

Transformation of Digital Teaching: A Case Study of Digital Teaching in Cambodian HEIs

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Abstract

Digital teaching transformation is a process of digitalizing teaching process to boost the quality of teaching and learning. This recent study tended to examine the effects of transforming digital teaching in HEIs. Also, this research determined the effectiveness of transforming digital into teaching changes in Cambodia. By addressing the in-depth results, it employed a quantitative research-method for data collection and analysis. Survey questionnaires were used to collect data. The descriptive statistics analysis-method was employed to analyze the gathered data. This study elaborated on the digital teaching transformation, which helped improve teachers' teaching and learning methods. Transforming digital teaching helped develop teachers' digital capacity and literacy. Thus, this study benefited teachers to digitalize teaching process, improve the teaching quality, build digital skills, and integrate the digital teaching literacy and capacity.

Keywords: *teaching transformation, digitalization, teaching quality, digital literacy, digital skills*

1. Introduction

Teaching digitalization is a process of transforming the digital technology into the teaching and learning process. Developing the quality of teaching and learning is the need to transform teaching and learning with digital and internet platform. The policy of digital education transformation is the key to digitalize the human recourses in Cambodia (Supreme National Council [SNC], 2021). Digital teaching is a response to the reform of teacher training, in term of developing the education quality and digitalizing teaching capacity, and literacy (Hangchuon, 2021). Transformation of digital education system aims at reforming the teaching and learning methods, popularizing the digital human resources, digitalizing technological skills, and streamlining the teaching and learning quality. Transformation of Digital teaching is a key mission for higher educational institutions to advance digital communication and digital literacy (SNC, 2021).

Integration of digital teaching is about the supportive teaching and learning in proffering the insight into how teaching changes (Dirk et al., 2021). Digitalization of teaching significantly benefits the development of teaching and learning quality, e-teaching systems, and digital teaching platforms to support the teaching and learning process. The digital devices are important for transformation of digital teaching (Parlak, 2017). Transforming the digital into teaching is the process of transferring digital technology into teaching platform (Taşkıran, 2017). Digital competence, however, is a crucial ability for teachers to adopt teaching methods in line with the current conditions (Parlak, 2017). Digital transformation profoundly influences the teaching framework in reforming the teacher training and qualifying digital teaching (Balyer & Öz, 2018).

Digital literacy, handling with the internet platforms and electronic devices, is a competency for the 21st century education. The digital teachers should process their teaching with the use of digital technology, such as internet digital platform. This study aims at examining the transformation of digital teaching in the context of Cambodian education. Digitalization of teaching is a current issue, arousing the researcher's interest in developing the quality and methods of teaching and learning. Therefore, this research examines the digital teaching transformation in Cambodian education context.

2. Conceptual Frameworks in Literature Review

Digital Teaching in the 21st Century Education

Digital teaching influenced the changes of the digital teaching and learning quality (Bates, 2015). With the studies confirmed by Sisman (2016), digital teaching contributed to lifelong learning. Transformation of digital involved individual needs for developing the teaching methods (Balyer & Öz, 2018). With transformation of digital education, digital knowledge and skills were the requirements for teachers to digitalize capability and quality of teaching. Paulo (2020) argued that digital competence was the process of teaching, managing, reforming, digitalizing, and using ICT to process teaching and learning, with teaching setting goal. Educational technology was the need to identify and individualize the factors supported transformation of digital education (Dirk et al., 2021). Paunescu, Lepik, and Spencer (2022) argued that technology connected people to the internet platforms.

Digital transforming was about the use of technology in regenerating and processing the digital creation and re-enactment (Forrester, 2016; IDC, 2015; OECD, 2017; Raab & Griffin-Cryan, 2011). HEIs' digital transformation was a part of transforming digital education – involving structure and environment

of teaching and learning (NV, 2017). Teaching digitalization was a framework for reforming the education system and teaching quality (Balyer & Öz, 2018). Digital teaching contributed to developing the education quality through internet and technological platforms, serving the distance and collaborative learning (Paulo, 2020). Integrating the digital teaching shed a light with the support for teaching and learning process, and provided insights into how education system changed (Dirk et al., 2021). HEIs can be driven with the existing ICT to creating and sharing knowledge, which helped improved education quality and digital teaching (Paunescu et al., 2022).

Digital Teaching on Education System

Digital transforming helped develop education system with digital strategy. For this reason, teaching transformation was as a change to implement the digital framework to manage digital initiatives and approaches (Silva, 2017). Digital transforming was important for the adaptation of teaching strategies in reforming education system and policy – facilitating the teaching process by digital educational infrastructure, such as internet access, digital tools, and digital teaching and learning environments (Paulo, 2020). Yureva et al. (2020) argued that the education vision was directly linked to digitalization in line with global trends of digital society and economy. With the increase of digital teaching, educational institutions changed teaching practices and process. In the education system and policy, digitalization of teaching was a testament to advancing the method and practice of teaching and learning in enhancing the education missions and the teaching quality (Alenezi, 2021).

Teaching Change with Internet Digital-Platform

The change of teaching was the digital strategy that helped the educational institutions achieved intended goals. Today, the educational institutions had opportunities to handle innovative digital-experiences for stakeholders. For this case, education institutions should digitalize teaching with a whole and change of digital thinking frameworks to manage the digital initiatives and approaches in the teaching insights (Silva, 2017). Digital teaching provided the importance of transforming the teaching strategies and quality (Paulo, 2020). Transformation of technology supported teachers process teaching with the rich teaching materials and the digital classroom practice. Digital teaching embraced new technologies and changed the teaching practice with digital platforms (Yureva et al., 2020). Alenezi (2021) pointed out that transformation of digital teaching gave many benefits to developing the teaching and learning conditions – advancing the teachers’ digital skills, such as ICT soft-skills and digital literacy.

3. Methodology

This study used the quantitative research method for data collection and analysis (Denzin & Lincoln, 1994; Hsieh & Shannon, 2005; Ivankova & Crewell, 2009). This paper used the questionnaires that defined as research tool for gathering data (Graesser & McMahan, 1993). Descriptive statistics analysis was used for analyzing quantitative data (Biecek & Burzykowski, 2021). This study selected 194 samples of the amount 375 stakeholders from 5 universities in Cambodia, with probability random sampling, followed $S(n) = \frac{PS}{1+(PS \times e^2)}$ (Chhorn, 2024), by focusing on the confident level 95% and errors of margin 5%. The questionnaires were analyzed for interpretation of the results. Questionnaire analysis was to examine the impact of transforming the digital teaching in Cambodian education. The quantitative data were analyzed by using SPSS to examine the mean of each hypothesis. The research ethics was demonstrated by keeping safety to the participants’ privacy and identities. In this sense, the research ethics must maintain the individual safe to the participants. Thus, a well-conducted study required the presentation of research methods, clear data collection tools, data collection methods and appropriate data analysis methods and research ethics.

4. Findings

Digital Transformation on Teaching Process

Table4.1 indicated the impact of digital transforming on teaching process in the education context, in Cambodia. The results showed that digital teaching significantly contributed to providing digital teaching and learning resources or materials (M = 4.64, SD = 0.49). Digitalization helped construct the digital teaching and learning platforms (M = 4.80, SD = 0.41). As shown in Table 4.1, digital transformation helped teachers develop their teaching and learning methods and techniques (M = 4.76, SD = 0.44).

Table 4.1 Transformation of Digital Teaching Process

	Items	N	M	SD
1	Provide digital teaching and learning resources/materials	194	4.64	0.49
2	Construct the digital teaching and learning platforms	194	4.80	0.41
3	Develop the teaching and learning methods and techniques	194	4.76	0.44
4	Adopt the digital teaching and learning approaches	194	4.40	0.58
5	Build the digital teaching and learning competency and skills	194	4.48	0.51
6	Enhance the digital teaching and learning literacy	194	4.32	0.63
7	Develop digital research competence and skills	194	4.20	0.71
8	Serve the distance or hybrid teaching and learning	194	4.68	0.48
9	Reform the system of digital teaching and learning	194	4.48	0.71
10	Develop the digital teaching and learning lectures	194	3.72	0.93

M = 0.80-1.60 (very poor); M = 1.61-2.40 (poor); M = 2.41-3.20 (Fair); M = 3.21-4.00 (Good); M = 4.01-4.80 (Excellent)

As shown in Table 4.1, digital transforming helped adopt the digital teaching and learning approaches ($M = 4.40$, $SD = 0.58$). Digital teaching played a role to build the digital teaching and learning competency and skills ($M = 4.48$, $SD = 0.51$). The results showed that digital transforming helped teachers enhance the digital teaching and learning literacy ($M = 4.32$, $SD = 0.63$). Digital transformation significantly contributed to develop teachers' digital research competence and skills ($M = 4.20$, $SD = 0.71$). The results showed that digital technology transformation served the distance/hybrid teaching and learning ($M = 4.68$, $SD = 0.48$). As highlighted Table 4.1, transforming the digital highly contributed to reforming the system of digital teaching and learning ($M = 4.48$, $SD = 0.71$). Ultimately, digital teaching benefited teachers to develop the digital teaching and learning lectures ($M = 3.72$, $SD = 0.93$).

Digitalization on the Development of Teaching Competency

Table 4.2 carried out the teaching digitalization on competency development of digital knowledge, abilities, and skills of high school teachers and students. Digitalization of teaching competence enabled the teachers to significantly increase and shed a light in digitalizing the teaching competency ($M = 4.64$, $SD = 0.57$). Developing the digital competency helped teachers build digital knowledge in the teaching and learning process ($M = 4.08$, $SD = 0.57$). Digitalization of teaching competence assisted teachers process the digital teaching and learning platform ($M = 4.00$, $SD = 0.41$). Digital capacity further helped teachers create the digital teaching and learning materials ($M = 4.28$, $SD = 0.54$). Digital teaching competence rapidly gave teachers and students opportunities to digitalize teaching and learning with the internet platform ($M = 4.44$, $SD = 0.51$).

Table 4.2 Teaching Digitalization on Competency Development

	Items	N	M	SD
1	Shed a light in digitalizing the teaching competency	194	4.64	0.57
2	Build digital knowledge in teaching and learning process	194	4.08	0.57
3	Process the digital teaching and learning platform	194	4.00	0.41
4	Create the digital teaching and learning materials	194	4.28	0.54
5	Digitalize teaching and learning with the internet platform	194	4.44	0.51
6	Understand to digitalize the teaching and learning process	194	4.80	0.41
7	Digitalize the literacy of teaching and learning	194	3.88	0.60
8	Enhance the teaching with distance/hybrid conditions	194	3.96	0.68
9	Digitalize the collaborative teaching and learning	194	4.76	0.44
10	Reform the teaching and learning with digital curriculum	194	3.68	1.07

$M = 0.80-1.60$ (very poor); $M = 1.61-2.40$ (poor); $M = 2.41-3.20$ (Fair); $M = 3.21-4.00$ (Good); $M = 4.01-4.80$ (Excellent)

In addition, developing the digital teaching capacity promoted teachers to understand of digitalizing the teaching and learning process ($M = 4.80$, $SD =$

0.41). Digital capacity development really enabled the teachers and students digitalize the literacy of teaching and learning ($M = 4.88$, $SD = 0.60$). Digital teaching competence significantly helped the teachers enhance the teaching with distance or hybrid conditions ($M=3.96$, $SD=0.68$). Besides, digitalization of teaching competence helped the teachers and students digitalize the collaborative teaching and learning ($M = 4.76$, $SD = 0.44$). As shown in Table 4.2, digitalizing the teaching capacity helped teachers and students reform the teaching and learning with digital curriculum ($M = 3.68$, $SD = 1.07$).

Effects of Digital Teaching on Education Reform

Table 4.3 addressed the digital platform of teaching on education reform. The results showed that digital teaching helped digitalize the teaching and learning quality ($M = 4.60$, $SD = 0.50$). Digital teaching also helped improve the digital competence and skills in teaching and learning ($M = 4.52$, $SD = 0.51$). It also improved the methods of teaching and learning ($M = 4.04$, $SD = 0.73$). As indicated in Table 4.3, digital teaching significantly contributed to digitalizing the teaching and learning approaches ($M = 4.52$, $SD = 0.59$).

Table 4.3 Digital Teaching Platform on Education Reform

	Items	N	M	SD
1	Digitalize the teaching and learning quality	194	4.60	0.50
2	Improve the digital competence and skills in teaching and learning	194	4.52	0.51
3	Develop the methods of teaching and learning	194	4.04	0.73
4	Digitalize the teaching and learning approaches	194	4.52	0.59
5	Digitalize the curriculum for teaching and learning	194	4.40	0.50
6	Digitalize the compulsory teaching and learning	194	4.20	0.71
7	Give the digital support for research and innovation	194	4.32	0.63
8	Digitalize the education system (teaching and learning contexts)	194	4.08	0.64
9	Create teaching and learning with internet digital platform	194	4.20	0.76
10	Develop and digitalize teaching and learning outcomes	194	4.44	0.58

$M = 0.80-1.60$ (very poor); $M = 1.61-2.40$ (poor); $M = 2.41-3.20$ (Fair); $M = 3.21-4.00$ (Good); $M = 4.01-4.80$ (Excellent)

Transformation of digital teaching was a factor to digitalize the curriculum for teaching and learning ($M = 4.40$, $SD = 0.50$). The results showed that digital teaching facilitated the digitalization of the compulsory teaching and learning ($M = 4.20$, $SD = 0.71$). It further gave the digital support for research and innovation ($M = 4.32$, $SD = 0.63$). In fact, digitalization of teaching helped digitalize the education system (teaching and learning contexts) ($M = 4.08$, $SD = 0.64$). Digital teaching really helped create teaching and learning with the internet digital platform ($M = 4.20$, $SD = 0.76$). Ultimately digital teaching really helped develop and digitalize the teaching and learning outcomes ($M = 4.44$, $SD = 0.58$).

5. Discussion

Perceived Factors on Teaching with Digital Platforms

Digital transformation is a process of developing teaching with the digital platform. Digital teaching plays a key role in applying the digital technology into the teaching process (MoEYS, 2021), which contributes to developing the teaching and learning practice and outcomes. Transforming of digital education (Hang-Chuon, 2021) serves the education with the digital internet platforms. Digital teaching further displays the key mission (Dirk et al., 2021) for educational institutions to improve the education quality. Technological system helps develop the teaching methods, strategies, and approaches. Digital teaching is a key factor in keeping the quality assurance of education, especially teaching and learning quality. Therefore, transforming of digital teaching is the implicational policy, increasing digital teaching knowledge, skills, and competence, creating the distance teaching and learning, and reforming the teaching and learning approaches.

Influences of Digital Transforming on Teaching Competency

Digital transforming is a constantly evolvement of contributing the digital human resources. Digitalization of human resource (Parlak, 2017) is a part of bettering digital-teaching competence. Digital transformation profoundly influences the teaching competence (Balyer & Öz, 2018) – facilitating the process of teaching and learning. Digital transformation plays an important role in building digital knowledge and skills, adopting the teaching methods, digitalizing the teaching quality, and bettering teaching strategies. Digital teaching transformation sheds a light with the insights to help teachers or educators deeply understand the digital technology and new approaches. Hence, digital transformation significantly contributes to the improvement of teaching competence, comprehension, skill, and literacy.

Digital Teaching Impact on of Education System Reform

Digitalization is the development of technology used in the different areas, including teacher trainings, leadership, and beyond. Digital teaching is very crucial for digitalization of education and training. Transformation of digital teaching helps develop education with the internet platform (Paulo, 2020) – facilitating to process and assess the practice of education reform. Digital technology plays a vital role in processing the digital education (NV, 2017) in order to digitalize the human resources. Further, digital teaching enhances the digital teaching quality through digital integration. Digital transformation provides the educational mechanisms and policies in leading to qualifying the educational practice and reform. Thus, digital teaching proffers several

benefits to the distance learning, e-teaching, digital competence and skills, and digital curriculum reform.

6. Conclusion

This study examined the transformation of digital teaching in developing the teaching methods, quality, and outcomes. By ensuring the effectiveness of digital teaching, digital transformation played a key role in contributing to the betterment of teaching and learning, advancement of teaching capability, literacy and skills, connecting to the digital teaching reform, reforming the digital curriculum, and improving the teaching quality. Greatly, this research benefited to teaching with the digital internet platform. Integration of digital teaching was a way of transforming digital to the development of education quality. Digital teaching was the process of transforming the technology into the teaching and learning process. Hence, the integration of digital teaching played a key role in contributing to the practices, reform, and linkage of the digital education transformation.

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