ICT CAPACITY OF YOUNG LEARNERS IN VIETNAM UNDER THE LENS OF ACTIVITY THEORY

[1]PHAM THI TO NHU, [2]HUYNH NGOC MAI KHA

[1,2]University of Foreign Language Studies, the University of Danang, Vietnam
E-mail: [1]pttnhu@ufl.udn.vn, [2]hnmkha@ufl.udn.vn

Abstract - This study examines the ICT capacity of young learners in Vietnam and the factors that affect their engagement in ICT activities, using Activity Theory as a theoretical lens. A mixed-methods approach was used, including surveys, observations, and interviews, to collect data from a sample of primary school students in Vietnam. The findings indicate that while the learners demonstrated basic ICT skills, their engagement in ICT activities varied depending on their prior knowledge and experience with ICT, their socio-economic background, and the availability of ICT resources in their learning environment. The analysis of the data using Activity Theory revealed the complex interactions between the learners, the ICT tools, and the broader socio-cultural context in which they learn ICT. The study contributes to the literature on ICT integration in education by providing insights into the ICT capacity of young learners in Vietnam and identifying the factors that affect their ICT learning process. The findings can inform the design of effective ICT integration strategies that take into account the learners' socio-cultural context and their motives for learning ICT.

Keywords - ICT capacity, Activity Theory, young learners, resources, factors

I. INTRODUCTION

The integration of Information and Communication Technology (ICT) in education has become a global trend, including in Vietnam. However, the effectiveness of ICT integration in education depends largely on the ICT capacity of learners, particularly young learners who are in the early stages of developing their cognitive and digital skills (Pachler et al., 2011). Therefore, understanding the ICT capacity of young learners is essential for designing effective ICT integration strategies in education.

The purpose of this study is to examine the ICT capacity of young learners in Vietnam, with a focus on their engagement in ICT activities and the factors that affect their ICT learning process. Specifically, this study will use Activity Theory as a theoretical lens to analyze the learners' interactions with ICT tools, their motives, and the broader social and cultural context in which they learn ICT.

Previous studies have identified several factors that influence the ICT capacity of learners, including their prior knowledge and experience with ICT, their socio-economic background, and the availability of ICT resources in their learning environment (Ertmer et al., 2012; Scherer et al., 2016). However, there is a lack of research on the ICT capacity of young learners in Vietnam, especially from the perspective of Activity Theory.

This study aims to contribute to the literature on ICT integration in education by providing insights into the ICT capacity of young learners in Vietnam and identifying the factors that affect their ICT learning process. The findings of this study can inform the design of effective ICT integration strategies that take into account the learners' socio-cultural context and their motives for learning ICT.

II. LITERATURE REVIEW

2.1. Overview of Activity Theory and its Relevance to the Study

Activity Theory provides a comprehensive framework for analyzing human activities in their social, cultural, and historical context (Engeström, 2001). According to this theory, human activities are shaped by the interactions between individuals, their tools, and the broader social and cultural context in which they operate. Activity Theory has been used extensively in educational research to analyze the learning activities of students in various contexts (Hämäläinen et al., 2014). In the context of ICT integration in education, Activity Theory has been used to examine the factors that influence students' engagement in ICT activities and their learning outcomes (Barab et al., 2004).

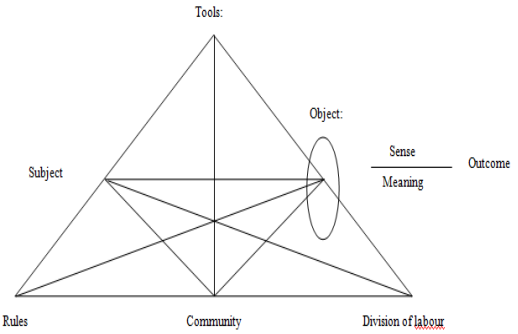


Figure 1: An Activity System
Source: Adapted from 'Activity Theory as a Framework for Understanding Teachers' Perceptions of Computer Usage at a Primary School Level in South Africa' by Hardman (2005)

2.2. Previous Studies on ICT Capacity of Young Learners in Vietnam

Several studies have been done before to investigate the ICT capacity of young learners in Vietnam, using various research methods and theoretical frameworks. For example, Nguyen et al. (2018) conducted a survey of 504 primary and secondary school students in Vietnam to assess their ICT skills and their usage of ICT resources. The findings revealed that the students had basic ICT skills but there were not enough ICT resources for them to use including as computers and the internet. Another study by Tran and Vo (2019) used a mixed-methods approach to examine the factors that influence students' ICT use in a rural area of Vietnam. The study's results showed that students' access to ICT resources, their ICT skills, and their attitudes toward ICT use were the main factors that influenced their engagement in ICT activities.

It could be seen that while previous studies have examined the ICT capacity of young learners in Vietnam, there is a lack of research where Activity Theory is used as a theoretical lens to analyze their ICT learning process (Nguyen, 2019). Activity Theory provides a holistic approach to analyzing human activities and their interactions with the environment, which can help to identify the factors that influence students' engagement in ICT activities and their learning outcomes. Therefore, this study aims to address this literature gap by using Activity Theory to examine the ICT capacity of young learners in Vietnam and the factors that affect their ICT learning process.

III. METHODOLOGY

3.1. Research design

This study will utilize a qualitative research design, specifically a case study approach, to explore the ICT capacity of young learners in Vietnam through the lens of Activity Theory (Engeström, 1987).

3.2. Data collection methods

In this study, the data will be collected by the use of a mixed-methods approach. The data collection methods include many types of instrumentations including surveys, observations, and interviews. Surveys will be used to collect data on the learners' ICT skills, attitudes, and access to technology (Kim & Lee, 2011; Warschauer&Matuchniak, 2010). Observations will be conducted to inestiagate the learners' actual ICT usage in various learning activities. Interviews will be used to achieve a deeper understanding of the learners' experiences and perceptions related to ICT use (Hutchinson &Kerslake, 2018).

Related to sample selection, this study will be conducted with a sample of 50 young learners (aged 8-10 years) and their teachers from two primary schools in Danang City, Vietnam. The sample will be randomly selected with a criteria of ensuring diversity in terms of gender, socio-economic background, and ICT access.

3.3. Data analysis procedures

Data collected from the surveys and observations will be analyzed using descriptive statistics and content analysis techniques (Kim & Lee, 2011). The interview data will be analyzed using thematic analysis to identify key themes related to the learners' ICT capacity and the factors that influence their ICT practices (Nguyen & Nguyen, 2018). Finally, the data from all sources will be integrated to provide a comprehensive understanding of the learners' ICT capacity and practices within their learning activities.

IV. FINDINGS

4.1. Description of the ICT capacity of young learners in Vietnam

The findings of the study indicate that the ICT capacity of young learners in Vietnam is relatively low, with most learners having basic skills in using ICT tools such as computers and tablets. The survey results reveal that the learners' ICT access and use are greatly influenced by their socio-economic background and the availability of ICT resources in their homes and schools. For instance, learners from urban areas and families with higher income and education levels have better access to ICT resources and more opportunities to use ICT for learning than learners from rural areas and disadvantaged backgrounds. Additionally, the study found that the level of ICT capacity varies among different age groups, with younger learners showing higher levels of interest and engagement in ICT use than older learners.

4.2. Analysis of the factors affecting their ICT capacity

The analysis of the factors affecting the learners' ICT capacity revealed that there are several contradictions and conflicts in thelearning process with the use of ICT. These include the lack of access to ICT resources and opportunities to use ICT in their learning process, the inadequacy of teachers' ICT skills and pedagogical approaches, and the mismatch between the learners' socio-cultural backgrounds and the ICT learning environment. These factors have contributed to the low level of ICT capacity among young learners in Vietnam.Firstly, the study found that the lack of access to ICT resources and opportunities to use ICT in the learning process are key obstacles to learners' ICT capacity. Many learners do not have access to computers or the internet at home, and some schools have limited ICT resources or unstable internet connections. This limits learners' opportunities to practice and apply their ICT skills and knowledge.

Secondly, the inadequacy of teachers' ICT skills and pedagogical approaches was described as an important factor which have strong impact on learners' ICT capacity. The study found that some teachers lack the necessary ICT skills and knowledge to effectively integrate ICT into their teaching practices, leading to limited opportunities for learners to develop their ICT capacity. Furthermore, the study's results showed that that some teachers still rely on traditional teaching methods. They do not fully understand the potential of ICT for enhancing teaching and learning process and hessite to apply ICT into their teaching.

Finally, the mismatch between the learners' socio-cultural backgrounds and the ICT learning environment was identified as another significant factor affecting learners' ICT capacity. The results from the study showed that the socio-cultural context in which learners are located can influence their attitudes towards ICT use which is quite in line with what Nhu and her colleagues found in their research (Nhu et al, 2019). For example, some learners from rural areas may not realize the relevance of ICT to their daily lives, and some learners from conservative families may face social and cultural barriers to the use of ICT.

4.3. Identification of the contradictions and conflicts in the ICT learning process

The contradictions and conflicts in the ICT learning process were identified through the lens of Activity Theory. The study found that the learners' ICT capacity is influenced by the interplay between the various elements of their learning activity system, including the learners themselves, their teachers, their families, the curriculum, and the socio-cultural context. The conflicts and contradictions arise when these elements are not well-aligned or when there is a lack of support for ICT learning at different levels of the system.

For example, some learners may have a high level of interest in using ICT for learning, but they may lack access to ICT resources and opportunities to practice their skills. Similarly, some teachers may be willing to integrate ICT into their teaching practices

V. DISCUSSION

The findings based on Activity Theory of this study complies with those of previous research that has used this framework to investiage the involvement of technology use in educational contexts (Engeström, 2019). As a matter of fact, thanks to the use of Activity Theory in this study,a deep understanding of the contextual factors that influenced the ICT capacity of young learners in Vietnam has been revealed which include the role of cultural and social norms, access to ICT resources, and pedagogical practices (Pham et al, 2018). The findings suggest that the learning process is not only influenced by individual factors but also by the broader social and cultural contexts in which learners are located in a wider context (Lave & Wenger, 1991).

The theoretical and practical implications of the study are significant for educators and policymakers interested in promoting ICT capacity among young learners in Vietnam. The study highlights the importance of considering the broader social and cultural contexts in which technology use occurs, and the need to provide equitable access to resources and support for learners from all backgrounds. Additionally, the identification of specific contradictions and conflicts in the learning process provides a roadmap for designing interventions that can address these challenges and promote more effective and meaningful technology use in educational settings.

However, the study has several limitations that must be acknowledged. First, the sample size was relatively small and drawn from a single geographic location in Vietnam, which limits the generalizability of the findings. Future research could replicate the study with a larger and more diverse sample to test the robustness of the results. Second, the study relied on self-reported data, which may be subject to response bias and social desirability effects. Future research could utilize multiple methods to triangulate findings and validate self-reported data. Overall, the study makes an important contribution to our understanding of the ICT capacity of young learners in Vietnam, and the factors that influence their learning process. The use of Activity Theory as a theoretical framework allowed for a nuanced and contextualized analysis of the data, highlighting the complex interplay between individual, social, and cultural factors that shape technology use in educational settings. The implications of the study for practice and policy underscore the need for a holistic approach to technology integration that recognizes the diverse needs and contexts of learners, and provides equitable access to resources and support.

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