

CYBERGOGY-BASED LEARNING: A CASE STUDY AMONG UNIVERSITY OF MALAYA CONTINUING EDUCATION CENTER'S (UMCCED) STUDENTS

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Abstract: *Cybergogy plays a significant role in the education sector, specifically in teaching and learning. Cybergogy is an educational approach that utilizes Information and Communication Technology (ICT) to empower learners. It is not limited by geographical location, time, cultural differences, or national boundaries. The rapid transition from traditional classroom to online teaching and learning has excluded the implementation of Cybergogy from the current educational process. The objective of this study is to determine the extent to which UMCCED student's readiness towards Cybergogy learning in terms of cognitive, social, and emotional variables. This study employed a descriptive design with a quantitative approach. The study sample comprised 201 students from UMCCED at the Cyberjaya Malaysia campus. The research tools utilized in this study were a collection of modified questionnaires derived from previous research projects. The discovery suggests that technical students are well-prepared for online instruction. The data pertaining to emotional, cognitive, and social preparedness characteristics are predominantly at the medium and high levels. The research indicates that UMCCED students are prepared for online learning, as demonstrated by their readiness for cybergogy. Future research is suggested upon the conclusion of the current study.*

Keywords: *Cybergogy, UMCCED, Learning*

Introduction

In the field of education, one measure of success is the approach teachers take when delivering lessons to their students. Experts in the modern era have come up with a plethora of approaches, each with its upsides and downsides. This conversation is about the pedagogical traditions of andragogy, pedagogy, and paralogy, which, along with the rapid development of technology, especially electronic devices, are giving birth to a new way of instruction called cybergogy. A modern framework of cyber-learning has emerged from the use of educational technology; central to this framework is the integration of basic pedagogical and ethnographic concepts to forge a new avenue of instruction. By fostering and executing self-directed and participatory learning experiences inside a digital setting, information technology is facilitating the educational requirements of both youth and adults. Participation in learning activities, displaying a range of behavioral, cognitive, and emotional traits, is essential in every educational context. Within the context of problem-based learning, the Cybergogy learning paradigm is being implemented. The results of research by Jazeel (2020) and Yin et al. (2020) show that problem-based learning improves learning outcomes in online academic environments.

Improving the quality of education in today's schools requires teaching students to be more independent in their verbal and collaborative communication and encouraging them to form good moral principles that apply to themselves and others (Nikoletta, 2019). In addition to teaching students' facts and figures, a good education also helps shape their moral fibre, which is essential for producing leaders who are trustworthy and equitable. Engaging in self-directed learning encourages the importance of reflecting on and making sense of one's learning journey, including both successes and failures. In addition, one's prior knowledge and experiences might be a great asset while seeking knowledge in the future (Agonács & Matos, 2019).

Not only that, but the focus, motivation, and cognitive capacities of students in the modern day have undergone substantial changes about the features of the educational approach (Masek, 2020). Instructional strategies that promote an atmosphere of collaboration, communication, critical thinking, and creativity are essential in meeting the demands of the learning approach of the 21st century (Mustika, 2020). A transformational approach to education and meticulous planning are prerequisites for effective learning and teaching processes.

Literature review

Cybergogy

Cybergogy has a major influence on self-directed learning using online and social media resources. It has been suggested by Khairul Bahri Bin Abdul Samad (2018) that cybergogy can help students become better language learners. A real opportunity for student-directed learning, including community-based learning and collaborative models, presents itself through the combination of heutagogy and cybergogy. Utilization of the internet is crucial to modern learning in this age of globalization. Smartphones have made it easy for students to study more efficiently and effectively on a wide range of topics. Because of this paradigm change in education, professors are no longer seen as authoritative sources of information but rather as guides for their student's educational journeys, with an emphasis on learning as a collaborative process. As a result, students can find ways to study and master new concepts outside of class (Blaskche, Kenyon, & Hase, 2014).

Cybergogy has given rise to a distinct manifestation known as the Massive Open Online Course (MOOC), signifying a significant departure from traditional e-learning towards a more comprehensive approach to education and training. The process of learning, as described by Munira et al. (2019), is conducted using an online mobile smartphone application, without any differentiation based on geographical or socioeconomic factors, as well as without any limitations in terms of location and time.

One way the cybergogy method is put into practice is through a smartphone app. Three separate variables—social, cognitive, and emotional—may be used to show how an online learning environment might promote engaged learning (Figure 1). Cybergogy and heutagogy, when combined with various environmental factors, can improve the efficiency of the learning and teaching processes. Kids are getting better at things, which will make them more equipped to deal with problems in the future (Dailey-Hebert and Dennis, 2014).

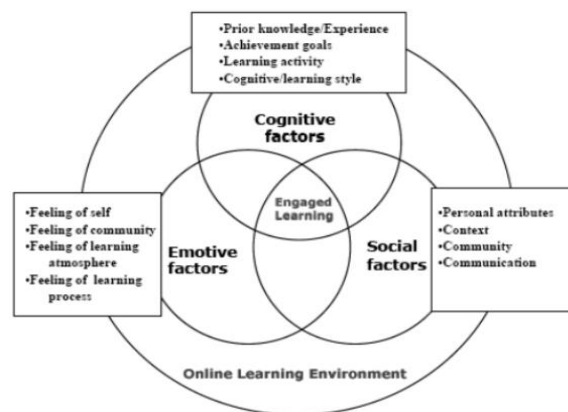


Figure 1. Cybergogy model of engaged learning (Wang et al., 2008)

In their 2006 work, Wang and Kang use the term "Cybergogy" to describe the approaches taken to create engaging online classrooms. Cognitive, emotional, and social learning are the three interrelated areas depicted in Figure 1's methodology. Foord (2007) came up with an acronym to describe a methodical framework for getting the most out of wikis. The abbreviation STOLEN stands for a number of things: a clear and concise goal, ownership, a localized goal, engagement rules, and navigation. Group projects require students to think critically, ask questions, create goals, reflect on their performance, communicate their ideas, show empathy, listen to others, and share what they've learned (Knowles, 1975). Incorporating varied wiki offerings, a more knowledgeable design was accomplished by incorporating the "Cybergogy" model, Knowles' (1975) theory, Foord's (2007) STOLEN checklist, and other contemporary viewpoints.

According to proponents of the cybergogy approach to education, students' access to computers and the internet determines the time and place of their learning. The internet makes available to students a vast array of diverse and thorough subject content. Online education has revolutionized the way students and teachers interact in the age of Industry 4.0. Video and audio sharing, blogging, and online GitHub have all contributed to the improvement of collaborative learning methodologies. Students are able to work together on assignments thanks to these platforms' emphasis on clear and concise communication. In addition to facilitating learning outside of communities, cybergogy encourages members to build debates, share ideas, negotiate viewpoints, and work together to find solutions (Bilfaqih & Qomarudin, 2015).

Suhaimi et al. (2020) undertook a study titled "Promoting Transformative Mathematical Learning Through Heutagogy, Paragogy, and Cybergogy Approaches." The major goal of this research is to offer mathematics educators recommendations for how to successfully incorporate heutagogy, paragogy, and cybergogy into their lessons. In his article, Sumarsono (2020) takes a transdisciplinary look at the cybergogy and heutagogy paradigms. Elsevier, Google Scholar, Scopus Journal, and IEEE Journal are among the esteemed national and worldwide publications that were consulted for this study's literature review technique. The goal is to systematically assess, study, structurally evaluate, classify, and categorize existing evidence to find relevant research data. This research looks at the pros and cons of combining heutagogy, a kind of self-directed learning, with cybergogy, an online learning platform. An extensive literature review on methods of transdisciplinary integrating heutagogy and cybergogy into Islamic higher education led to the proposal of multiple learning paradigms.

Problem statement

More people are using Cybergogy in today's classrooms as a result of the shift from face-to-face teacher training to online learning. Learning facilitation is at the heart of cybergogy, with technology playing a pivotal role in allowing students to learn independently and in groups within a digital environment. But the question remains: are our kids prepared to take advantage of this new way of learning? Given the requirement for more autonomous cybergogy instruction as opposed to the previous approaches, which relied more on teacher support, are they well prepared to handle this aspect?

The lack of face-to-face engagement and direct communication are two ways in which cybergogy could impede student-teacher interaction (Dhawan, 2020). Findings from a study (Srivichai, 2020) showed that students had trouble getting quick answers, had trouble understanding the material, and felt bored when learning online. College students, according to research (Chung, 2020), avoid asking questions in person for a variety of socially stigmatized reasons, even if they are confused about the material. Even when it comes to communicating with others online, these same pupils lack confidence. Because of this, their readiness for online learning has been greatly affected.

To summarize, the main obstacles in Cybergogy pertain to the intellectual, interpersonal, and affective parts of a person. Problems with computer literacy, online communication skills, self-directed learning, motivation, and a conducive learning environment are among these obstacles (Heong et al., 2021). Given the worldwide shift towards digitalization and the growing number of universities aiming to maximize the use of technology in classrooms, it is crucial to weigh the pros and cons of this endeavor carefully. Although there have been notable improvements to the learning process as a result of technology's incorporation into the field of education, it is critical to recognize that there are constraints to learning solely through technology. While online learning platforms are great for storing information and training, they also have the potential to hold erroneous knowledge, poorly monitored training, or misleading information. Finding and monitoring Cybergogy readiness and improving the implementation of online education in both present and future educational contexts are greatly impacted by the concerns stated in this research.

After reviewing the issue, the researcher has concluded that UMMCCED may also have this problem. Therefore, it is vital to research and assess this study thoroughly. Research and exposure can paint a clear image of the group and point to solutions if it has an impact on the school and its students.

Research aims

Hence, the objectives of this study are to identify:

1. The level of Cybergogy readiness in terms of a cognitive factor among UMCCED students.
2. The level of Cybergogy readiness in terms of social factors among UMCCED students.
3. The level of Cybergogy readiness in terms of emotive factors among UMCCED students.

Methodology

This study used a quantitative method since it aimed to test specific theories' predictions using descriptive data based on numerical variables that could be statistically evaluated. It follows that, following the recommendation of Cohen, Manion, and Morrison (2011), a quantitative research strategy is optimal. The study used a descriptive research strategy. It looks at the cognitive, emotional, and social components of cybergogy awareness and cybergogy preparation as potential explanations for observed variances in the dependent variable.

Sample of the study

Three hundred and one undergraduates from UMCCED will participate in this research. During the data collection session, the convenience sampling method is used. The examiner does not get the sampling frame. Thus, convenience sampling is the right sample, according to the justification for the determined sample selection.

Data analysis

An analysis was conducted on the quantitative findings using SPSS version 27. The first step in analyzing the participants' attributes is to perform an evaluation using univariate statistics. To further analyze the level of readiness across students, we employed both univariate and multivariate methods. Glaser and Strauss (2017) laid out a semi-structured method that we follow in our qualitative interviews. The study's qualitative approach seeks to shed light on commonalities in human experiences. One great way to use grounded theory to help us understand specific human events better is constant comparison analysis (Abraham et al., 2022).

Instrumentation

This study employed a modified version of an existing research instrument. The item for cybergogy preparation (cognitive, emotional, and social aspects) was modified from Soydal, Alir, and Unal (2011).

Table 1: Research instruments

Construct	Number of items	Reference
Cybergogy readiness (cognitive)	4 items	
Cybergogy readiness (Emotional)	5 items	Soydal et al. (2011)
Cybergogy readiness (Social factors)	8 items	

Findings

After the data has been obtained and analyzed, the following are the findings of the study. First, we will present the demographic data analysis. The analysis is as follows:

Table 2: Student Profiling (Gender)

		Frequency	Percent	Valid Percent
Valid	male	61	30.3	30.3
	female	140	69.7	69.7
	Total	201	100.0	100.0

Table 3: Level of study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	diploma	201	100.0	100.0	100.0

Next, we analyzed the profile data of the students involved in this study. Two hundred-one students participated in this study. Most are female, which is 140 people (69.7%) while the rest are male, 61 people (30.3%). In terms of study level or field of study at UMMCCED, all are diploma-level students.

Then we will analyze the findings related to cybergogy readiness based on the mean value. This research utilizes descriptive analysis using mean score values to determine the level of cybergogy awareness and cybergogy readiness among UMCCED lecturers and students. To get the mean score level, we use the Mean Score Table (see Table 17). This study utilizes the interpretation stated by Nunnally and Berstein (1994). Refer to Table 17 for the table display:

Table 4: Mean score

Mean scale	Level
4.01-5.00	High
3.01-4.00	Medium-high
2.01-3.00	Medium-low
1.00-2.00	Low

The analysis of findings is as follows:

Table 5: Student's level of cybergogy readiness (cognitive)

	N	Mean	Std. Deviation	Level
I'm able to do my best to complete online tasks	201	4.14	1.032	High
I'm able to discuss assignments with my classmates using my university's learning management systems (e.g., Blackboard, Moodle)	201	3.86	.833	Medium-high
I prepare myself by reading materials online before attending classes	201	3.68	.953	Medium-high

I spend enough time and effort to learn online	201	3.87	.845	Medium-high
Valid N (listwise)	201			

Table 5 shows the mean score table to find out the student's level of cybergogy readiness (cognitive) level. After the results of the analysis, it was found that the majority of items were at the medium-high level. The items involved are "I'm able to discuss assignments with my classmates using my university's learning management systems (e.g., Blackboard, Moodle)", "I prepare myself by reading materials online before attending classes" and "I spend enough time and effort to learn online" with the mean score obtained for each item being 3.86, 3.68 and 3.87. While for the high-level item "I'm able to do my best to complete online tasks" has a mean score value of 41.4.

Table 6: Student's level of cybergogy readiness (emotional)

	N	Mean	Std. Deviation	Level
I'm able to motivate myself to learn when performing online tasks	201	3.79	.892	Medium-high
I give importance to studying together with my classmates in a group online	201	3.90	.961	Medium-high
I feel my classmates respect my thoughts and views during online discussion	201	3.92	.760	Medium-high
I feel my classes are more interesting when performing tasks online with my classmates	201	3.61	.899	Medium High
I feel my lecturers show interest in my views during an online discussion	201	3.76	.988	Medium-high
Valid N (listwise)	201			

Table 6 shows the mean score table to find out the student's level of cybergogy readiness (emotional). Overall, the mean score for each item for this construct is medium-high. The items involved are "I'm able to motivate myself to learn when performing online tasks", "I give importance to studying together with my classmates in a group online", and "I feel my classmates respect my thoughts and views during the online discussion", "I feel my classes are more interesting when performing tasks online with my classmates" and "I feel my lecturers show interest in my views during the online discussion" with the mean score obtained for each item being 3.79, 3.90, 3.92, 3.61 and 3.76.

Table 7: Student's level of cybergogy readiness (emotional)

	N	Mean	Std. Deviation	Level
I participate actively in online activities	201	3.62	.909	Medium-high
I behave fairly to all my classmates when performing tasks online	201	3.86	.825	Medium-high
I listen carefully to my lecturers in class on the required tasks to perform online	201	4.05	.786	High
I do my assignments and submit them on time online	201	4.26	.675	High

I carefully read other students' views during an online discussion	201	3.79	.772	Medium-high
I carefully read other students' views during an online discussion	201	3.84	.817	Medium-high
I try to do my best in online group work	201	4.21	.621	High
I share information with my classmates during an online discussion	201	3.94	.766	Medium-high
Valid N (listwise)	201			

Table 7 shows the mean score table to find out the Student's level of cybergogy readiness (emotional). There are two levels of scores which are medium high and high after descriptive analysis is done. Overall, the mean score of medium-high level is the most for each item for this construct. The items involved are "I participate actively in online activities", "I behave fairly to all my classmates when performing tasks online", "I carefully read other students' views during the online discussion", "I carefully read other students' views during the online discussion" and "I share information with my classmates during the online discussion" with the mean scores obtained for each item being 3.62, 3.86, 3.79, 3.84 and 3.94. As for the quality level, the items involved are "I listen carefully to my lecturers in class on the required task to perform online", "I do my assignments and submit them on time online" and "I try to do my best in online group work" which mean scores of 4.05, 4.26 and 4.2.

Discussion

To assess the overall readiness of the respondents for cybergogy, the composite mean for the three primary factors of cybergogy for engaged learning was computed. These were the cognitive, emotional, and social factors, respectively. The results indicate that the participants possessed a medium-high to high level of readiness of readiness in all three aspects of technology-based learning for active participation (see table 5,6 &7). The results of this finding also surprised the researcher that the data showed that students were in a high readiness for cybergogy learning. None of the items obtained showed a low mean value, because the majority of the mean data showed medium-high and the rest were high. this shows that students are very prepared for cybergogical learning at the UMCCED Campus.

This finding proves that students are ready with technology aspects and they can use technology well in class or learning specifically. The convenience aspect of today's technology and the ease of use of technology make it easy for them to adapt to cybergogy learning contexts easily. This coincides with the findings (Heong et al, 2021) showing they are confident in using online tools to communicate with others and express their thoughts online, they don't usually post questions in online discussions. Moreover, students in online classes often come from all over the world, and they don't always get to know their classmates (Martin, Stamper & Flower 2020).

Overall, the researcher concluded that UMCCED Universiti Malaya students are ready for cybergogy learning. They gave good feedback and were confident about all the aspects that were asked. This shows that students are always ready to learn technology in addition to the latest facilities that are always available on the internet that make it easier for them. The technology aspect is also not a problem for them and they are always ready to interact online as technology is an important pillar in cybergogy.

Future Research

Future research, It may be possible to gather data from the entire university and all of Malaysia's public universities in future studies. Secondly, data was gathered from 201 UMCCED students and the study is restricted to a quantitative cross-sectional research approach. Therefore, to make sure the results are presentable and applicable to other situations, bigger samples may be used in future research. If we want to know why these results could be the way they are, we need to conduct interviews.

Future researchers can also study other aspects apart from the variables used by researchers, factors such as environment, internet availability, internal support, facility and aspects of AI skills may be studied in the future. It will be more interesting if various methods such as qualitative, design & development research are combined in the future to obtain deeper and more interesting results. Future studies in online learning could examine the impact of pedagogy and course designs on students' engagement in blended learning. Furthermore, the implementation of support systems and training programs is necessary to facilitate a seamless transfer from traditional teaching methods to an online learning paradigm.

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