowledge an understanding of the concept of CT as drawn from their military experience and expertise throughout their services.
This study discussed the definition of CT among military officers. Although significant findings were achieved, the are some limitations in the study. The main one is the small sample size of the study. The data were limited to this sample. Thus, the findings are not sufficient to represent the whole population. However, from the small sampling size, data were saturated, and strong findings were achieved. In this study, the generalisability of the findings might have been limited by the nature of participants, as they are based on the perceptions of 13 in-service military officers who differ in gender, expertise, and preliminary learning (Kaddoura, 2013).

Conclusion, Limitations and Recommendations

The definitions provided by the military officers in this study are in parallel with existing and established definitions from the experts. Exposing CT to officer cadets is also crucial not only for academic purposes but also in preparation for them to become an officer. The exposure of CT does not assure that it will be successfully applied once the cadets are in service. However, it does not mean that it is not important for them to be exposed and taught CT. They might benefit from being familiar with how to use CT skills and being ready to do so in the workplace. The evidence of inadequate CT abilities and the lack of attention given to it

support the need to examine CT pedagogy. This study serves as a starting point for further investigation of the need to teach CT among officer cadets and its long-term effects. The proposed curriculum is expected to focus on appropriate and useful methods for exposing and teaching cadet officer CT.

Several limitations need to be taken into consideration even though significant findings were discovered. The data were collected from a specific group; military officers which makes it insufficient to represent a broader population in the military organisation. Additionally, the study did identify the perceptions of academic instructors who teach cadets. Future research should consider these for a more comprehensive insight.

Critical thinking research in education, particularly military education should continue to be in focus and reform as it will definitely contribute to the improvement of military education and military organisation. For future research, this study has helped to provide a fundamental understanding of the significance of CT among officer cadets as well as military officers.

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