An Introduction to Cybergogy's Role in Enhancing Critical Thinking Skills through University Core Courses in Malaysia

Asma' Wardah Surtahman., *Norafifah Ab Hamid., Siti Nurul Izza Hashim., Noor Aziera Mohamad Rohana

Academy of Contemporary Islamic Studies (ACIS), UiTM Cawangan Melaka

***Corresponding Author**

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ABSTRACT

Enhancing critical thinking skills is a fundamental goal of higher education, particularly through university core courses. This study explores the role of cybergogy—a blend of cyber-technology and pedagogy—in fostering critical thinking skills among university students in UiTM Malacca, Malaysia. Cybergogy leverages digital tools and online environments to create interactive and engaging learning experiences, promoting deeper cognitive engagement and critical analysis. Through a quantitative approach involving surveys, this research examines the implementation of cybergogy in university core courses focusing on philosophy and current issues taken by undergraduate students. Findings indicate that cybergogy significantly enhances critical thinking skills by providing diverse perspectives, enabling collaborative problem-solving, and encouraging independent learning. Students reported improved analytical abilities, better argumentation skills, and increased confidence in tackling complex issues. In conclusion, cybergogy plays a crucial role in enhancing critical thinking skills in university core courses, offering innovative ways to engage students and promote higher-order thinking. Future research should focus on longitudinal studies to assess the long-term impact of cybergogy on critical thinking and academic success.

Keywords: Cybergogy, critical thinking, university, philosophy and current issues, Malaysia.

INTRODUCTION

A well-structured education system is essential in developing well-balanced and harmonious graduates. Emphasizing critical thinking in education is not a new phenomenon, as it is a necessary component in improving the quality of teaching and learning (T&L) at all levels of education, including universities. Therefore, a transformation in the national education system is required to develop graduates who can think critically. The introduction of Philosophy and Current Issues as a core university subject serves as a crucial element in cultivating graduates' critical thinking abilities in addressing various global societal issues.

However, numerous challenges must be addressed in enhancing critical thinking skills among graduates through the Philosophy and Current Issues course. The rapid globalization and paradigm shifts in the national education system necessitate alignment with global education standards. Thus, this study discusses the role of cybergogy as a tool for enhancing critical thinking skills through university core courses, aiming to prepare graduates capable of facing contemporary global challenges.

LITERATURE REVIEW

There are three main approaches in writing a literature review: chronological, thematic, and methodological. In this paper, the researchers have chosen the second approach, which is thematic, by focusing on three main themes: (i) studies on cybergogy, (ii) studies on critical thinking skills, and (iii) General Studies (MPU).

Cybergogy

Cybergogy refers to a pedagogical approach that utilizes digital technology and the internet to develop, deliver,

and manage learning experiences. It integrates digital tools such as e-learning, interactive videos, simulations, and online learning platforms to enhance interaction, engagement, and learning achievement (Wang & Woo, 2024; Selwyn, 2024).

Technological Pedagogical Content Knowledge (TPACK) is crucial to ensure effective teaching delivery through technology integration. It is an ideal application for all aspects of learning and plays a vital role in the teaching and learning process conducted in classrooms (Raphaella Batha Augustine Sampar & Suziyani Mohamed, 2023).

The integration of technology in teaching and learning (T&L) plays a significant role in keeping up with the latest educational developments. The Malaysian Education Development Plan 2013–2025 emphasizes improving technological infrastructure in education as a preparation for developing IT-literate human capital. Additionally, the country faces considerable challenges in providing a high-quality education system. Various applications, such as blog development, animation creativity, audio materials, and interactive games, have facilitated and enhanced the effectiveness of T&L in Malay Literature, making it not only effective but also engaging. Furthermore, animated applications have been found to attract students' interest in continuing classroom activities, as animation consists of a series of graphics displayed rapidly in frames or objects (Ani Omar, 2016).

In this era of globalization, which is driven by advancements in information and communication technology (ICT), educational development emphasizes ICT literacy and mastery among students. Changes must occur in teaching and learning systems in classrooms, where a constructivist approach is encouraged, as it fosters interest and motivates students to take greater responsibility for their learning while incorporating lifelong learning practices. ICT in Education: Prospects and Challenges in Pedagogical Reform (Robiah Sidin & Nor Sakinah Mohamad, 2007).

Based on the above discussion, it can be concluded that the study of cybergogy is crucial to ensuring that contemporary education keeps pace with technological developments in teaching and learning. Therefore, this study is significant and distinct from previous research as it specifically focuses on the cybergogy method in the Philosophy and Current Issues course.

Critical Thinking Skills

The concept of critical thinking is widely discussed by scholars, making it relatively easy to define. To understand the term "critical thinking," it is essential to comprehend the meanings of "thinking" and "critical" separately and in combination. According to Kamus Dewan, 3rd edition, "thinking" refers to the act of contemplating or considering, while "critical," derived from Indonesian-Dutch, signifies not readily accepting or agreeing with something without first evaluating its merits and drawbacks. It also implies a tendency to critique rather than accept information unconditionally (Noresah Baharom, 2002).

The word "critical" originates from the English term "critic" and has roots in the Greek word "kriths" (kritikos), meaning "to judge." Judging involves evaluating, distinguishing, deciding, and questioning the validity of something (Hamid, 2001). The term "critical," derived from "kritikos," also implies questioning to enhance understanding (John Arul Philip, 1997).

Dewey (1933) defines critical thinking as reflective thinking that involves deep contemplation and serious consideration of a subject. Bloom (1956) describes critical thinking as involving mental activities such as analysis, synthesis, and evaluation. Ennis (1996) defines it as reflective thinking aimed at determining the acceptability of information. Chaffee (2000) defines critical thinking as:

"Making sense of the world by carefully examining the thinking process to clarify and improve our understanding."

Similarly, Royce P. Jones (2001) states that critical thinking requires the ability to verify the truth of a fact and defend it if it is indeed true. His objective of critical thinking is to make appropriate judgments about a fact or

evidence before making a decision. Ruggiero (2001) defines critical thinking as:

"The essence of critical thinking is evaluation. Critical thinking, therefore, may be defined as the process by which we test claims and arguments and determine which have merit and which do not. In other words, critical thinking is a search for answers, a quest."

From the above definitions, it can be concluded that the fundamental aspect of critical thinking is "evaluation," a process of analyzing information to determine its validity or falsehood. It is also understood as a cognitive process that involves analyzing issues.

Additionally, Paul Richard W. and Linda Elder (2002) explain critical thinking as:

"Critical thinking is that mode of thinking, about any subject, content, or problem, in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them."

From these definitions, it can be inferred that critical thinking involves analyzing information or problems while improving cognitive skills through critical examination of thought structures and establishing intellectual standards. Similarly, Mohd Fauzi Hamat (2004) defines critical thinking as the ability, intelligence, and competence of the human mind to evaluate ideas, arguments, thoughts, and opinions.

Based on the definitions provided by various scholars, critical thinking can be characterized as an in-depth and serious cognitive process aimed at ensuring the validity of information to solve problems. It is evident that most scholars incorporate three main elements in defining critical thinking: analysis, evaluation, and objectivity. While not all definitions explicitly mention these three elements together, they contain at least one of these components.

Thus, it can be concluded that critical thinking skills are vital for further study and analysis, ensuring that the teaching and learning process fosters students' ability to think critically. This study is significant as it focuses on critical thinking skills through cybergogy in the Philosophy and Current Issues course.

Philosophy and Current Issues Course

Recognizing the importance of philosophy in shaping students' thinking and strengthening their identity, the Philosophy and Current Issues course was introduced and made mandatory for students in both public (IPTA) and private (IPTS) higher education institutions in Malaysia, starting from the 2019/2020 academic session. The implementation of this course as a compulsory university course was decided in the Follow-up Meeting of the Cabinet Ministers No.14/2019 on June 12, 2019 (MPU Course Structure Update, 2019) & (Syamsul Azizul Marinsah et al., 2021). This course aligns with the goals of the National Education Philosophy (FPK) to develop well-rounded individuals in terms of physical, emotional, spiritual, and intellectual aspects (Dzulkifli Abdul Razak & Rosnani Hashim, 2019).

The Philosophy and Current Issues course is unique due to its content and structure, which benefit students holistically by fostering knowledge acquisition and soft skills development (Syamsul Azizul Marinsah et al., 2021). Additionally, the introduction of this course aligns with national aspirations to enhance curriculum transformation (Syamsul Azizul Marinsah et al., 2022).

The course comprises eight main topics covered over fourteen weeks (Course Information Academy of Contemporary Islamic Studies, 2024):

1. Introduction to Philosophy
2. Philosophy in Life
3. The Art and Methods of Thinking
4. Concept of Human Being 1
5. Concept of Human Being 2
6. Epistemology

7. Epistemology and Current Issues
8. Ethics as a Philosophical Issue

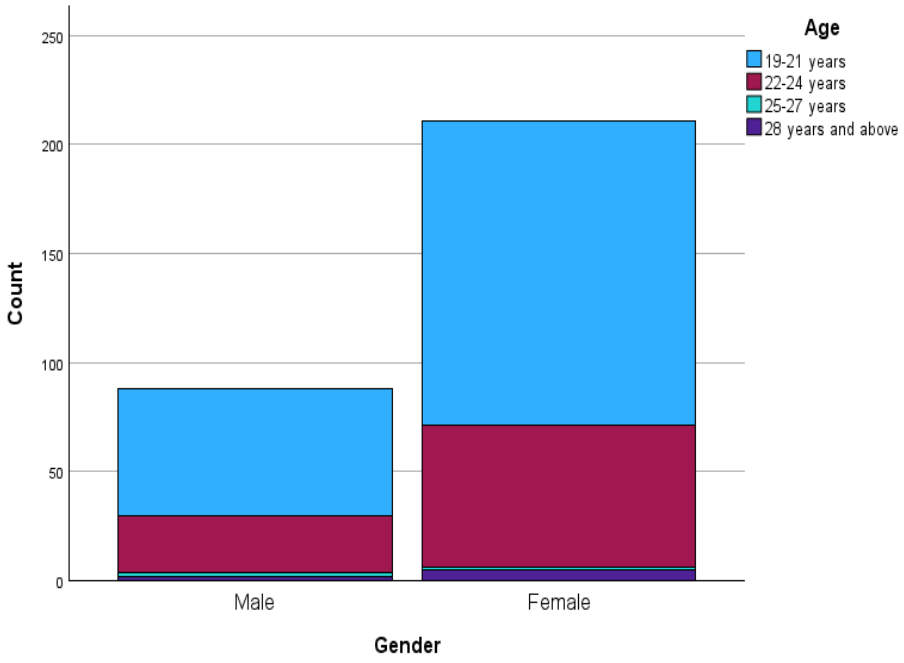
By the end of the course, students should be able to analyze current issues based on philosophical knowledge and apply major philosophical perspectives. The course also emphasizes critical thinking, problem-solving, professional ethics, and lifelong learning (Course Information Academy of Contemporary Islamic Studies, 2024).

This discussion highlights the importance of continuing research on this course, as it plays a crucial role in shaping students' thinking and character. This study is significant as it focuses on the cybergogy approach in the Philosophy and Current Issues course.

METHODOLOGY

This study employs a quantitative research method using a questionnaire as the primary data collection instrument. The respondents consist of graduates who have taken the Philosophy and Current Issues course at UiTM Melaka Branch, covering Alor Gajah Campus, Bandaraya Melaka Campus, and Jasin Campus. The sample selection is based on Krejcie and Morgan's (1970) sample size determination table. According to this table, the total population of this study is 1,214 graduates, with a sample size of 299 graduates.

Based on Figure 1, a total of 211 (70.6%) respondents are female, with the majority aged between 19 and 21 years. Similarly, there are 88 (29.4%) male respondents, most of whom are also between 19 and 21 years old.



Graph 1: Graph of Respondents Based on Gender and Age

The survey instrument in this study utilizes a five-point Likert scale to ensure high reliability and provide respondents with the opportunity to make precise choices based on their level of agreement: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. The collected data will be analyzed descriptively using the Statistical Package for the Social Sciences (SPSS) Statistics version 22.

FINDING AND DISCUSSION

Table 1 presents the preliminary findings on the cybergogy approach in the compulsory CTU552 Philosophy and Current Issues course and its impact on the critical thinking skills of UiTM Melaka Branch students. In general, the majority of students reported that the use of cybergogy in learning enhances their critical thinking skills, with a mean score of 4.5 and a standard deviation (SD) of 0.49.

Table 1: Distribution of Mean and Standard Deviation for Critical Thinking

Descriptive Statistics			
	Mean	Std. Deviation (SD)	N
Critical Thinking	4.4644	.49440	299

Meanwhile, Table 2 provides a detailed breakdown of the Mean and Standard Deviation (SD) for the questions posed to UiTM Melaka Branch students regarding the cybergogy approach in the compulsory CTU552 Philosophy and Current Issues course. Based on the table, students were able to utilize cybergogy through discussions (mean = 4.28, SD = 0.71), facilitate communication with lecturers (mean = 4.52, SD = 0.59), and improve communication skills with peers (mean = 4.46, SD = 0.62).

Additionally, with the help of learning tools and online applications, students were able to categorize learning information (mean = 4.52, SD = 0.59), connect learning content between topics (mean = 4.52, SD = 0.58), and summarize learning content (mean = 4.46, SD = 0.59). Regarding article analysis assignments, students demonstrated better thoroughness in searching for articles (mean = 4.5, SD = 0.61) and assessing the accuracy and reliability of articles (mean = 4.48, SD = 0.59).

The majority of students also showed increased sensitivity to received information (mean = 4.44, SD = 0.63), improved problem-solving skills for current issues through social media (mean = 4.41, SD = 0.65), and enhanced abilities in finding solutions to issues and problems (mean = 4.5, SD = 0.6). Furthermore, students were able to assess the truthfulness of discussions on social media (mean = 4.45, SD = 0.6).

Table 2: Distribution of Mean and Standard Deviation for the Cybergogy Approach in the CTU552 Philosophy and Current Issues Course on the Critical Thinking Skills of UiTM Melaka Branch Students

Descriptive Statistics					
Role of Cybergogy in Enhancing Critical Thinking Skills	N	Minimum	Maximum	Mean	Std. Deviation (SD)
Online discussions can differentiate teaching information	299	1.00	5.00	4.2776	.70938
Able to categorize learning information	299	3.00	5.00	4.5217	.59248
Able to connect the learning content between each topic	299	3.00	5.00	4.5217	.58104
Able to conclude the content of learning	299	3.00	5.00	4.4615	.59163
Able to be more thorough in searching for articles	299	3.00	5.00	4.4950	.60961
Able to be more sensitive to the information received	299	2.00	5.00	4.4415	.62853
Able to evaluate the learning video	299	3.00	5.00	4.4448	.64465
Able to compare the notes from the slides with the reference book	299	3.00	5.00	4.5151	.60391

Able to assess the truthfulness of discussions on social media	299	3.00	5.00	4.4548	.59680
Able to assess the accuracy and reliability of the article through the assignment	299	3.00	5.00	4.4816	.58691
Easy to communicate with the lecturer	299	3.00	5.00	4.5217	.59248
Improving communication skills with friends	299	2.00	5.00	4.4582	.61912
Thinking of solutions to current issues through social media	299	2.00	5.00	4.4080	.64564
Improving skills in finding solutions to issues and problems	299	3.00	5.00	4.4983	.59851
Valid N (listwise)	299				

Overall, the average score for the role of cybergogy in the learning of the Philosophy and Current Issues subject is at a high level (mean = 4.46, SD = 0.49). This indicates that students are able to utilize cybergogy effectively, not only in understanding and completing assignments given by lecturers but also in enhancing their critical thinking skills through this subject. On the other hand, the proficiency in using cybergogy, including software and technological tools, is found to be satisfactory among lecturers, which in turn improves students' comprehension. Students also exhibit greater confidence in actively engaging in discussions with lecturers and peers.

Although the widespread use of social media is often associated with entertainment and leisure, the survey findings suggest that students remain aware of its educational potential and are cautious when receiving information from these sources. This demonstrates that basic digital literacy is not a major obstacle to integrating technology into teaching activities. Therefore, lecturers can leverage various multimedia applications in teaching compulsory university subjects and diversify the use of these applications, particularly to enhance students' critical thinking skills. The use of platforms such as Kahoot, Jamboard, and Quizizz should be designed to be engaging and creative.

CONCLUSION AND RECOMMENDATION

In conclusion, the study found that cybergogy plays a crucial role in enhancing critical thinking skills through the learning of the Philosophy and Current Issues course. The results indicate that cybergogy functions at a high level, as both lecturers and students have adapted well to its use. Nevertheless, it is essential for all parties to play their respective roles in the implementation of online teaching, particularly in improving students' critical thinking skills.

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