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Integration of the Mobile Device into the Classroom Practice in Migrant Learning Centers in Thailand: A Case Study

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ABSTRACT

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The need for Information and Communication Technology (ICT) in education in a developing country has been growing steadily since ICT has the potential to wield a positive influence on education in terms of access, quality, and equity. While developing countries have paid specific attention to the integration of ICT into formal education, recently, the effort to integrate ICT at all levels, including Non-Formal Education (NFE) has grown and, within this context, UNESCO Bangkok, launched ICT in education projects for migrant children in Migrant Learning Centers (MLCs) in 2016. However, even as the key question has been determined to be "how is ICT integrated into the educational setting?" when it comes to ICT in education, sufficient knowledge to address the question has not yet been revealed within the context of MLCs in Thailand. Therefore, this study aims to reveal how the mobile device has been integrated into classroom practices in MLCs throughout Thailand.

A qualitative case study was conducted with five classroom practices where the mobile device is integrated into two MLCs in the Thai cities, Bangkok and Mae Sot. To understand the current integration of the mobile device into classroom practices in MLCs, multiple research methods like document analysis, classroom observation, and structured-interviews were used. In addition, the teachers of each classroom practice participated in the research as main participants and learners, while the principals of each MLC and the project officer of UNESCO Bangkok also participated as supplementary participants during the observation and interview.

The research inference observes that the mobile device is introduced in the MLCs of Thailand in order to enhance the literacy skills of migrant children. Since one of the chronic obstacles in the MLCs is the lack of resources, the mobile device is designed to include various teaching and learning materials, including textbooks, reading books, lesson plans, and other materials. Consequently, the mobile device is used as a replacement for the textbook in each case. The study also demonstrates five different aspects related to the integration of the mobile device into classroom practices. In each case, the integration of the mobile device is revealed in different facets in terms of (1) the teacher's use of the mobile device; (2) the mobile device with other tools; (3) the contents in the mobile device; (4) the student's individual activity with the mobile device; and (5) the instruction method. Furthermore, the unique context of MLCs, including physical environment, participant features, and the organization environment, influences the integration of the mobile device in each case.

Consequently, the study revealed the unveiled phenomenon on how the mobile device is integrated into the classroom practices in MLCs and simultaneously, the study helped to shed light on the unique context of MLCs in Thailand. Therefore, the study not only presents its integration into the authentic

classroom practices in MLCs with a variety of aspects but also reveals specific contexts behind the different aspects of integration of the mobile in each case. Combined together, the value of the integration of the mobile device for the education of migrant children in specific contexts is addressed. Thus, the study contributes to the academic world to understand the education of migrant children in the MLCs in Thailand. However, the study could not include the abundant voices from learners due to ethical and practical reasons. Thus, future research focusing on learners is expected.

Keyword: ICT in Education, ICT Integration for the Marginalized, Education of Migrant Children, Migrant Learning Centers, Thailand

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CHAPTER 1. INTRODUCTION

1.1. Background

Since 2016, several Migrant Learning Centers (MLCs) in Thailand started to integrate the mobile device equipped with learning applications into their classes for migrant children, which was supported by UNESCO Bangkok. As the case reveals, the trial to introduce Information and Communication Technology (ICT) for the educationally marginalized groups such as migrant and stateless children, has grown following ICT integration into the formal education system in developing countries. The discussion about ICT in education has started from high-income countries and spread to developing countries due to the expected merits ensuing from integrating ICT into education. This relatively new trend in education has intensified in recent years with the arrival of the fourth industrial revolution amidst an informational society. The fourth industrial revolution is not limited to some specific countries; many parts of the world have introduced "ICT in education" for their citizens to acquire 21st century skills. At the same time, given the perception of the potential of ICT in education, intertwined with development, per se, diverse International Organizations (IOs), Non-Governmental Organizations (NGOs), as well as, the government of developing countries have started to take a more significant interest in ICT in education.

Within this context, the positive impact of ICT in education has been revealed in terms of access, quality, and equity, particularly for the marginalized part of a country (Robinson, 2008). Therefore, it is now more accessible to an educationally marginalized group of people such as illiterate adults, the disabled, out-of-school children (OOSC), and migrants or ethnic minorities. Notably, in Thailand, due to its relatively superior economic conditions when compared to

neighboring countries, there has been an enormous influx of migrants from countries across the border, especially Myanmar. Nevertheless, due to their unstable and fragile state, migrant children have fewer opportunities to take quality education compared to their native counterparts. Recently, UNESCO Bangkok, under the new Flexible Learning Strategies (FLS), started ICT in education projects for migrant children in Thailand. UNESCO Bangkok initiated the projects aiming to apply the mobile device to the classes in the MLCs in Thailand. Thus, MLCs in Thailand have been given mobile devices equipped with a specially designed learning application called LearnBig for a better quality of education for migrant children.

1.2. Statement of the Problem

The appropriate integration of ICT device into education can lead to an increased access to a better quality of education for disadvantaged people. However, frequently, the expected impact has not been achieved with ICT in the education project due to some of the obstacles seen in developing countries. They include a lack of budget, infrastructure, and unstable internet or mobile connection. Nevertheless, many studies about ICT in education in developing countries have suggested innovative ways to introduce and integrate ICT devices into education in the context of developing countries (Domingo, 2004; Enock, Kelly, Halewood, & Blackman, 2012; Jhurree, 2005; Khan, Hasan, & Clement, 2012; Kirkman, Cornelius, Sachs, & Schwab, 2002; Tabira & Otieno, 2017). However, a more severe problem remains because the physical infrastructure does not assure an enhanced access or quality in education. A key to the success of ICT in education is not “what” but “how” (Tinio, 2003). Enock, Kelly, Halewood, & Blackman (2012) contend that, “there is no direct correlation between increased spending on ICT and improved education performance”; instead, the benefits of integrating

ICT into education will be generated by "how ICT is deployed than of what technologies are used." That is, the answer to "how" is the key to help the expected merits of ICT in education materialize (Enock et al., 2012; Gebremedhin & Fenta, 2015; Jhurree, 2005).

Nevertheless, there has not been much research to reveal how ICT is integrated into these MLCs or broader Non-Formal Education (NFE) contexts. One of the hidden discourses behind this situation is little interest in NFE compared to the formal education system. Even if the meaning and the value of NFE is newly established along with the discussion of lifelong learning and OOSC within Education for All (EFA) and Sustainable Development Goals (SDGs) (Dighe, 2009; InfoDev, 2010; Yasunaga, 2014), there still exists the wide-spread notion that NFE is somewhat inferior to formal education (Torres, 2000; Yasunaga, 2014). Consequently, it results in fewer studies on ICT in education in the NFE sectors such as MLCs. Therefore, even if it is required to thoroughly consider how to integrate ICT in MLCs in Thailand as their situation is significantly different to formal schools, the answer to "how" remains unrevealed as Dighe (2009) and Intarat, Chanchalor, & Murphy (2017) argue.

1.3. Purpose of the Study

The primary purpose of the study is to understand how the distributed mobile device is integrated into classroom practices in the MLCs in Thailand. Therefore, the study examined five cases to reveal detailed information on the current method of integrating mobile devices into classroom practices. Consequently, the main purpose of this study is as follows:

(1) To examine how the mobile device is integrated into the classroom practice in MLCs in Thailand

(2) To explain why the mobile device is integrated into the classroom practice in the revealed way in MLCs in Thailand.

1.4. Research Questions

The main research question to meet the objective of the study is basically the question of "how." However, to precisely and holistically understand the current way of integration of the mobile device into the classroom practice in MLCs, the study also asks questions regarding "why." Therefore, there are two research questions.

(1) How is the mobile device integrated into the classroom practice in MLCs in Thailand?

(2) Why is the mobile device integrated into the classroom practice in MLCs in Thailand in that way?

Therefore, the case study was conducted with five cases of the classroom practice in two MLCs in Bangkok and Mae Sot, where a large number of Myanmar migrants reside. The study attempts to reveal the current aspect of how the mobile device is integrated into each case of classroom practice. At this point, to add a holistic view to the study, multiple methods are used to collect data. Thus, the classroom observations to understand the methods of integration in MLCs and interviews with diverse research participants were conducted. In addition, document analysis was conducted to support facts, which are revealed through observation and interview. Furthermore, the member-check process was included in this study to raise the reliability of research findings.

1.5. Significance of the Study

The study is significant from an academic aspect. To begin with, the study aims to contribute to the academic field by answering how ICT is integrated into education in MLCs, which has not been answered. Moreover, the study reveals the complex contextual dynamic behind the integration of the mobile device into the classroom practice in MLCs in Thailand. Thus, the study not only adds a deeper understanding of how the mobile device is integrated into classroom practice in MLCs but also reveals the unique context of the MLCs. Consequently, the study increases the understating of MLCs and the education of migrant children; additionally, it grasps the current situation and complex dynamics surrounding ICT integration in MLCs. In addition, the study provides suggestions for future research and projects with the expectation of increased international attention on the education of migrant children, who are the most severely marginalized group.

CHAPTER 2. LITERATURE REVIEW

2.1. Introduction to ICT in Education

2.1.1. Definition of ICT in Education

Information and Communication Technology refers "a diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information (Blurton, 1999)". It consists of the hardware, software and even networks including radio, television, phone, tablet, computer, internet, artificial intelligence and so on (HUAWEI & CSR ASIA, n.d.; Pelgrum & Law, 2003; Tinio, 2003). Notably, the research focuses on the mobile device equipped with the learning application, which is used in targeting migrant learning centers in Thailand. Mobile devices refer to tablets, mobile or smartphone, and e-readers, which enable access to learning assets beyond restrictions in time and place for specific educational purpose (HUAWEI & CSR ASIA, n.d.). Particularly, mobile devices allow to digital services such as online learning programs, online library, or game-based learning. The digital services can build education materials for new livelihood teaching and learning experience. Also, especially for a teacher, it has the potential to provide additional teacher training chance and monitoring tools (HUAWEI & CSR ASIA, n.d.). Consequently, the integration of mobile devices with digital resources into education can change the teaching and learning process to provide quality education.

ICT in education can be described with diverse ways such as one-to-many technologies or peer-to-peer technologies in schools, as well as, across the formal or informal boundaries (Couch, 2017). Thus, it presents a broader context to integrate ICT devices into diverse educational fields with specific educational purposes. Indeed, since the spectrum of ICT is broad, as well as, the purpose of educational activity, ICT in education, per se, refers to different dimensions of ICT integration into an education scene. For example, according to Pelgrum & Law (2003), ICT can be applied to education with three distinctive roles, which differentiate ICT, particularly in the education curriculum. In this study, ICT in Education refers to the second and third definition. In the classroom setting, mobile devices are used as one tool to support teaching and learning activity, and it is related to the second concept. However, this designed mobile device includes materials to support and enhance the teacher's competency, such as teacher training materials or curriculum. In this regards, it can be implied that ICT in Education in the MLCs refers to the third concept.

Table 1. Three roles of ICT in the Curriculum (Pelgrum & Law, 2003)

Leaning about ICT	ICT as a subject of learning in the school curriculum, such as computer literacy, computer science, and informational literacy
Learning with ICT	The use of ICT as a medium to enhance instruction or to replace other media without changing the beliefs to teaching and learning
Learning through ICT	ICT as an essential tool into a course or curriculum, such that the teaching and learning is no longer possible without ICT

Furthermore, Collis (1997) (cited in Pelgrum & Law, 2003) explains the way ICT is integrated into educational context, schools, with three pair factors with incompatible dimensions. The first pair is the distributed dimension versus

stand-alone dimension, which is about the accessibility of ICT. Therefore, ICT is locally available like local CD-ROM, ICT in education will imply the stand-alone dimension, whereas, a user can access to ICT from remote locations through the internet like web-based systems, it will imply the distributed dimension. The second pair of dimensions is the producer versus consumer dimensions, which are related to how ICT educational contents have been generated. Thus, the producer dimension refers that the situation where contents are made by the users like teachers or students, while the contents have been made by someone else to be accessible to the user in consumer dimension. The last pair, the structure dimension versus learner-controlled dimension, indicates the degree to which pre-determined learning route versus ICT being used for more exploratory learning activities. In this study, the ICT device, the mobile tablet with a digital resource developed by UNESCO Bangkok, is used as an education tool mainly according to teachers' instruction. ICT in education in the study is placed in a "distributed, consumer, and structured" dimension.

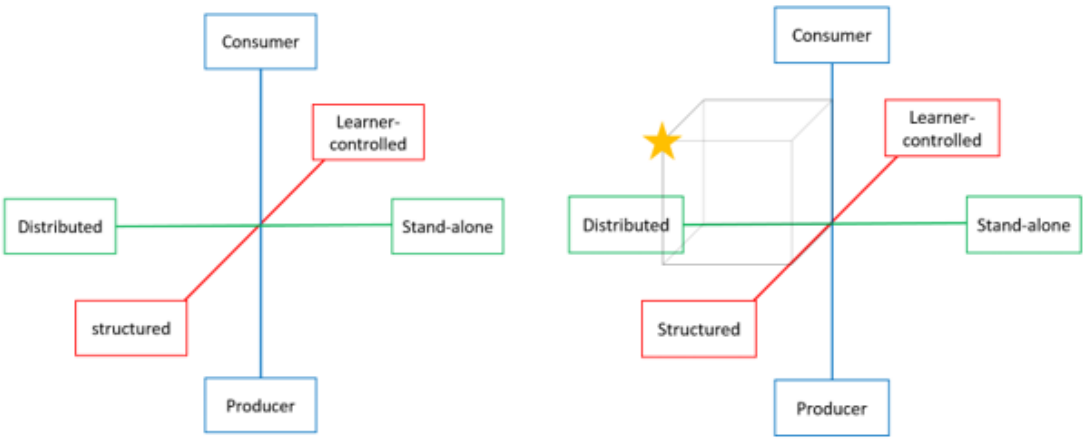

Figure 1. 8 Dimensions of ICT in Educational Context

2.1.2. ICT in Education in Developing Countries

Although the term “ICT in education” is emphasized in education and international development field recently, it is not a new concept. From the early 1980s, the school started to introduce computers as a subject or learning tools, which was encouraged by educational policymakers who have an interest in computer in education, since relatively cheaper microcomputers became available for the public (Pelgrum & Law, 2003). Later, the term "computer" was replaced by "ICT" since information became more critical in an informational society, and mainly e-mail became available to the public (Pelgrum & Law, 2003). Further, along with growing access to digital tools and network through the World Wide Web and Internet, ICT has rapidly developed in educational sectors (Blurton, 1999; Pelgrum, 2001). Following this global trend, both of developed and developing countries urged to foster ICT in education for their people to be ready for the 21st knowledge-based society (Jhurree, 2005; Pelgrum & Law, 2003; World Bank, 1998).

Recently, ICT became essential in education and international development area with the arrival of the 4th industrial revolution. The importance of ICT is intensified with the 4th industrial revolution since ICT is the backbone of informational society (Pelgrum, 2001). Many middle- and high-income countries have strived for effective integration of ICT into their education system due to the expected merits. Moreover, as the 4th industrial revolution is a global trend ICT has become more ubiquitous innumerable workplaces, communities, and societies, developing countries have also joined in this global trend, introducing “ICT in education.” At the same time, the discussion about ICT and development has been actively done for several years, resulting in that ICT will permeate in developing countries (Kirkman et al., 2002; Tinio, 2003; Tongkaw, 2013).

At the same time, the SDGs emphasize the value of inclusiveness, equity,

and quality in terms of education and development. The education goal, SDG 4, especially emphasizes them, saying, “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.” Also, target 4.4 specifies the importance of ICT skills in education. Thus, in the international development field, global interest in ICT in education across the world, including developing countries, has been more seriously considered since the global umbrella agenda is explicitly addressing it.

Through this discussion about ICT and development for several years, it has been presented that ICTs will permeate the poorest regions of the world to support poor people in developing countries (Kirkman et al., 2002; Tongkaw, 2013). Particularly, previous discussions reveal that the appropriate integration of ICT into education can transform the actual learning environment in developing countries. First of all, the ICT has a potential to support the teacher’s in-class activities and administrative work and foster teacher’s professional development to leads to educational development and transformation in developing countries (Enock et al., 2012; Fu, 2013; Jhurree, 2005; Tabira & Otieno, 2017). ICT can support teachers to improve their instruction-design works, playing a role as a useful tool to supplement teachers’ instruction (Jhurree, 2005; Khan et al., 2012). In addition, it can facilitate the teachers’ access to educational contents and their creative use of their own material (Fu, 2013), which ultimately leads to a better quality of education for students.

Moreover, ICT in education can enhance student-centered activity and higher-order thinking skills, helping learners to be ready for their future. That is, the introduction of ICT into an educational scene can change the entire learning environment to be more collaborative, student-centered, and creative (Fu, 2013; Khan et al., 2012). Indeed, Khan et al. (2012) say that “ICT has the potential to transform the nature of education.” The change of learning environment brings a

positive difference in the learning process. ICT integration into education enhance the communication skills between students and teachers, as well as cooperative ability, problem-solving ability, and decision-making skills (Whitworth and Berson, 2003). Also, it can support student-centered learning and offer an opportunity to develop critical thinking skills, having an impact on students' cognitive abilities (Fu, 2013).

Furthermore, ICT has the potential to help learners to access information recourses with relatively cheaper money (Enock et al., 2012; Fu, 2013). To pursue quality education, the content, strategies, and skills in the classroom should be abundant and useful for learners' real life. At the same time, the ability related to ICT became essential because ICT is the backbone of informational society, intensified with the 4th industrial revolution (Pelgrum, 2001). The natural exposure to technology during the learning process increases the opportunities for learners to acquire the ICT related skills which are vital in the knowledge/information society within the globalized world (Jhurree, 2005; Khan et al., 2012; Pelgrum, 2001).

2.1.3. Discussions on ICT in Education in Developing Countries

Even though many of developing countries are trying to adapt technologies into their educational systems due to the expected merits, it doesn't implicate there exists only positive perspective on ICT in education in developing countries in both educational area and international development area. Indeed, apart from the expenditure on ICT in education, many developing countries are far from achieving educational benefits from the perspective of access, equity and quality education (Enock et al., 2012; Khan et al., 2012). Consequently, contrary to that ICT can positively impact on development, the lack of appropriate integration of ICT into education makes it harder for developing countries to

compete in a global economy. Therefore, in some cases, ICT in education even intensifies the disparities between developed and developing countries and within developing countries.

Actually, according to Pelgrum & Law (2003), developing countries as the second mover they could realize not only the benefits of integrating ICT in education but also the pitfalls which might be encountered in a future from their forerunners experience. Thus, if the conditions were the same in both types of countries, it will be easy to get the expected merits from integrating ICT into education for the followers. However, indeed, those conditions are not the same at the national, regional, or community level. As the reality of "Digital Dividend" describes, ICT in education in developing countries is in their infant stage while intensifying the huge existing disparity between developed and developing countries (Tinio, 2003).

That is, even if there have been several trials to integrate ICT in education and many studies have revealed the benefits of ICT in education, still there is a considerable gap between the ideal and the reality in many developing countries because of the lack of capacity at all levels to integrate ICT into education effectively (Enock et al., 2012; Tongkaw, 2013). The lack of capacity at all levels includes the lack of budget, infrastructure, and policies, which are the inherent problem of developing countries. At first, even if developing countries are more equipped with hardware infrastructure rather than before, still insufficient funds and lack of resources are the major barriers as ICT in education requires high expenditure (Khan et al., 2012; Tabira & Otieno, 2017). Especially South East Asia countries have very uneven information and communication infrastructure (Domingo, 2004). Furthermore, despite the importance of the software infrastructure, many developing countries do rarely adapt ICT in education successfully and appropriately because of the lack of appropriate content,

knowledge, skill and instructional programs (Enock et al., 2012; Khan et al., 2012).

Moreover, even if many developing countries are now conducting many projects or proposing their effort to integrate ICT in their education systems, lack of the appropriate policy and plan, at the national, regional and school level, seriously delay ICT integration into education (Khan et al., 2012; Tongkaw, 2013). The absence of comprehensive policies in those countries is critical in all initiative related to ICT in education for real impact. Moreover, the policies or strategies not appropriately attuned to the specific context results in a considerable gap between national-level plan and school-level implementing in developing countries (Domingo, 2004; Tongkaw, 2013). Furthermore, the intransigent condition of a country hinders the positive introduction of ICT to education. In some case, corruption and pervasive poverty among society would condemn the progress in education (Khan et al., 2012). Moreover, lack of up-to-date on education or desirable educational leaderships hinders desirable ICT in education (Enock et al., 2012; Tongkaw, 2013).

Nevertheless, the positive potential of ICT in Education should not be ignored. Abovementioned, ICT in education can not only support the essential subjects of teaching and learning process, teachers and learners but also can change the nature of education to foster the learners to acquire 21st skills such as collaborative skills and creative thinking. At this point, the negative perspective on ICT in education has not been caused by "ICT in education," per se, but by the external and internal barriers to appropriately deploy ICT in education in developing countries. In this regard, some innovative ways to integrate ICT into education in developing countries with more efficiency and higher practicality to overcome external barriers have been suggested (see Table 2).

Table 2. External Barriers and Solutions

<table>
<tr><th>Barrier</th><th>Lack of Budget</th><th>Lack of Infrastructure</th><th>Inappropriate Policy</th></tr>
<tr><td rowspan="2">Solution</td><td>1. Finding funding resources (e.g., private-public partnership) (Domingo, 2004; Jhurree, 2005; Kirkman et al., 2002)
2. Community Involvement (Kirkman et al., 2002)</td><td>1. working with local software companies (Khan et al., 2012)
2. Wireless platform (Enock et al., 2012; Kirkman et al., 2002)</td><td rowspan="2">1. Ask Commitment from a variety of level (Khan et al., 2012; Kirkman et al., 2002)
2. Cooperation with a relevant area (e.g., telecommunication company) (Enock et al., 2012; Jhurree, 2005)
3. context-analysis (Enock et al., 2012; Jhurree, 2005)</td></tr>
<tr><td colspan="2">1. Low-cost equipment (Tabira & Otieno, 2017)
2. Recycling and Redeployment of old machines (Jhurree, 2005)</td></tr>
</table>

Therefore, the remaining challenge is to deploy ICT in education appropriately. Thus, in this study, the author adheres that appropriate ICT integration can positively influence quality education in developing countries. However, since the current integration of ICT into education for migrant children in Thailand has not been revealed in previous studies, this research starts from revealing the current way of ICT integration in MLCs in Thailand ahead to discussing the positive impact of ICT in Education in MLCs in Thailand.

2.2. Education of the Marginalized Migrant Children in Thailand

2.2.1 Marginalized Migrant Children in Thailand

One of the features which define the 21st world is globalization. In the global era, the world has become smaller and more intimate, and, at the same time, the number of migrants has steadily increased. The world became smaller and more intimate, particularly the global capital is intertwined; mass migration became more accelerated, which created that mass international migration as a new world disorder (Anderson, 1992). That is, a large number of international migrants have crossed an international border with economic reasons in a long-term or short-term (International Labour Organization (ILO), 2015).

Table 3. Number of Migrants in the World 1990~2017 (UN DESA, 2017)

Year	Number of Migrants
1990	152,542,373
1995	160,700,028
2000	172,604,257
2005	190,531,600
2010	220,019,266
2015	247,585,744
2017	257,715,425

In case of Asia, an origin of 40% of international migrants, more than half of migrants (59 million) move to another Asian country, and these intraregional migrants within Asia have increased over 35 million from 1990 to 2015 (International Labour Organization (ILO), 2015). That is, a large number of migrants from Asian countries are intraregional migrants who decided to move to adjacent Asian countries, not Europe or Northern America. At this point, international migrants tend to move from less developing countries to advanced one due to not equally distributed resources across the world (Guo, 2014). In this regard, the intraregional migration within Southeast Asia happen between Myanmar and Thailand, and people usually move from Myanmar to Thailand (see Figure 2). The top country of origin is Myanmar (2,151,000), and the top country

of destination is Thailand (3,579,000) within ASEAN(Association of South-East Asian Nations) (HUAWEI & CSR ASIA, n.d.).

Figure 2. Top 20 migration corridors from Asian Countries (IOM, 2018)

Indeed, there has been a massive influx of migrants, and their children into Thailand from adjacent countries such as Myanmar and Lad PDR due to the economic unbalance and political reason (BEAM, n.d.). At this point, migrants from Myanmar have made up the most substantial portion of migrants, and more than 60% of people are from Myanmar (Save the Children & World Education, 2014). Moreover, the large number of Myanmar migrants are from Karen, Shan or Mon states whose ethnic-based movements have occurred significant conflict between them and the authoritarian Burmese government, and flee from Myanmar countably long ago (Nawarat, 2014), which means that the history of Myanmar migrant in Thailand is not just one two days. Also, many migrants stay in Thailand in the long-term and form their families in Thailand. According to Save the

Children (2014), the vast majority of Myanmar migrants have no plans to go back to Myanmar soon even if they want to. Consequently, it increases the number of Myanmar migrant children in Thailand, who migrated from Myanmar with their families or were born in Thailand. Currently, between 300,000 to 400,000 migrant children reside in Thailand[1]. However, they are illegible for Thai citizenship, and there is no accurate figure about how many migrant children in Thailand (Nawarat, 2012, 2018). Judging from that Mahidol Migrant Center document estimates a much higher number of migrants in Thailand including undocumented one (Save the Children & World Education, 2014), there should be a higher number of migrant children in Thailand than the number captured by official figures which count the registered children (see Figure 3).

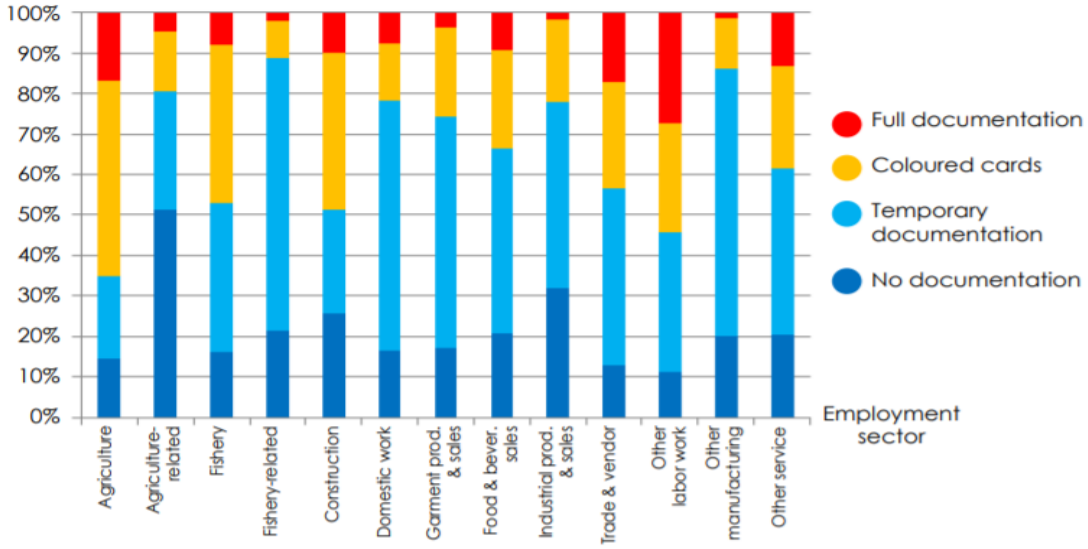

Figure 3. Documentation statuses of the surveyed migrants by employment sector (%) (IOM & Asian Research Center for Migration, 2013)

[1] Assistance to Migrant Children, IOM Thailand (n.d.) retrieved from https://thailand.iom.int/sites/default/files/Infosheets/IOM%20Infosheet%20-%20Assistance%20to%20Migrant%20Children.pdf

2.2.2. Education of Migrant Children in Thailand

Even if there are estimated more than 300,000 migrant children in Thailand, Ball & Dim (2016) point out that only 20% of migrant children are attending the school of any kind. That is, the majority of migrant children in Thailand are out-of-school. They are more crucially deprived of their educational right compared to native children and even invisible in statistics because they are undocumented (Guo, 2014; Løkse et al., 2017). Thailand government perceives education as a gateway to migrant children's social inclusion and succeed in Thailand and Myanmar (Ball & Dim, 2016), having involved increasing access to quality education for migrant children in Thailand. With these efforts, Thailand government opens Thai state schools to migrant children, and about 126,000 migrant children are enrolled in formal or non-formal education institutes provided by the Thai government (Ball & Dim, 2016; BEAM, n.d.).

Thailand Education Policy on Migrant Children

In 1990, Thailand hosted the World Conference on EFA in Jomtien, Thailand. Since then, Thailand has given out the signals to the world that they will actively participate in the EFA agenda due to the education for the considerable number of migrant children (Nawarat, 2012, 2018). To follow up the conference, Thailand Ministry of Education (MOE) ratified the Convention on the Rights of the Child[2] to provide education to marginalized groups in Thailand, including migrant children from other countries (Nawarat, 2018). This effort is also reflected

[2] The CRC commits signatories to make "primary education compulsory and available free to all" and secondary education "available and accessible to every child" (Article 28) Cited in Discourse on migrant education policy: Patterns of words and outcomes in Thailand (Narawat, 2018)

in Thailand law. Thailand government has signed in international law, avowing that every child should receive free and compulsory primary education to be protected from child labor (Nawarat, 2010). However, the Thai authorities indicated that legal migrant children could reach to Thai state school so long as they achieved an adequate standard of Thai language ability (Pyne, 2007). At this point, according to Petchot (2011), education is seen as the best solution not only to end child labor but also encourage social inclusion and strengthen national security.

Later on, in 2005, there was a big transition to include children who are lack of civil registration with the Cabinet Resolution on Education for Unregistered Persons:

> *Undocumented children and children of non-Thai nationals have the right to schooling without restriction on levels of education and in all areas of education. Schools will accept and register all children. After graduation, schools or educational institutes must issue educational documents to all children whether or not they have legal documents or Thai nationality. Moreover, all children are entitled to continue their education at all levels and in all types of education*[3].

Thailand's Cabinet explicitly approved a progressive registration to allow non-Thai and even unregistered migrant children to access to all level of Thai education (Petchot, 2011; Pyne, 2007; Save the Children & World Education, 2014; VSO, 2013). Therefore, as the government agreed upon this principle by a cabinet decision, migrant children without Thai nationality can also enjoy their educational right in Thai state schools. Indeed, the Cabinet Resolution contribute

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[3] Retrieved from "unofficial translation of policy" cited in Migrating Knowledge, Schooling, Statelessness and Safety at the Thailand-Burma Border, Pyne (2007)

to more migrant children attending Thai state schools. Nawarat (2012) revealed which factors of the Cabinet Resolution tow the substantial increase in the number of migrant children attending schools:

(1) State schools are officially mandated to accept migrant and stateless children and are given basic funding to do so;

(2) Direct costs to the children's families for schooling have been reduced because of the increased subsidies for school children in general;

(3) Migrant and stateless children are eligible to receive certificates of graduation;

(4) The new regulation permits for these children to be able to travel within Thailand for the sake of seeking a suitable school.

Therefore, the number of migrant children attending Thai state school has increased with the legal and political assurance which impact to full scope of education from enrolment to graduation. However, Nawarat (2012) concluded that there had been only "limited increase of migrant and stateless children in Thai state school" due to other barriers.

The Barriers

The condition of legality is genuinely a significant barrier which directly hinders migrant children from getting learning opportunity in formal school, it is not one and only restriction on account of many other obstacles which makes the schools are inaccessible or unappealing to migrant children (Ball & Dim, 2016; BEAM, n.d.; Nawarat, 2010, 2012, 2014, 2018). They can be categorized into three elements, which are a financial barrier, cultural/language barrier, and conditional barrier.

First of all, the most cardinal barrier is the financial factor. The access to Thai state schools is officially free, but it does not mean that it is entirely free because there exist indirect economic costs such as uniforms, books, transportation and food (HUAWEI & CSR ASIA, n.d.; Nawarat, 2012, 2014). According to Nawarat (2012), "on average, migrant workers receive not above 70 % of the minimum wage rate set in Thailand". In this regard, ILO data shows that one-third of Myanmar migrants in Thailand earn less than 300 Baht, the minimum wage. Moreover, particularly in Tak province, no more than 10% who earn more than 300 Baht in every sector (see Figure 4). Therefore, migrant parents should be able to cost extra money to make their children attend Thai state schools. However, it is rarely possible.

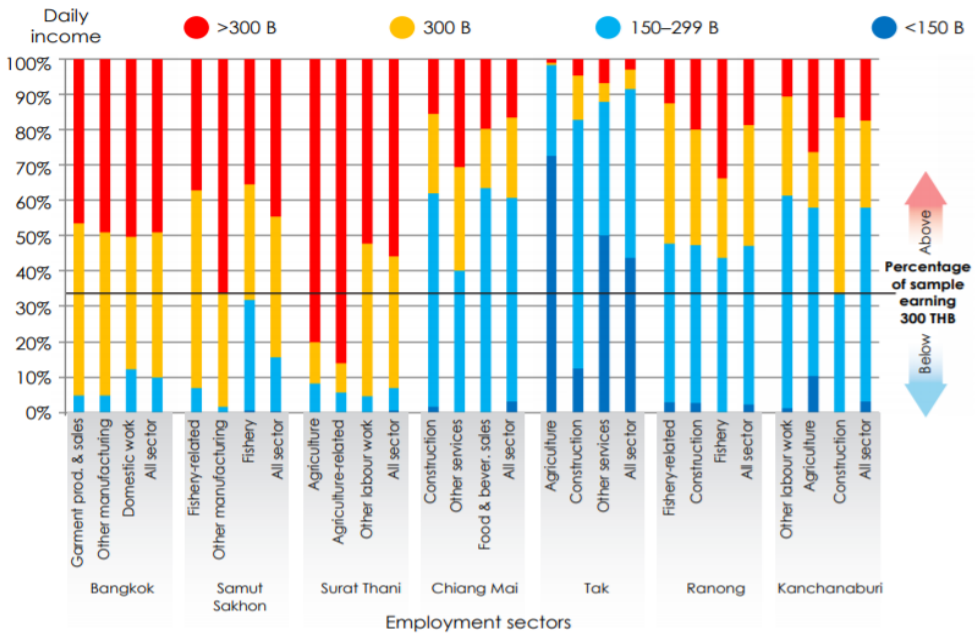

Figure 4. Surveyed migrants' income levels of each province (IOM & Asian Research Center for Migration, 2013)

Secondly, the cultural factors, including the language barrier, cannot be ignored. It is deeply related to that the Thai policy tremendously emphasizes the loyalty to "Thainess" (Ball & Dim, 2016). Therefore, inevitably, general cultural difference harms migrant children to be in Thai schools because they do not have shared cultural background assumption with Thai counterpart (Nawarat, 2018). Furthermore, aforementioned, the Thai authorities have indicated that migrant children should reach an adequate standard in Thai language ability (Pyne, 2007). However, it is tremendously difficult for migrant children to achieve Thai language proficiency before they are incorporated into Thai state schools. Even if they can listen and speak in the Thai language as they sustain their lives in Thailand, regarding literacy, the ability to read and write, many of migrant children are not achieved the required level to attend state schools without previous educational experience. However, the regular medium of the curriculum in Thai state school is only Thai language, and also the Thai government has not made any progress in terms of bilingual classes or teachers (Nawarat, 2012). Therefore, the lack of appropriate Thai language ability impede that migrant children can enroll a school and follow the curriculum in the school (Ball & Dim, 2016; HUAWEI & CSR ASIA, n.d.; Nawarat, 2012).

The last is the conditional barrier, which is the most fundamental part. The conditional barriers are related to their identity or situation as unstable migrants. In terms of the conditional barrier, two factors can be considered. The first factor is deeply related to particularly undocumented or unregistered migrant parents. Aforementioned, there is a significant number of unregistered or undocumented migrants. Even though the Thai government allows undocumented migrant children to attend state schools, the safety or education of undocumented population can be assured as far as it goes to children. Migrant parents cannot avoid some exposure to Thai bureaucracy, which involves the higher risky undocumented migrant parents to be deported or punished to enroll the children in

the school (HUAWEI & CSR ASIA, n.d.; Nawarat, 2012). At this situation, the large amount of undocumented migrant parents does not accept the risk to make their children attend a state school. For example, in the case of Tak province, a research field of this study, there are much more undocumented migrants than documented migrants (see Figure 5). Despite their Informality or illegality, they are the important subjects which form the society in this border area (Lee, 2008b). In this different context, it is well-nigh impossible that all the migrant children can have formal school education in Thailand.

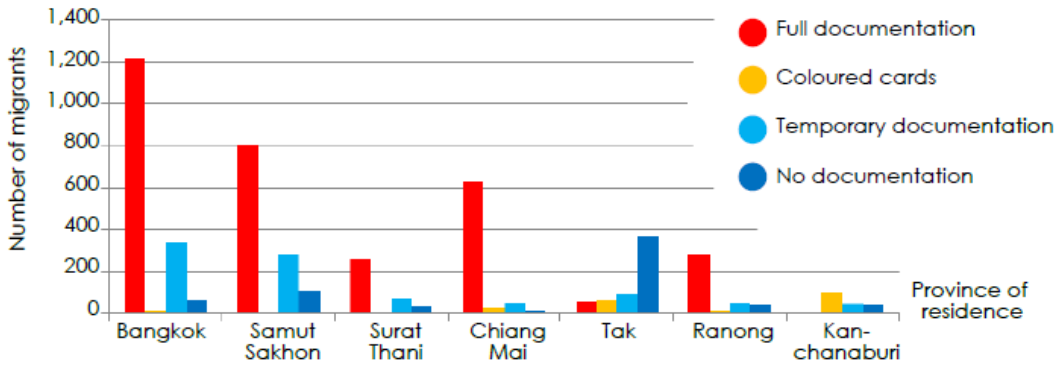

Figure 5. Documentation statuses of the surveyed migrants, by the province of current Residence in Thailand (IOM & Asian Research Center for Migration, 2013)

The other factor is the mobile nature of migrant children. There is a higher possibility for them to move back to their country or other regions to earn money even while their children attending schools. Therefore, when their families migrate within or across the countries, migrant children become to miss schooling (Dosono, 2012). Moreover, migrant parents intentionally decide not to send their children to Thai state schools due to the schools are not appropriate for their children's future in the home country (BEAM, n.d.).

To sum up, frequently, regulation or policy has its limitation and not implemented as it has, and the inclusive education policy for migrant children has not been an exception. There exists a gap between the Thai educational policy for migrant children and outcomes (Nawarat, 2010, 2018). As long as there are many barriers out there which the migrant children are encountering, Thai state school cannot be the only one best alternative or solution to guarantee the basic educational right of migrant children in Thailand.

2.2.3. Migrant Learning Centers in Thailand

Ball & Dim (2016) describes the reality that only 4% of Myanmar migrant children are taking formal school education. In this situation, where migrant children's education right cannot be satisfied with the formal education system, many migrant children are receiving the classes in alternative learning centers, which is usually called MLCs[4]. At first, MLCs were established as an immediate response to society and parent asking safe places for children (Nawarat, 2014). Later on, the more migrants coming to the Thai side, the higher ask for their children's education. Related to this, Myanmar migrants established its learning centers in cooperation with NGOs and IOs (Lee, 2013). Thus, MLCs have been developed in size and quality to satisfy various needs of more migrant children, including undocumented children as leading educational institutes.

MLCs are still playing a role as foremost educational institutes for migrant children in Thailand after the Thai government decided to open their government

[4] It is also called as migrant school (e.g., BEAM, n.d.; Lee, 2008a, 2014). However, in this study, officially the term, migrant learning center(MLC), is used to emphasize its value as NFE institution and according to UNESCO Bangkok Office and Help Without Frontier, which is the mother organization of the case of this study in Mae Sot.

schools to migrant children due to the barriers described. The discussion on migrant communities addresses that there is an apparent demand for a more appropriate education for migrant children (BEAM, n.d.). In this regard, sometimes, migrant parents decide to send their children to MLCs even if they do not encounter any barrier because their curriculum and medium of language are more suitable for migrant children. Nawarat (2014) says "they(MLCs) depend on a measure of goodwill from the Thai authorities, but do not always find the Thai interpretation of quality in education highly relevant in the Burma context."

As a significant educational organization for migrant children in Thailand, MLCs are compensating the absence of appropriate and legal educational institutes for migrant children (Nawarat, 2012). They not only suggest alternative education program which is more suitable to their linguistic and cultural background but also provides some safe places for migrant children to safely study free from some risks such as child trafficking or abused (Ball & Dim, 2016; Nawarat, 2014). Moreover, MLCs supports the migrant children to appropriated education to be familiar with both sides, particularly in border-area such as Mae Sot in Thailand (BEAM, n.d.).

System

MLCs have a semi-legal or quasi-regular form (Lee, 2014; Nawarat, 2014). Technically, MLCs are non-formal education organization since they are not organized or administrated by either of Thai or Burmese government. They have typically established by themselves, migrants, and been supported by NGOs and the format of each MLC is diverse in terms of the owner and supporting institutes (Lee, 2014a). Moreover, MLCs as other learning centers are NFE Institution, and they have more flexibilities compared to the formal education system. UNICEF & (UIS) (2015) describe NFE is "education that is institutionalized, intentional and planned by an educational provider, alternative

or complement to formal education within the process of the lifelong learning." In a similar vein, InfoDev (2010) defines NFE is "any organized and sustained educational activities that do not correspond exactly to the formal educational systems, which can take place both within and outside educational institutions and cater to persons of all ages." Therefore, NFE connotes different values compared to formal education from the definition. In this regard, NFE is the educational system which has a school-like fixed format, but it has relatively more significant "flexibility" than formal education (Torres, 2000; Yasunaga, 2014). This flexibility has been examined and admitted by educational stakeholders while them realizing the limited meaning of formal schooling and limited reach to education under current formal schooling in developing countries (InfoDev, 2010; Intarat et al., 2017; Yasunaga, 2014). In a similar vein, MLCs in Thailand provide a discriminant educational opportunity with more flexibilities to satisfy migrant children's different educational needs.

However, abovementioned, as the Thai government started to get involved in education for migrant children, MLCs also has undergone a transition to quasi-regular form (Lee, 2014a). Since Thai government consider these MLCs as a strategical place to support migrant children to be ready to be transferred to a Thai government school, they have unofficially collaborated with MLCs and MLCs became guided and regulated to some degree (Nawarat, 2012, 2014). In this regard, Thai non-formal educational policy mentions about the MLCs as non-formal schools and describes that they have a role in supporting migrant people's learning and improvement, including societal development (Nawarat, 2014).

This shift also influences on the curriculum of MLCs. MLCs try to satisfy the unique needs of migrant people, and their curriculum has also changed over times. (Nawarat, 2014) Conducted research on this phenomenon and described the curriculum changes into four stages. At the very initial stage, the main contents

were necessary life skills, literacy, and numeracy. At this time, there was not a severe intervention from Thai government, and the teaching medium was Burmese or Karen because "it was likely to be Karen if almost all of students and teachers were Karen ethnicity." Therefore, the curriculum of the majority of MLCs, as well as, was the one used in Burma with Burmese textbooks, while some of the MLCs adopted the KED (Karen Education Department) curriculum alone or mixed curriculum.

However, after 2005, due to the growing demand for MLCs in both Thai and Burma, the pressure for reform was also generated. Notably, even if the Thai government announced cabinet resolution in 2005, "Thai MOE was unwilling to devote sufficient resource to provide for effective teaching to reduce the gap between principle and practice." Thus, MLCs was recognized as the preparation organization to make student ready to transfer to the Thai government school by the Thai government. In this regard, Thai authorities are especially concerned to make the MLCs to teach Thai L and curriculum. This process of reform has accelerated, and the closer dialogue with MLCs was launched, which results in a new initiative on MLC curriculum reform and their new status from illegal to legal. However, as it was aforementioned, there exists a particular condition such as the language of teaching medium as Thai and aligning the curriculum to the Thai one. Consequently, since many migrant learning centers are lack of resources and budget to hire the qualified Thai teacher, only a few can enjoy the advantage of the reform.

Moreover, Myanmar NFE curriculum also has been introduced into MLCs in Mae Sot since 2014, and a few MLCs are having the cooperation of Myanmar MOE in terms of a curriculum (Ball & Dim, 2016). As a result of all these stages, the curriculum of MLCs in Thailand has gathered some uniformity of curriculum, but, at the same time, still, the different types of curriculums are used in MLCs.

Therefore, out of many options, each MLC should make a decision based on the institution's traits. This diversity based on flexibility can suggest more appropriate alternatives to migrant people in Thailand. A more liberal pluralist system of MLCs attracts more migrant parents and children in Thailand (Nawarat, 2014). Thus, each MLC has diversity in its system: some of the learning centers are very-school like, and they have relatively concrete curriculum such as Thai NFE curriculum or Myanmar Non-Formal Primary Education (NFPE) or Non-Formal Middle school Education (NFME) curriculum, as well as, the management or administrative system; there is a more like unofficial learning center where the classes held in weekend or night time, teaching basic life skills or literacy (Nawarat, 2012).

2.3. ICT in Education for Migrant Children in Thailand

2.3.1. ICT in Education for Marginalized Children in Developing Countries

Globally, there remain many marginalized groups deprived of their educational opportunities. Even if EFA has addressed "quality basic education for children, youth and adults" (Torres, 2000) since 1990, some critics say that it failed to reach its goal of equity in education for the marginalized (Bloom & Cohen, 2011). The one excluded group is OOSC because the basic education in EFA has been shrunk to "schooling" (Torres, 2000). Even though the world has made a significant achievement in terms of student enrolment rate, still there is a long way to go. In 2016, nearly one-fifth of children and adolescent was not attending a school (UNESCO UIS, 2018). According to Løkse et al. (2017), the number of primary-aged OOSC increased by more than half a million globally and the

barriers preventing children from attending schools vary from social and economic constraints to language, migration and stateless.

Particularly, abovementioned, out-of-school migrant children are more crucially deprived of their educational right compared to native children, and they are even invisible in statistics because of their stateless or undocumented condition (Guo, 2014; Løkse et al., 2017). In this context, Cranston-Gingras & Anderson (1990) addresses that the migrant children are the most highly risky group who drop out the school or never attend the school. Fortunately, since the world is getting more interested in enhancing access, quality and equity in education with several global agendas, the interest on the alternative educational system has also grown to handle with the educational issue of these marginalized children.

In this regard, UNESCO Bangkok initiated FLS, which represents "a shift away from a piecemeal approach to meet the learning needs of educationally excluded children towards a more systematic, flexible and rights-based/inclusive interventions appropriately designed to match their needs and circumstance" (UNESCO Bangkok, 2013). It aims to support inclusive and quality education for, particularly vulnerable children. It promotes alternative education, which is equivalency to formal education and fosters flexibility to reach the unreached regions with high-quality educational materials and tools. Furthermore, FLS introduces the use of ICT and mobile devices as a powerful and potential solution to enhance access to quality education for marginalized children, including migrant children.

The learning needs of vulnerable children, such as migrant children or ethnic minority children are more diverse and challenging to be satisfied due to many barriers. In this regard, ICT in education can enhance inclusive education by breaking down some of the walls to access to education, which satisfies their specific needs (HUAWEI & CSR ASIA, n.d.). Indeed, ICT in education can bring

about positive results in terms of increasing access to achieve inclusive education to include the excluded groups by overcoming physical restrictions (Blurton, 1999; Jhurree, 2005; UNESCO Institute for Statistics (UIS), 2015; World Bank, 1998). Abovementioned, the defining features of ICT is its ability to transcend time and space to allow learners to access education resources all over the world (Tinio, 2003). Also, HUAWEI & CSR ASIA (n.d.) claims that ICT in Education will foster disadvantaged children and youth to enroll in remote educational programs or online platforms, accelerating their education in a different location whenever they are possible and, ultimately, minimize the educational disruptions of disadvantaged children. To sum up, ICT can support education for marginalized children by increasing the access to quality education, through which the world can achieve equity in education.

2.3.2. Potential of ICT in Education in Migrant Learning Centers in Thailand

The liberal pluralist system of MLCs is the ground mechanism to provide more appropriate education to migrant children, but, it is also the cause of some drawbacks of MLCs. Indeed, there does not exist any national- or regional- level of the official institute which manages the operation of MLCs. Even though Thailand or Myanmar government is involved in MLCs with their NFE policy or curriculum, their management and support are not equal to the ones to formal education. The lack of support and management cause insufficient and lower quality of learning environment in MLCs. Therefore, even though MLCs are playing a pivotal role to provide appropriate education to hundreds of migrant children in Thailand, still they are encountering many obstacles to provide quality education. Consequently, the migrant children in MLCs rarely get a better quality education. For example, Has Thoo Lei MLC sent more than a hundred students

went to Myanmar to take the national mathematics exam, but the result was disappointing in 2014 (Nawarat, 2014).

It is mainly due to the lack of resource to teach any of curriculum, Thai NFE curriculum or Myanmar NFPE curriculum, effectively since the situation of each MLC is different according to who owns it and which NGOs support it and how they get their resources (Lee, 2014; Nawarat, 2010, 2014). Some of the MLCs administered by some prominent institutes such as Burmese Migrant Worker's Education Committee (BMWEC) are distributed the learning resources justly, whereas, some receive resources with charity support (Nawarat, 2010). Another critical obstacle to quality education heavily relies on the teacher's qualification. Indeed, as MLCs are not Thailand or Myanmar formal education institutes, the teacher working in MLCs is not the one who has a national certificate. Within the flexible NFE system existing in MLCs, the allowance for teachers heavily relies on their previous experience, leaving more significant change to hire less well-qualified teachers (BEAM, n.d.; Rogers, 2013). It is also related to another issue that it is hard for migrant teachers to adopt the Thai curriculum (Nawarat, 2010). The lack of resources and qualified teacher directly impacts to quality of education and student's learning achievement.

At this point, ICT has the potential to enhance the quality of education in several ways (Ball & Dim, 2016; Blurton, 1999; Enock et al., 2012; Jhurree, 2005; Khan et al., 2012; Pelgrum & Law, 2003; Tinio, 2003). In this regard, ICT integration into education has several advantages in NFE settings like MLCs to increase quality in education (Dighe, 2009). Therefore, the integration of ICT into MLCs can enhance the quality of education in terms of particularly teachers, resources and learning outcome(Ball & Dim, 2016; Blurton, 1999; Enock et al., 2012; Jhurree, 2005; Khan et al., 2012; Pelgrum, 2001; Tinio, 2003).

Firstly, in terms of teachers, Kamil (2007) mentioned that in overall

teachers in NFE institutes are, relatively, lower qualified due to the less training experience compared to formal education. The teacher's capability is recognized as the vital factor to provide the quality education and improve a student's learning achievement particularly in the marginalized area in developing countries (Stronge & Hindman, 2003 cited in HUAWEI & CSR ASIA, n.d.). In this regard, ICT can enhance the quantity and quality of teacher training in NFE institutes especially in remote, rural or impoverished areas (Ball & Dim, 2016; Blurton, 1999; Enock et al., 2012; HUAWEI & CSR ASIA, n.d.; Tinio, 2003). Moreover, ICT can support teachers' in-class teaching practice as well as additional administrative works to enhance the teaching and learning quality (Enock et al., 2012; Jhurree, 2005; Tabira & Otieno, 2017). For example, teachers can provide a personalized learning plan or solution to each student effectively and efficiently by analyzing a large amount of student data electronically (Bătăgan & Boja, 2012). Further, teachers can be supported by ICT in terms of administration because it can provide more efficient administration systems or tools to administrators including teachers (Jhurree, 2005; UNESCO Institute for Statistics (UIS), 2015).

Secondly, ICT has the vast potential to provide more quality education resources to MLCs, where the lack of resources is a severe obstacle. UNESCO Bangkok (2007) says that ICT "can be effectively used for developing a variety of materials in NFE programs." As the lack of resources is one major problem in NFE, identified the potential of ICT to support more access to a diverse range of resources is meaningful in NFE settings (Dighe, 2009; Intarat et al., 2017; Robinson, 2008). For example, ICT can support teachers to improve their design works, playing a role as a useful tool to supplement teachers' instruction (Jhurree, 2005; Khan et al., 2012). Besides, it can facilitate the teachers' access to educational contents and their creative use of their material (Fu, 2013; Watts-Taffe, Gwinn, Johnson, & Horn, 2003). As well as teachers, a learner can get access to more resources with relatively cheaper money, which can provide digital

information and learning resources, which make it possible that the collaborative learning can happen in a distance-learning environment (Enock et al., 2012; Fu, 2013).

At last, ICT's potential in MLCs to enhance the teacher's quality and the availability of quality education resources ultimately impacts on improving learning achievement of learners. In this regard, ICT can lead the improvement in terms of learning outcome in NFE because more access to a variety of information will break the vital role of NFE transmitting prescribed knowledge and concurrent use of ICTs will permit the new pedagogy to make learner to be more active and interactive (Dighe, 2009; Woolley, 2000). Integration of ICT into education change diverse aspect of the learning environment. It changes how teachers and learners interact in the class and how and what to learn, which enhance the learner's communication capability, cooperative ability, problem-solving skills, and decision-making skills also, they are the key components to address the quality education (HUAWEI & CSR ASIA, n.d.; Jhurree, 2005; Whitworth and Berson, 2003). In a similar vein, previous research insists that the appropriate use of ICT devices in a class can suggest the new ways of teaching and learning to be more learner-centered with more active, creative, integrative, evaluative and collaborative learning(Ball & Dim, 2016; Blurton, 1999; Khan et al., 2012; Tinio, 2003). Also, ICT in education provides an additional opportunity to learners to achieve useful content, strategies and skills required in the current labor market and the information society (HUAWEI & CSR ASIA, n.d.; Khan et al., 2012; Pelgrum, 2001).

Ultimately, a learner can be more motivated through all these shifts (HUAWEI & CSR ASIA, n.d.; Tinio, 2003). If a learner can have motivation with the provision of high quality of learning experiences, they are more likely to stay in educational institutes (HUAWEI & CSR ASIA, n.d.). Related to this, indeed,

the migrant children are one of the most high-risk group who drop out the school (Council of the European Union, 2011; Cranston-Gingras & Anderson, 1990). According to the Council of the European Union (2011), the dropout rate of migrant children is double times higher than the native students. Thus, ICT integration into education will also touch additional education issue in MLCs.

2.3.3. Need for Understanding the ICT Integration in Migrant Learning Centers in Thailand

The above section describes that ICT is a suitable and effective solution which can tackle the chronic educational issues or drawbacks of MLCs. Nevertheless, not all ICT in education, particularly in unique education settings for the marginalized group, have produced the fruitful results. In this regard, however, there is a lack of research on ICT in MLCs, including other NFE institutes, even the trial to integrate ICT into NFE settings in developing countries has steadily increased. Regarding the lack of study, Intarat et al. (2017) indicate that the reason is less attention paid to ICT integration into NFE, although there have been many studies of mobile learning in developing countries. Dighe (2009) also indicates the same issue, saying that even in specific regions, the research non-exist or just exist in sparse.

Furthermore, Enock et al. (2012) argue that "there is no direct correlation between increased spending on ICT and improved education performance," instead, benefits will be generated with "how ICT is deployed than of what technologies are used." Therefore, merely putting ICT devices into a learning environment cannot always yield the expected positive results. The provision of ICT into education is just one facet to increase the quality of learning, even the provision without "careful deliberation," how, the marginalized group like migrant children became more marginalized (Blurton, 1999). How to integrate or deploy

technology in a learning context is a crucial factor which decides the strong impact of ICT in education (Enock et al., 2012; Jhurree, 2005). Within this context, the study of Dighe (2009) and Intarat et al. (2017), who shed light on ICT in NFE context, insists that more research answering to “how” question on the use of ICT in NFE settings should be examined. To narrow it down to MLCs in Thailand, “how the mobile device is integrated into classroom practice in MLCs” is not revealed, based on which the discussion on quality education can be addressed.

CHAPTER 3. RESEARCH METHODOLOGY

The study adopted a qualitative research methodology and conducted a case study. The case in this study is the classroom practice where the mobile device is integrated into, and a total of 5 cases were examined through the research. Since qualitative research requires an intimate and holistic approach, the data has been gathered from diverse sources – document analysis, classroom observation, and structured-interview. Mainly, interview questions about the classroom practice were made base on Activity Theory to understand the classroom practice, case, within a broader context, including community factors. After the data has been collected, all the data synthesized into and then analyzed through coding and classification stage according to Inductive Logic of Research in a Qualitative Study by Creswell (2009). The research data collected from February to April and Analyzed for two months since May. Moreover, the member-check process has conducted in May for more reliable data, and the synthesized and summarized data has been sent to two principles in each MLC and UNESCO Bangkok Project Officer.

3.1. Research Design

The literature review on previous research addresses that even though how ICT is integrated into an educational setting is a key to produce the promising results, and there have not been many studies answering to “how” question particularly in NFE setting. In this regard, MLCs in Thailand are not an exception. Some MLCs, which are the major education institutes for the marginalized migrant children in Thailand, have been provided the mobile device by UNESCO Bangkok to support the migrant children's quality education. Here, it is also essential to understand how the mobile device is integrated into actual classes in order that the

integration of the device can positively influence the education of migrant children. At this point, there has been previous research about "education of migrant children," "the meaning of MLCs," "ICT in education in developing countries particularly for the marginalized," or "ICT integration in general setting," separately. However, it has never been revealed how the mobile device is integrated into classroom practice in these MLCs, which is directly related to the positive impact of ICT in education.

Therefore, to deeply understand the ICT integration into classroom practice in MLCs, the research is designed with a qualitative approach. Creswell (2013) states that the qualitative methodology is appropriate to examine the issue holistically and intimately. Since the study aims to reveal not only how the mobile device is integrated into the classroom practice in MLCs in Thailand, but also why the device is integrated in that revealed way, therefore qualitative methodology is more proper for this study. At this point, the case study is adopted as a specific method out of various qualitative research methods.

The case study refers to a choice of a case within a system, as well as a comprehensive research strategy, an inquiry, and a methodology to examine the case (Creswell, 2013). In this study, the case is each classroom practice in MLCs in Thailand, where the mobile device is integrated. The case in the qualitative case study can be classified into two type – intrinsic case and instrumental case. The intrinsic case is a unique phenomenon, per se, and it is valuable to describe, whereas, the instrumental case is a selected case(s) in order to understand the specific issues or problem (Creswell, 2013; Harling, 2002). The study aims to understand the broader context behind the integration of the mobile device in the classroom practice in MLCs, with the selected cases. Thus, the cases are instrumental cases. At this point, the case, a classroom practice in the MLCs where the mobile device is integrated, is selected based on three standards.

i. Geographical Representation

Bangkok is the most populated city in Thailand, where most migrants are leaving (Archavanitkul, 2014). Particularly, the most migrant from Myanmar, who comprise of the biggest portion of migrant populations in Thailand, flew into Bangkok, Samut Sakhon in Bangkok Metropolitan Region, and Tak Province (see Table 4). At this point, Mae Sot is the border area in Tak Province. Notably, Mae Sot is historically deeply related to mainly Myanmar migrants (Archavanitkul, 2014; Lee, 2008a). Therefore, targeted MLCs were selected in Bangkok and Mae Sot.

Table 4. Top Ten Countries where the Most Myanmar Migrants Stay in 2013 (Archavanitkul, 2014)

Province	Number of Migrants from Myanmar
Bangkok	**386,322**
Samut Sakhon	313,398
Tak	**235,820**
Chiang Mai	153,494
Surat Thani	127,391
Ranong	116,883
Phuket	116,551
Samut Prakarn	96,868
Nakhon Pathom	78,604
Phang-nga	75,361

ii. Accessibility

Out of several MLCs from Bangkok and Mae Sot, real accessibility to form a rapport and get the background knowledge is also another essential standard. In the case of SKHS (Sauch Kha Hong Sar) center, during the pilot study in July 2018, the researcher visited the place and built the network. Also, the researcher did the internship at UNESCO

Bangkok for three months in early 2019, visited FRY (Foundation for Rural Youth) center for a follow-up meeting.

iii. Active use of the mobile device

The last standard is to decide each classroom practice in selected MLCs. Even though all the two centers are now actively using the tablet in MLCs, some class does not use tablets at all such as NFME program classes in SKHS center or Thai adult class in FRY center. Therefore, with the casual interview with the principal of each center, the researcher got recommendation about the classes where ICT device is integrated actively.

3.2. Overview of the Case

3.2.1. Description of Migrant Learning Centers[5]

FRY (Foundation for Rural youth) center

FRY center is in Bang Bon area in Bangkok district (see Figure 6). According to Archavanitkul (2014), Bangkok is the most populated provinces of migrants in Thailand from not only Myanmar but also Cambodia and Lao PDR. A large number of migrant children in Bangkok are undocumented, and they are deprived of health and education services in Bangkok (Save the Children & World Education, 2014). It started in 1985 for rural to urban migrant children. At first,

[5] The information is not only collected from published source but also the interview with research participants.

they targeted the internal migrants in Thailand, but, now, most of the students in the learning center are Burmese children. Of course, there exist ethnic diversities, including people from Thailand, Laos, Cambodia, and Myanmar. Especially, as the learning center is located in Bang Bong area in Bangkok and there are many factories near the learning center where many of Burmese migrants work. Therefore, for them and their children, the learning center is providing the safe place in order to reduce the risk of children and child labor, as well as, increase the opportunities to access to education.

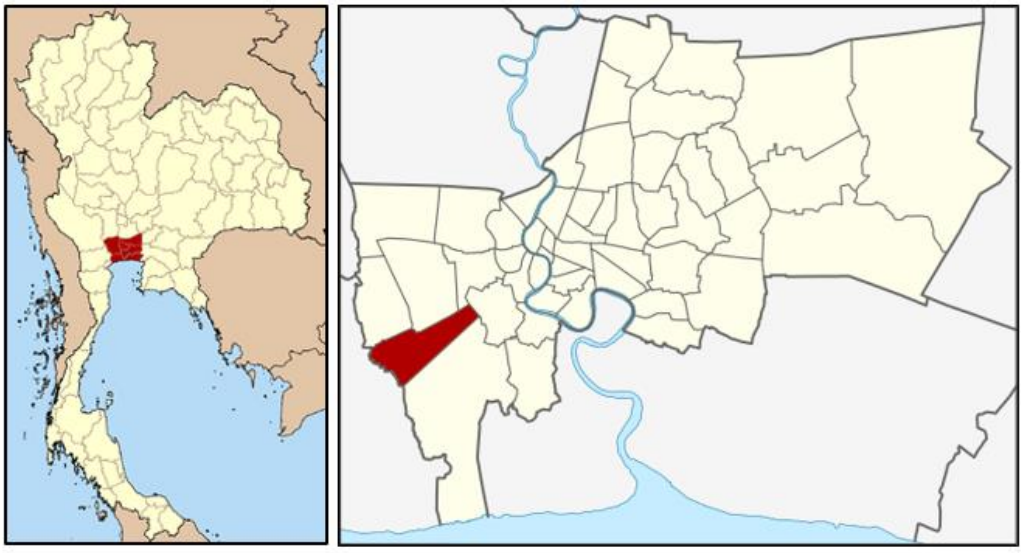

Figure 6. Map of Bang Bon in Bangkok District, Thailand

<Source: Wikipedia>

Currently, the students between 3~15 years-old are attending the learning center during a weekday, and there are also the weekend courses for working youth and adults. Majority of students are coming from Bang Bon in Bangkok or Samuk Sakhon area. They come to the learning center usually on foot or by using a school

shuttle. There are now a total of five teachers, and 80 students except the youth and adults who only come to the learning center on Sunday. There are three grades from grade 1 via grade 2 to the primary. The learning center is providing both of Thai NFE curriculum and Myanmar NFPE curriculum. Based on the test, some of the students who are officially registered and not too old have transferred to Thai private school near Bang Bon area. On April 2019 total 17 students moved to Thai school.

Table 5. Classes of FRY center

Grade	Age	# of Students	# of Teachers	Curriculum
1st grade	3~4	20	1 teacher	N/A
2nd grade	5~6	15	1 teacher	Thai Language
Primary	7~15	45	3 teachers	NFPE/NPE
Adult	15~	No information	1 teacher	Thai Language

SKHS(Sauch Kha Hong Sar) center

SHHS center locates in Mae Sot in Tak province (see Figure 7), where more Myanmar people in Mae Sot than Thais stay (Lee, 2014). Most of them flee due to economic reasons, but about 90% of migrants in Tak province earn less than minimum wage, 300 Baht (see Figure 4). Due to their unstable or illegal condition, they cannot get the chance to be educated. Therefore, as if various forms action was taking under FLS globally to broaden the educational opportunity to excluded children to fulfill their right to education, Myanmar migrant, themselves, established the school with support from NGOs. In 2010, there were 61 migrant learning centers in Mae Sot and adjacent areas which take responsibility for Out-of-School migrant children (Lee, 2014).

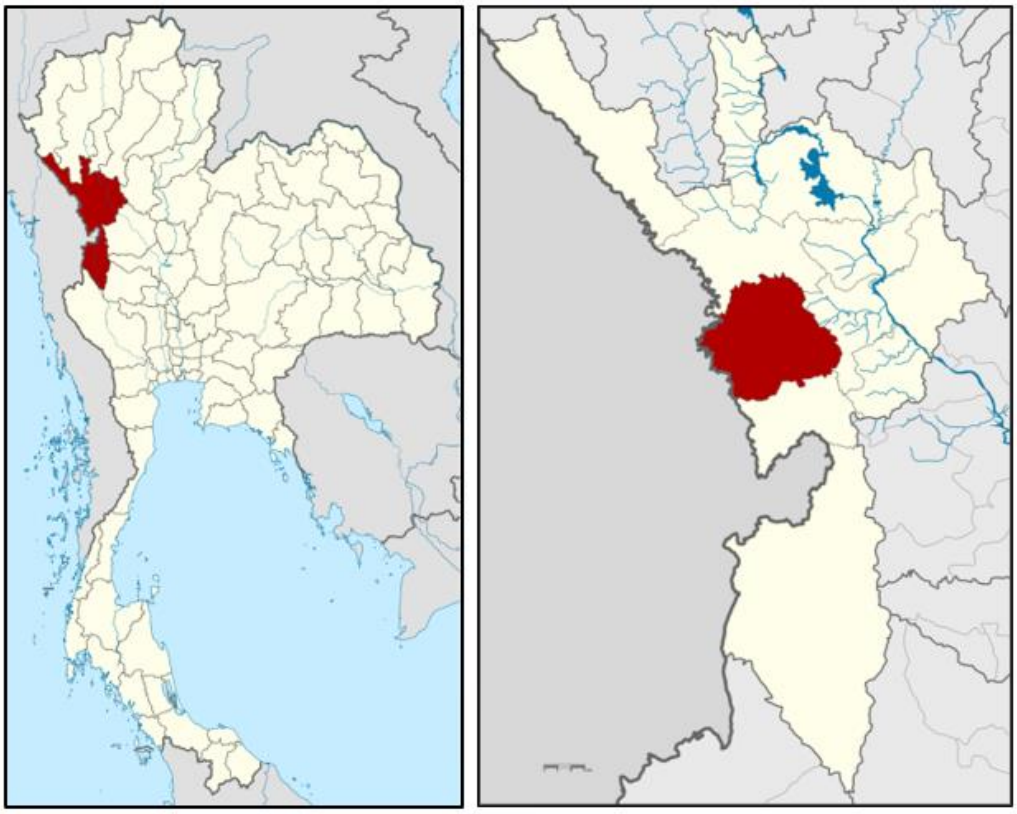

Figure 7. Map of Bang Bon in Bangkok District, Thailand
<Source: Wikipedia>

Sauch Kha Hon Sar school is one MLCs in the Mae Sot. It was founded in 2005 for the Mon ethnic minority, originally from southeast Myanmar to Thailand. At first, there was no donor, and Mon people voluntarily donate money to support their children's education with the Mon National League for Consolidation and Aiding (MNLCA). Later on, Burmese Migrant Worker's Education Committee (BMWEC) started to support the learning center in 2008. Also, as migrant education sectors have been delivered to Hel Without Frontier (HWF), SKHS learning center was managed by HWF since 2015. However, currently, the lack of fund to the learning center resulted in a lack of budget. Therefore, parents should pay small amount money (around 1000~1500 Baht

yearly) as tuition fees, but, most of the parents of the SKHS students work in factories and survive on a small amount of income and cannot afford the money. Thus, the learning center is doing small business with teachers and, sometimes, students such as organic farm and chicken husbandry.

Even though the SKHS learning center was established by and for Mon ethnic minority, but now there are Mon, Karen, Kachin and Muslim migrant children are learning in the learning center, while the teachers are all Mon. Uniquely, many of students are living with step-mother or father, and mostly the teachers should visit the family to persuade the parents to let their children go to the learning center. Also, there is a regular learning center meeting. Currently, there are 102 students registered in the learning center, including the kindergarten level of students and particular course students who are not taking regular NFPE or NFME class

Table 6. Regular Full-time Classes of SKHS center

Level	# of Students	# of Teachers
NFPE Lv1	10	1 teacher
NEPE Lv2	11	1 teacher
NFME	20	3 teachers

3.2.2. Learning Environment of Migrant Learning Centers

Main Participants: Teachers and Learners

All the teachers in the two MLCs are not subject-specialized teachers, but classroom teachers. Thus, they teach all the subject according to Thai NFE or Myanmar NFPE curriculum based on the class level. At this point, if the teachers are Thai, they teach Thai NFE or Thai language, whereas, Myanmar teachers teach Myanmar NFPE curriculum. In the FRY centers, there are a total of five teachers, and three of them are Thai, and the rest of them are Myanmar citizens. According

to the nationality, not the only curriculum that the teacher, but also their education experience is also different. The FRY principal explained that the Thai teachers have the undergraduate in any major, but in the case of Myanmar teacher, they all graduated high-school and completed a college-degree compatible program.

On the other hand, in the SKHS center, all of the teachers are Myanmar citizens and ethnically Mon people. There is a total of seven teachers and two teachers teaching NEPE and three teachers teaching NFME, and the other two teachers indicate the head teacher and husband of the head teacher, who teaches computer subject for NFME students. Some of them have a bachelor degree and the other who do not take some additional teacher training such as Cambridge NFE training. They regularly get training by a private university in Bangkok, Thailand called Mahidol University and Myanmar NFE institutes. In the case of the Myanmar teachers in both of FRY and SKHS learning center who teach Myanmar NFE curriculum annually go to Myanmar side to get the training session.

In terms of learners, almost all of the learners are migrant children from Myanmar, but their ethnicity is not the same. In the case of FRY center, most of them are Myanmar migrants, and there are few students from Laos, Cambodia, and Thailand. On the other hands, in the SKHS center, most of them are Mon and Burma, but there are also Karen, Kachin, and Muslim ethnic group of learners. Even though their ethnicity is more diverse than FRY center, they are all can speak in Myanmar language. Another trait of the learners in MLCs is their frequent absent. The reasons are diverse. First of all, since they are migrant children, they sometimes left the place suddenly. However, it does not frequently happen in SKHS center in Mae Sot due to the regional characteristic of Mae Sot as the borderland where more Myanmar people leave than Thai counterpart and migration and migrants establish the societal system (Lee, 2008b, 2008a). Instead, sometimes students cannot come to school because they should take care of their

siblings or work by themselves[6]. At last, the final trait of the learner is their unstable, undocumented, condition (see Figure 5).

Micro Environment: Classroom and MLC

FRY is the three-floor building located near a small ally in factory region. There is a total of four classrooms with two teacher's office and a meeting room. All the classrooms commonly have a television or a projector, blackboards, books and Thai NFE or Myanmar NFPE textbooks. Regarding the classroom management, each class has implicitly agreed on rules such as "do not talk too much during the class," or "listen to other students" but there does not exist officially declared MLC rule. On the other hand, SKHS school has been built on the vast land. There are three buildings. One building is with three classrooms where regular course students learn NFPE and NFME curriculums. Each class has a whiteboard but does not have any additional equipment except it. The teachers used NFPE and NFME textbooks, which are provided by Myanmar Department of Alternative Education (DAE). Also, between NFPE Lv1 and Lv2 classes, there is a place tagged as a library which is locked and no books inside. Regarding the classroom rule, teachers explained that the student should not fight each other but help, not eat a snack in the classroom and talk loudly during the class. However, as MLC, per se, there exist the firmly developed school regulation about teacher recruitment, accounting, classroom operation, and so on (see Figure 8). Both MLCs are following the Thai government rule to sustain as an educational institute

[6] SKHS principal mentioned working children and the field manager also explained that there are more working children in Mae Sot compared to Bangkok.

in Thailand. Therefore, there is a picture of prior King (*King Rama IX)* and current King (*King Rama X)* in Thailand (see Appendix 5-2).

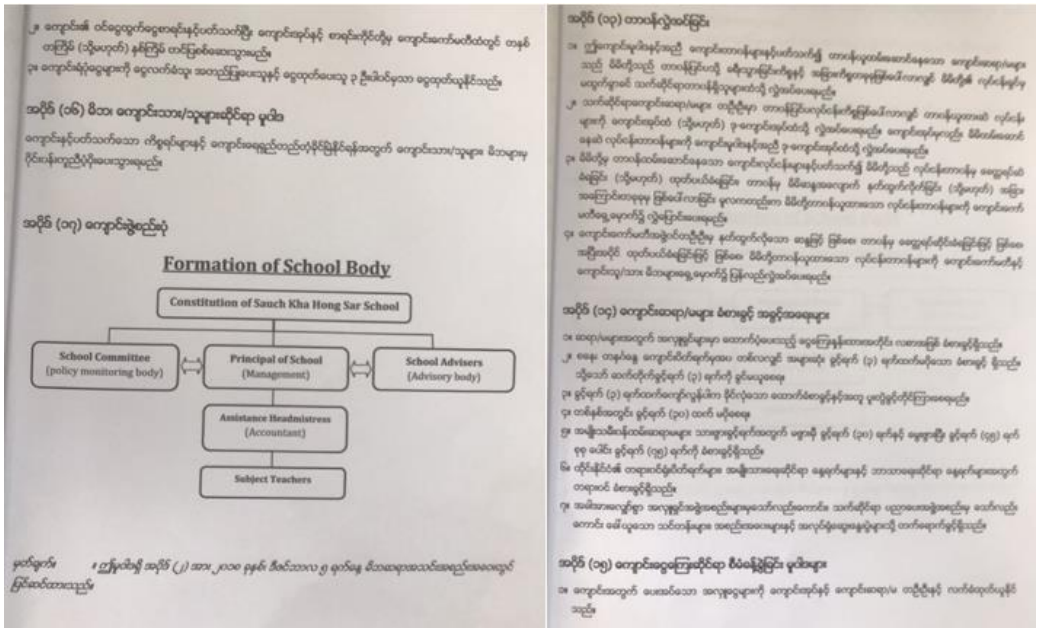

Figure 8. Sample of SKHS Center Regulation

Macro Environment: Parents and Other Institutes

The parents are usually low-wage migrant workers from Myanmar. The Bang Bon are in Bangkok is the factory area, and the parents of the FRY center are working at the factory in Bangkok or Samuk Sakhon. Also, IOM & Asian Research Center for Migration (2013) data shows that about 90% of migrants in Tak province earn less than 300 Baht per day (see Figure 4). SKHS center requires 1000~1500 Baht (30$~45$) per year. However, some migrant parents say they cannot afford it, and the teachers sometimes persuade the parents with the condition that school will cover their children's annual fee. The similar phenomenon is also found in FRY center, that FRY principal says that if parents

are lack of money, the teacher pays for children on behalf of the parents, explaining the intimate relationship between teachers and students.

Historically, many MLCs in Mae Sot have been established and developed with the support from NGOs or IOs (Lee, 2014). Currently, HWF supports SKHS center as mother organization, providing fund, teaching materials, and uniforms. Also, through the interview with the head teacher, it can be assumed that the SKHS center has a deep relationship with Myanmar MOE. Indeed, all the textbooks are from Myanmar DAE, and also Myanmar Literacy Resource Center (MLRC) provides some teaching materials and uniforms. Moreover, 3-years non-formal middle school equivalency program has been finalized in Myanmar in 2016 (Myanmar MOE. NESP), and SKHS center is running 2-years NFME curriculum on a trial basis. However, the FRY center was established as the foundation from the first in 1985. Thus, there does not exist mother organization which manages FRY center. Currently, there is some budget donated by individual donors, but there does not exist supporting NGO or foundations.

3.2.3. UNESCO Bangkok's Projects

Under the circumstance of MLCs described above, UNESCO Bangkok Office launched the called "Mobile Literacy for Out-of-school Children in Thailand." The project objective is to support disadvantaged children obtain the basic literacy skills at community learning centers through mobile learning and ICT devices. Therefore, tablets per 4 children were distributed to MLC with TV satellite and pocket Wi-Fi by True Corporation with an unlimited data package. Also, LearnBig application was made by UNESCO Bangkok and preloaded in each tablet. With the main application, MC office and learning game applications

were downloaded[7]. Also, in late 2018, UNESCO Bangkok launched a similar concept of the pilot study called Learning Coin, was distributed the tablet per child to enhance their literacy skill by increasing the reading time[8].

Along with the provision of the device, UNESCO Bangkok also provided teacher training. The projects primarily aim to support the integration of ICT device into the classroom by the teachers. Also, the Mobile Literacy for Out-of-School Children in Thailand project directly addresses that provision of teacher training and connection between them as the objective[9]. Therefore, the training is only given to teachers in MLCs, not students. The sequence of teacher training has two phases. At the first phase, the teachers learn about the mobile device, the tablet itself. At the second phase, the teachers train to integrate the mobile device into the real instruction with the lesson plan. Thus, the teachers are required to bring their lesson plan and write and share how to apply or integrate the mobile device in the lesson plan.

Table 7. UNESCO Bangkok's Teacher Training Schedule

Target	Non-formal Primary Level Teachers in MLCs
Period	1~2 days
Goal	To help the teachers to be familiar with how to use the device.
Objective	1. The teachers can achieve ICT skills. 2. The teachers can learn what kind of learning contents are accessible and available. 3. The teachers can learn how to apply tablets in their real classroom practice.
Sequence	1. Learn about the ICT skills (Turn on/Turn off/ Connect to Television, etc.)

[7] Retrieved from https://aprigf2017.files.wordpress.com/2017/08/20170727_ws74_4_piyawan.pdf

[8] The researcher collects the data during the internship in UNESCO Bangkok NFE and LLL team.

[9] Retrieved from https://aprigf2017.files.wordpress.com/2017/08/20170727_ws74_4_piyawan.pdf

	2. Learn about the tablets (LearnBig application, other applications) 3. Apply the tablet to the instruction. *Here, the teachers bring their lesson plan and write down how to integrate the tablets into the classroom practice and share it.

3.3. Research Participants

The case of this study is the classroom practice where the mobile device is integrated. Therefore, to intimately and holistically understand the case, classroom practice with the mobile device, it is essential to understand various stakeholders' voice and experience which influence the integration of ICT device into the case field.

3.3.1. Main Research Participants

The teachers and learners are the most influential individuals. However, the main research participants are only teachers who decide the overall process of classroom practice and classroom activities with or without the mobile device. In this regard, previous studies point out a teacher as the pivotal factor in integrating ICT devices into education (Admiraal et al., 2017; Darling-aduana & Heinrich, 2018; Donnelly, Mcgarr, & Reilly, 2011; Gil-flores & Rodríguez-santero, 2017; Hepp, Hinostroza, Laval, & Rehbein, 2004; Lim, 2012; Lim & Chai, 2013). Notably, the role of a teacher is deeply related to the overall design of the classroom practice and how ICT device is integrated into the instruction (Darling-aduana & Heinrich, 2018; Lim & Chai, 2013). Therefore, a teacher plays a role to generate the best practice of ICT integrated classroom practice. Furthermore, inversely, according to Donnelly et al. (2011), many of the potential barrier behind the integration of any ICT into education “revolves around” a teacher and hence

the teacher can be the starting point to understand the change in an educational setting. Therefore, regarding that the study aims at examining how ICT is integrated into classroom practice in MLCs, selecting the teachers as the main research participants are appropriate.

Furthermore, there are several reasons why the learners are not the main participant who has a direct impact on ICT integration in education in MLCs. The first is the learner's age. The main target of the projects is a relatively younger age of learners who are learning basic literacy or Non-Formal Primary curriculum. Therefore, inevitably, the age of learners in the class with the mobile device is young. Thus, the instruction flow and classroom practice are designed and developed by a class-teacher. Secondly, as they are young, the researcher cannot avoid encountering the ethical issues to interview with all the learners. Besides, the study is aiming at revealing diverse and dynamic behind factors which affect to ICT integration into classroom practice, the answers gathered from young-age learners will be relatively lower reliability and applicability. lastly, the learner's language and literacy ability operated as the major obstacles to conduct the interview or survey. Many of young learners have only achieved a novice level of literacy in all languages. Also, some of them are from an ethnic minority group, and they are not even fluent in listening and speaking.

All thing considered, the teachers in each MLC participate in the research as the primary research participants. The necessary information of each teacher is following:

Table 8. List of Main Research Participants

	Pseudonym	Gender	MLC	Country of Origin	Grade Level	Teaching Experience
1	B1	F	FRY	Myanmar	Myanmar NFPE	7
2	B2	M	FRY	Thailand	Thai Literacy	2+7[10]
3	B3	M	FRY	Thailand	Thai NFE	2
4	M1	F	SKHS	Myanmar	Myanmar NFPE Lv1	4
5	M2	F	SKHS	Myanmar	Myanmar NFPE Lv2	3

3.3.2. Supplementary Participants

The classroom practice is at first directly influenced by the learners as well as teachers. However, the learner group was excluded from the main participants but only observed during the classroom observation process as the supplementary participants. Therefore, the learners were considered as a whole group rather than individuals, and the researcher observed how the learner group use the device and some specific group of learners who show distinctive action during the classroom practice. The learner groups are the following:

Table 9. List of Learner Participant Groups during Observation

	Teacher (Pseudonym)	Class (Level)	Age	Number of Learners	MLC
1	B1	Myanmar NFPE	9~14	16	FRY
2	B2	Thai	5~6	10	FRY
3	B3	Thai NFE	10~15	12	FRY

[10] He has worked as the regular class teacher for two years, but had worked as the Sunday class teacher for 7 years before.

4	M1	NFPE lv1	9~10	9	SKHS
5	M2	NFPE lv2	10~12	9	SKHS

Moreover, the interview questions to understand the classroom practice in terms of holistic view were made based on Activity Theory. According to Activity Theory, human activity, classroom practice in this case study, is inherently inseparable from people, their intentions, tools, culture, and all the encompassing social structures (Devane & Squire, 2012). Therefore, not only the people in a specific educational scene but also community and organizations outside the education scene also have an impact on the activity. In this regard, to understand the classroom practice in MLCs, the outer organization's perspective, structure, or supports toward the classroom practice should be examined at the same time. Therefore, to understand the components in terms of MLC, hosting organization, community, and parents, the principals and the field manage also participated as the interview participants. Moreover, particularly understand the tool and teacher training(rule), UNESCO Bangkok Project Officer was also interviewed through this study.

Table 10. List of Organization Participant

	Pseudonym	**Gender**	**Organization**	**Country of Origin**	**Role**
1	FRY principal	F	FRY MLC	Thailand	Administrator
2	SKHS principal	F	SKHS MLC	Myanmar	Head Teacher
3	Field Manager	M	UNESCO Bangkok Office (External Staff)	Thailand	Managing the project and MLCs in Mae Sot
4	Project Officer	F	UNESCO Bangkok Office	Thailand	Project Officer in NFE and LLL team

3.4. Data Collection

The data were collected with three methods to get a more comprehensive and holistic understanding of the cases. At first, the document related to the project and MLCs were analyzed to collect the data to support the findings from classroom observation and interview. Next, classroom observation was conducted mainly to reveal how ICT is integrated into classroom practice. Also, Interview was the kernel method to explain the context of MLCs' classroom practice, the intention behind the integration of the mobile device and the determinant factors related to diverse aspects of ICT integration into the classroom practice.

3.4.1. Document Analysis

The data from document analysis is used to supplement the finding revealed from classroom observation and interview for a deeper and more accurate understanding of the cases. Therefore, the documents about MLCs and UNESCO Bangkok's projects, as well as some previous studies on them, were analyzed. Also, LearnBig application, the main application in the tablet designed by UNESCO Bangkok, was analyzed.

3.4.2. Classroom Observation

During the classroom observation, the researcher played a role as a non-participatory observer. Thus, the researcher neither participated in the activity nor involved with teachers and learners, but just observed and transcribed the field note. Total five classroom practices were observed, and each MLC's principal accompanied by the researcher. During the classroom observation, the principal target was the teacher who uses the mobile device during the classroom practice.

Moreover, leaners were also observed. Also, the particular interest was given to the tool, the mobile device, in order to examine how the device is integrated into the classroom practice. Therefore, through classroom observation process, the data on the general role of the mobile device in the class, the different aspects how the mobile device is integrated into each classroom practice, and other elements comprising the learning environment including learners has been gathered. None of audio or video recording was made, but researcher sketched the whole process of the classroom practice on the researcher note with taking some photos.

Table 11. List of Classroom Observations

Code	Instructor	Subject	Medium of Instruction	Date	Duration	Methods Remarks
O1	B1	Burmese	Myanmar	7th Mach	09:0~10:00	Field Note; Photos; Q&A with the Principal
O2	B2	Thai	Thai	7th Mach	10:00~11:00	
O3	B3	Thai	Thai	7th Mach	11:00~12:00	
O4	M1	English	Myanmar	21st March	9:30~10:15	
O5	M2	Burmese	Myanmar	21st March	10:15~11:00	

3.4.3. Structured-Interview

The study conducted 2 group interviews and five individual interviews with 9 participants, including teacher, principals, field manager, and project officer in the UNESCO Bangkok Office. The interviews with the main participants, teachers, were conducted as face-to-face focused group interview, whereas, remaining interviews were done individually. There was a practical reason to conduct the focused group interview with teachers, but a focus group with few people for a longer time up to two hours is helpful for more in-depth and extended

probing (Adams, 2015). Each interview took about 30 minutes to 90 minutes. English was the main medium of the interview. At this point, the English proficiency level of all the research participants during the interview was different. Therefore, sometimes an interpreter accompanied to the interview process. For example, in the case of UNESCO Bangkok project officer, as she can speak in English very fluently, the interview conducted without the interpreter. Also, SKHS principal and field manager can communicate in English without other's help even though sometimes they made some minor grammatical mistakes. In the case of FRY principal, she can communicate in English but not fluent. Therefore, two-times of the interview has been conducted to interview her and, the interview questions were adjusted by the researcher with the easy vocabularies during the first interview and the interpreter accompanied during the second interview. In the case of teachers, no one can communicate in English except M1 in SKHS center. Therefore, the interpreter, who is the Mahidol university student, accompanied during the interview in FRY center, whereas, SKHS principal played a role as both interviewee and interpreter during the interview with the teacher in SKHS center.

Table 12. List of Interviews

Code	Participant	Date	Duration	Method Remarks
I1	FRY Principal	27th Feb	15:00~15:30	Text Note
I2	Field Manager	2nd March	15:00~16:00	Text Note
I3	FRY Principal (with an Interpreter)	7th March	15:00~15:30	Text Note Recording
I4	B1, B2, B3 (with an Interpreter)	7th March	15:30~17:00	Text Note Recording
I5	SKHS Principal	20th March	11:00~12:00	Text Note
I6	SKHS Principal, M1, M2	21st March	11:30~13:00	Text Note Recording
I7	Project Officer	5th April	16:00~16:30	Text Note

The interview is a particularly structured interview where the questions had been fixed before conducting the interview. The interview list was comprised of four sections. The first section was mainly about the MLCs, itself and hence, the question section was only included in the interview list for the principals and field manager. At this point, the interview with the field manager is an only unstructured interview without any interview lists because the purpose of the interview is not to gather some data about classroom practice but to get some broader concept about the MLCs and Mae Sot district to select the case field. The second section was about classroom observation to supplement the findings from the observation process. Therefore, the section was included in the interview list for the teachers. Thirdly, the interview list for the UNESCO Bangkok Office's project manager included the questions about the project to examine the answer to the first research question.

At last, the main interview section is to examine the classroom practice, case, and hence, it was asked to every interview participant. For a holistic and more in-depth understanding of the classroom practice, diverse elements which can affect each classroom practice should be examined with this interview list. Therefore, to develop the structured interview list, the researcher utilized the Activity Theory, which is also known as Cultural Historical Activity Theory (CHAT). Activity Theory has been introduced by the famous Russian scholar Vygotsky and developed by the Leont'ev and Engeström. It is a theoretical framework for the analysis and understanding of human interaction through their use of tools and artifacts (Hashim & Jones, 2007). Therefore, it can be used as an interpretive tool to understand educational activity like classroom practice. Especially, Engeström expands the second generation Activity Theory's unit of analysis from an individual activity to collective activity system to understand how diverse groups mediate the activity toward an object (Devane & Squire, 2012) by suggesting the structure of human activity (see Figure 9). Therefore, Activity

Theory has its potential to support qualitative and interpretive research with the provision of holistic and contextual discovery (Hashim & Jones, 2007). Mainly, in learning technologies, Activity Theory has been used "as a guiding theoretical framework to understand how technologies are adopted, adapted and configured through the use in a social situation (Devane & Squire, 2012)". Therefore, in the way that the last interview list aims to reveal how the mobile device is integrated into classroom practice in MLCs through the cases, as well as, the complex context surrounding the ways, Activity Theory could be used as the guiding principle to design the interview questions.

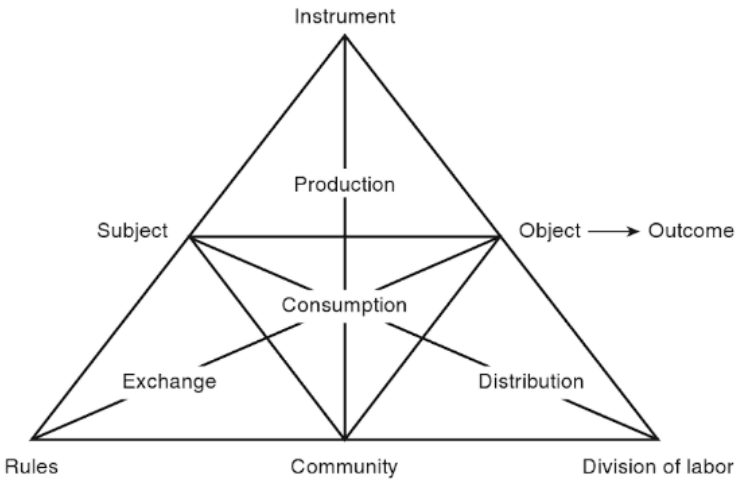

Figure 9. The structure of human activity (Engeström, 2015)

According to Activity Theory, each interview questions were presented with seven sub-categories: subject, object, tool, rule, community, division of labor, and outcome. Regarding this, when it comes to the teacher, the principal subject who operate the instruction, Karasavvidis (2009) suggests that the object is learning of students; tools(mediated artifacts) include textbooks, audiovisual aids, and materials, instructional strategies, etc.; the rules include the educational laws, curriculum, school rules, classroom and instructional rules, etc.; the community

includes students, other teachers, administration, parents; and division of labor is distributed among teachers, school subjects and school units. This idea was adapted to be more appropriate to each case of the study, and the sub-components of each element are the following:

- Subject: the teacher who conducted the classroom practice of each case
- Tool: the mobile device, textbook, other teaching materials
- Object: the teaching and learning objective of the classroom practice (what the subject aims to achieve through the classroom practice)
- Community: learners, other teachers, MLC, other supporting organization
- Rule: MLC rule, class rule, teacher training
- Division of Labor: the existence of co-teacher, extra work
- Outcome: the outcome of the classroom practice where the mobile device is integrated.

The interview questions were made based on these components. Mainly, since this study focused on the mobile device, itself, the questions were made how each component are inter-related to the mobile device. At this point, compared to the interview list of the teacher and principals included all the components, the interview list of the project officer excluded the subject and division of labor. It is because the interview with the project officer was conducted at last and from the previous interview it was founded that UNESCO Bangkok also does not have any precise information about each subject and the project did not influence the division of labor.

3.5. Data Analysis

The case study requires the researcher to collect the data from various sources for a holistic and intimate understanding of the case. In this study, all the data has been collected from multiple sources. Thus, the purpose of the data analysis was to find meaningful themes, categories, or dimensions from these multiple sources of data. At this point, this study is the case study with five different cases, which are each observed classroom practice in two MLCs. The researcher intended to address some generalized aspects of how the mobile device is integrated into classroom practice in MLCs and factors related to the way with the case. Thus, the process of inductive data analysis was required. Indeed, qualitative researcher establishes "a comprehensive set of themes" through this inductive process which is building "the patterns, categories, and themes from the bottom up, by organizing the data into increasingly more abstract units of information" (Creswell, 2009). In this regard, Creswell (2009) suggests the Inductive Logic of Research in a Qualitative Study.

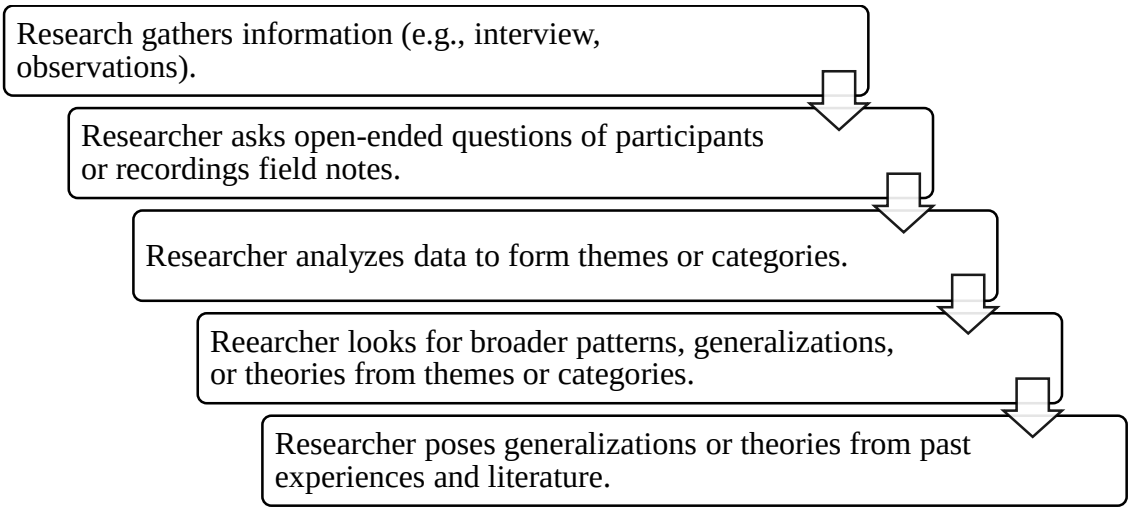

Figure 10. Inductive Logic of Research in a Qualitative Study (Creswell, 2009)

At the data collection stage, the first and second stage has been finished, and at the data analysis stage, the researcher conducted the third and fourth stage with coding and classification process to present the findings in the study. Also, the researcher posed the generalizations from past literature to expand the discovered issues in the discussion part of this study.

3.5.1. Coding

Coding process requires for a researcher to synthesize complete data into small categories, find the evidence for each code, and name it (Creswell, 2013). Therefore, the researcher collected all the data from document analysis, classroom observation, and interview at first. Mainly, the interview section about the classroom practice was collected through various participants, and much time has been spent to collaborate to synthesize whole answers according to each element in Activity Theory. Therefore, the data were coded according to the sub-components of the seven elements, described at the data collection part. However, not all the coded data has been reflected at the classification stage. Indeed, in the qualitative study, not all the collected data is used, but some of the data can be discarded, which is called winnowing (Wolcott, 1994b cited in Creswell, 2013). Through winnowing process, only meaningful codes remain, which are following: Design of the mobile device; Distribution of the mobile device; Learner's age; Learner's ability; MLC's rule on the device; NFE system in MLCs; Teacher's attitude; Teacher's perspective; Teacher training; and Textbook.

3.5.2. Classification

Classification pertains the process to identify 5~6 general categories, themes, or dimensions at the analytic stage. A topic in the qualitative study is the

broader unit of information comprising codes. The process includes lessening the codes remaining after the winnowing process to some broader classification which embrace those codes and preparing the final narrative (Creswell, 2013). Therefore, ten codes after winnowing stage were sorted into three broader categories. The first category is the physical environment where some factors related to the physical learning environment are included. Secondly, the factor related to a teacher and learner has been classified as the participant trait. At last, the factors existing outside each class were considered as the community factor and, here, the concept of community was borrowed from the community concept in Activity Theory, which includes broader structure influence the classroom practice.

i. Physical Environment: Design of the mobile device, Distribution of the mobile device, Existence of textbook;

ii. Participant Trait: Learner's age, Learner's ability, Teacher's attitude, Teacher's perspective;

iii. Community Factor: MLC's rule on the device, NFE system in MLCs, Teacher training.

IV. FINDINGS

4.1. Integration of the Mobile Device into Classroom Practice in Migrant Learning Centers in Thailand

As it is explained above, the project started to supports teachers and learning to use the mobile device during the classroom practice aiming at the learners' literacy enhancement. Thus, the mobile devices equipped with reading resources in Thai and Myanmar and NFE textbooks were distributed to each MLC. Also, the teachers were trained on how to use the device in their classes for two days. Therefore, the mobile device has been integrated into the classroom practices since 2017 in SKHS center and 2018 in FRY center. Regarding the integration of the mobile device into this educational setting, the previous studies addressed that merely introducing an ICT device doesn't assure the positive impact. Therefore, what should be examined is how the mobile device is actually integrated into the classroom practice in MLCs. Therefore, in this section, the current situation of how the mobile device is integrated into the classroom practice in MLCs will be revealed to answer the first research question.

4.1.1. Description of the Classroom Practice with the Mobile Device

During the research, five cases were observed and seven times of supplementary interviews were conducted in order to understand the way of the mobile device integration. In this section, the actual scene of each classroom practice is described to describe the learning environment where the mobile device is integrated.

(1) B1: Myanmar NFPE Class

The first case was B1's class in FRY center. B1 has worked at FRY center for seven years and taught the Myanmar NFPE curriculum. B1 had internal motivation as a teacher because she said that she wanted to become a teacher since she was seventeen. The observed classroom practice was Myanmar language class where there were 16 students. The students were 9 to 14 years old and all from Myanmar. However, there existed some diversities in terms of ethnic groups. For her, the teaching objective was helping students to get a better job when they get back to Myanmar, and the outcome was also that students can find a better job in Myanmar. However, her teaching method was not directly related to this teaching goal or expected outcome because B1 only used the textbook to prepare the class, as well as, conduct the class.

During the observed classroom practice, B1 asked students to open the same page of the textbook with her by using the tablets. Then, the teacher explained the contents verbally in the textbook with a loud voice. The B1's verbal explanation progressed the overall classroom practice, and sometimes, B1 used the whiteboard to draw a table. After her lecture, she asked students to do activity in the textbook by themselves. During the whole classroom practice, B1 never used the tablets but only textbook and has spent most of the time for the explanation. In B1's case, the textbook contents in the paper textbook or digital textbook were the only source used in B1's class.

(2) B2: Thai Class

The second case was the B2's classroom practice. B2 was a Thailand male teacher teaching Thai literacy for younger learners. He has only taught this class

for two years, but he had worked as a Sunday-class teacher for the past seven years. B2 said that he became a teacher because he felt sorry to migrants and wanted to help them to read in Thai. B2 added that he could earn more money if he works in the factory, but he is satisfied with life as a teacher. There were ten students between five to six years old in the class and due to their age, there wasn't' any specific curriculum. Instead, B2 was teaching Thai literacy with Thai reading books and Thai basic education materials. There exist also ethnic diversities in B2's case and during the classroom observation, FRY principal explained that ethnic minority group student is a more vulnerable group with an example of one girl in the class.

> *It was really difficult to teach her, but as she is young she has learned very fast and now be able to communicate in Thai … there exist a big difficulty to communicate with her parents.* **FRY Principle_O2**

B2's teaching objective was for students to be able to read and write in Thai. Also, the outcome of this class was that the students to go to Thai school. Since his purpose was to teach students basic Thai literacy, he focused on providing lots of input. In this regard, he explained that the mobile device is important because it includes lots of reading books. The main activity was to read the books and he prepared two reading books for one-day class. During the classroom observation, the main activity was also reading a book and answering the questions on the reading book.

Moreover, he emphasized that his students are young and migrants. Thus, he always chose short reading books with easy vocabularies. Moreover, during the observation, he did an orientation activity just for fun. When the class begins, B2 asked students to find the circle picture on the math books by using the tablets not to learn the math but to draw. The teacher asked students to draw the circle on the note, while the teacher is drawing the circle on the whiteboard. After all the

students draw the circle on the note, he drew and measured some center-lines by using a ruler to explain that every line in the circle is the same. He explained that this activity was done for fun.

(3) B3: Thai NPE Class

The last case observed in the FRY center was B3's class. B3 was the one who has the least teaching experience out of all the interviewed teachers. Similar to B2, B3 also answered that he wanted to become a teacher to help migrant children. He was teaching three-year specialized curriculum for migrant students, through which the students can learn both Thai and Myanmar language. He took charge of the Thai NFE class. There were Seventeen students during a classroom observation who were between ten to fifteen years old. The teaching objective is to help students to be able to read and write in Thai and get a better job. To teach Thai literacy, he mainly used the Thai NFE textbook and reading books. During the classroom observation, B1 and students also used the reading book and textbook to learn the Thai language.

At first, students were asked to draw some pictures on the NFE textbook intended to learn Thai vocabularies. In this regard, B2 explained that he uses the mobile device to replace the textbook in his class. He also said that he sometimes selects the reading book with easy vocabularies. During the classroom observation, B2 connected the laptop to television. At this point, the application equipped with the tablet has also PC version and the same page could be shown up on the television by using the laptop. Every student read the book together with page by page on the tablets. After reading one book, the teacher again asked students to do an individual task about Thai vocabulary. At this point, some of the students wrote the answers to the note, but the others were drawing the pictures. At this point, there wasn't any instruction to all students and students did activities

autonomously. In this regard, not only he had the least teaching experience, but also he expressed that he need more teacher training or support related to teaching activities.

> *I need some training about students and activities. ... I need someone who can support activity not the classroom practice.* **B3_I4**

(4) M1: Myanmar NFPE Lv1 Class

The first case in the SKHS center was M1's classroom practice. M1 was an NFPE Lv.1 classroom teacher. She graduated Tak community college last year and also took Cambridge NFE course. She has worked in the SKHS center for four years and answered that she wanted to become a teacher for Myanmar migrant children since she knows their situation. In her class, there used to be 12 students, but there were only ten students during the classroom observation because 2 left Mae Sot. These students are between 9 to 10 years old.

The ICT-integrated classroom practice was held in another building, not in the classroom. Thus, M1 and students moved to the building where tablets and Television are. Since M1 got trained by UNESCO Bangkok how to use the mobile device with television, M1's tablet was connected to the television all the time. To start the class, M1 distributed tablets to students and helped every student to turn on the tablet and put the password with the help of another teacher, who is the husband of SKHS principal. Then, teacher connected the tablets to the television provided by the UNESCO BKK project. At the consolidation stage, the students say goodbye to teacher and turn-off the tablet, and the teacher collected the tablets. The textbook has not been used during all the classroom practice, and students bring the textbook to go back to the classroom.

M1 said that the teaching objective is helping students to acquire real-life knowledge and literacy. Also, the subject during the classroom observation was Myanmar NFPE English and the specific lesson topics were greeting and the day. At this point, the teaching method was listen and repeat. M1 read each phrase three times with the explanation when each phrase should be used. After reading the phrases, she read again and asked the students to repeat. The listen and repeat process has been done repeatedly. After the first unit, M1 asked students to move on to the next unit and checked that everyone moved on to the next unit. M1 repeated the same process from the teacher's example via listening and repeat to student's practice(presentation). There were two issues related to the classroom practice. The teacher mispronounced the word "Wednesday" as [ˈwednesdeɪ] not [ˈwenzdeɪ]. Related to Wednesday, the students have shown more difficulties than other dates, and teacher more repeated the process. Also, when the teacher asked the student what the third date is, the students answered "Wednesday" not "Tuesday." (it started from the Sunday).

(5) M2: Myanmar NFPE Lv2 Class

The last case was M2's case in the SKHS center. M2 was teaching Myanmar NFPE lv2 students who are between 10~12 years old. She has worked in SKHS center for three years and also graduated Tak community college course in community development subject. She also answered that she wanted to become a teacher to help migrant children, but she said that even though she is satisfied her current job, but there is no guarantee about what she can do in Myanmar in the future.

There was a total of 10 students in her class because one student was absent to take care of one's siblings during the classroom observation. As same as M1's case, M2 and students moved to the place where the tablets and television

are. When the students came to the class place, they brought the textbook, and M2 asked them to leave it to the classroom. She answered that the textbook wasn't necessary because the mobile device includes the same textbook. Also, M2 seemed that she is not good at how to deal with the mobile device because she has never taken any training by UNESCO Bangkok. Thus, after the tablets were distributed to each student, mainly M1 and the principal's husband, not M2, helped students to turn on the tablet and put the password on. Also, the principal's husband connected the tablet to the television and he fixed it when the connection to the television was suddenly lost while M2 was continuing the classroom practice. B2 said that she always needed the help from another teacher, and also SKHS principal explained that the teachers help each other and center like a family.

> *The teachers are more like family, very close. Sometimes the teacher teaches students after class during the exam period, and teachers and learners come to school on Saturday to clean school together. Also, we sell the organic egg at the weekend market.* **SKHS Principal_I5**

Teaching objective was literacy learning and the subject was the Myanmar language. Thus, the major teaching method was read together The classroom started with the greeting and teachers asked students to turn on the NFPE Myanmar language textbook on the tablet and check whether they open the correct page. Then, B2 asked students to read the textbook all together, page by page. At this moment, after reading one page, the teacher asked students about the meaning of each page. Mainly, the oldest student who is 12 years-old boy explained the meaning. In total, learners in B2's class read two books during the classroom practice.

4.1.2. The Mobile Device as Digital Textbook

The classroom observation revealed that the overall process of the classroom practice and teacher and student's actual use of classroom materials, including the mobile device, were decided by the teachers. Under this context, the mobile device was used as a digital textbook during the classroom practices by the teacher. The mobile device replaced the existing paper textbooks. During the three classroom observation in FRY learning center, all the students owned their tablets, and teachers asked them to use the tablets as the textbook. Thus, the teachers steadily asked students to open the same page with the teachers. In B1's class, the teacher explained the contents in the textbook, and students followed the lecture with the textbook on the tablet. In the case of B2 and B3, students and teacher mainly read the book and did individual activities in the tablets. The teachers in the SKHS center also used the tablets as the textbook and, at first, when class starts, the student was asked to open the right unit of the NFPE textbook in the tablet. The teacher also opened the same unit and connected the tablet to TV in order that all the students can see on the big screen. During M1's English class, students learned some vocabularies about the day and greeting phrases. In the case of M2's Myanmar class, the students read the books on the tablets together.

Moreover, the interview addressed that the teachers has used the mobile device as the replacement of a paper textbook.

> *I do not use the tablets only I ask students to watch the tablet for the textbook and do the assignment or find the materials.* **B1_I4**

> *The tablet is used to read the books in the class. Therefore, two books are selected every day before the class… Students read the books on the tablets but use the note to write down the words.* **B2_I4**

> *The tablet is used as the digital textbook or e-book due to the textbook is not enough. There is a textbook on the book shelter, but the number of the*

textbook is not enough. Therefore, students use the table as the textbook replacement. **B3_I4**

I use the tablet because student like it and they are happy… The tablet is always connected to Television and use the only tablet because it is the same as the textbook. **M1_I6**

I use the tablet because students can experience new thing and they feel happy and fun… connect the tablet to a TV and don't use the textbook… students turn on the tablet at first and then introduction part about what to learn, and students find the topic on the page on tablets. **M2_I6**

4.1.3. Five Facets of the Way the Mobile Device is Integrated into the Classroom Practice

Even though the mobile device played a role as a digital textbook in all the observed classes, how it is integrated into the classroom practice as the digital textbook was discovered in different ways in each case. Regarding this, the integration of the mobile device denoted five different facets with the case study.

(1) Teacher's Active Use of the Mobile Device

In every case, the mobile device was used in some degree by the teachers or the students. However, B1's classroom practice presented distinctively different case in terms of teacher's using tablets during the instruction. B1 did not use the tablet by herself at all. She only used the textbook, whereas students used the tablets. During one-hour class, B1 did not touch the tablet at all and just asked students to follow her instruction with the tablets. In this regard, she explained that she does not use the tablet at all, but only students use the tablets. Therefore, in

B's class, the students found some contents or did some assignment by using their tablets.

On the other hand, every other teacher in FRY and SKHS center actively used the mobile device during the classroom practice as the main teaching tool. B2 and B3 used the tablet through all teaching process during the observed classroom practice. B2 explained that he uses the tablet to read the books, and B3 explained that he uses the tablet as the textbook replacement. Also, during classroom observation, M1 and M2 did not have any other teaching tool or material except the tablet. All the process of the classroom practice has proceeded with the tablet, and the teacher and students did not put aside the tablet from their hands. Both of them explained that they use the only tablet during the classroom practice with the mobile device because the textbook does not seem necessary.

(2) Mobile Device with Other Teaching Tools

The second different facet revealed in each case is how the teachers use the mobile device with other teaching tools. First of all, since B1 did not use the tablet at all by herself, paper textbook and sometimes whiteboard were used. Also, the students did not use any other teaching tools except the tablet even if they have the paper textbook they did not open it. The mobile device was not connected to a wider screen, even if there was a projector in the classroom. On the other hand, the other group of teachers, B3, M1, and M2, connected the mobile device to the television in order that students can see the learning content through the full screen. The teacher's tablet was connected to the television, and the page where the teacher is seeing was shown up on the Television. However, there was little difference in B3's case. In case of B3, he connected the computer not the tablet to television since LearnBig application has the PC version. Also, B3 used Television during only reading, whereas M1 and M2 used the television since the starting of

the class. At this point, the television just played a role as the projector to show the same content which the students see on the tablet with the broader view. The contents on the television was exactly same content which students see on their tablet, not the additional or different contents. Related to this, M1 and M2 explained that they usually connect it to the TV and M1 explains that sometimes she also uses the whiteboard to write down the pronunciation of English word in Myanmar when students cannot read the words.

> *... Sometimes, I should use the whiteboard to write the alphabet or pronunciation in Myanmar language because Lv1 students cannot read the alphabet sometimes.* **M1_I6**

In the case of B2, he did not connect the tablet to the Television, which is located in front of the classroom. However, B2 used the whiteboard actively, as well as the mobile device. Especially when some contents should be drawn or wrote down, he used the whiteboard so that every student can see. While B2's classroom practice observed, he wrote down the answers to the questions on the tablets on the whiteboard, not to type it to the answer box on the tablets. On the other hand, some of the students typed the answers to the answer box on the tablet by copying the teacher's answer on the whiteboard. However, all the students used the paper note when they draw the circle during the orientation activity. B2 answered that the mobile device is used by the teacher and students to read, but the paper note is used to write down or draw something. In case of B3, the students also used the paper note to draw some pictures on the textbook at the first phase of the classroom practice. Related to this, B3 explained that the tablet is not necessary when writing down a story.

> *Student read the books on the tablet and write down the word on the note… Tablet is not good for writing.* **B2_I4**

Sometimes tablet is not necessary for some subjects such as writing the story. **B3_I4**

(3) Contents in the Mobile Device

Even though the mobile device was commonly used as the digital textbook in all cases, the contents in the mobile device used in each case were different. Indeed, in the first place, LearnBig application was equipped to the mobile device, and also the other applications such as MS office programs and learning game applications were preloaded. Also, UNESCO Bangkok office established the wireless network via the cooperation with True Corporation in order that the teachers and learners can connect to the internet and other applications. From B1's complaints about the tablet that students are easily distracted and they see YouTube, it could be assumed that the connection to other web-page or application is possible.

In this regard, SKHS principal said that sometimes she uses the tablet to do the math game with the learner. Also, M1 and M2 answered that they use the tablet to show some picture or to find the English pronunciation. Nevertheless, in every case, only materials in LearnBig application were used in each class. At this moment, LearnBig application includes various types and a large number of content, but Thai NFE or Myanmar NFPE textbook and Thai reading books were mainly used in each case.

At first, B1, M1, and B2 only used Myanmar NFPE textbooks during the classroom practice. In case of B1, she only used the textbook, and students only used the tablet. However, there has not been any problem. During M1's classroom practice, students also did not open the textbook even though they brought it and M2's classroom practice, M2 asked students to leave the textbook to the classroom.

M1 and M2 explained this phenomenon that they only need a tablet because the content in the tablet is synchronized with the textbook. On the other hand, B2 and B3 mainly used Thai reading books in LearnBig application. B2 said that he uses the tablet to read the book, and he selects the two books before starting the class. Also, B3 explained that he uses the tablets as the teaching materials, and he selects Thai reading books with easy vocabularies. However, they also used other materials in LearnBig application. Indeed, math materials in Thai Basic Education section have been used during the orientation activity in B2's class. Also, during the B3's classroom practice not only Thai reading book but also Thai NFPE textbook was used in order that the students do individual activities.

(4) Student's Activity with Tablets

In every case, every student had one tablet. However, individual activity with the mobile device was only observed in B1, B2, and B3's case. During B1's classroom practice, there was a time for students to do the individual task by using the tablet. Also, B1 said that she asks students to do the assignment by using the tablet. In the case of B2's classroom practice, students did individual activities through all the process of classroom practice.

> *Students draw pictures on the tablet to the note; students type the answers to the questions on the tablet.* **Field Note_O2**

Similarly, at the first and the last stage, the students did their individual task by using the tablet.

> *Students draw the picture on the tablet to the note, and students do the quizzes on the tablet.* **Field Note_O3**

However, B1 and B2's case, all the students did the same task, but B3's case some of the students drew the pictures and the others do the quizzes.

On the other hand, there has not been any process where students do their own task by using the tablet in M1 and M2's case. At the preparation stage, M1 and M2 checked whether the student opens the correct page one by one, whereas, only B2 in the FRY center helped few students to open the correct page on the tablet when they ask some help. During both M1 and M2's classroom practice, teacher and students always required to see the same page.

(5) Instruction Method

The last facet is the real instruction method or way during classroom practice with the mobile device. All the classroom practice where the mobile device is integrated was teacher-led classes, but particular instruction methods were different in each case. Firstly, B1's teaching was the traditional and typical explaining lecture type. Majority of the time was assigned to the teacher's explanation with some of whole-class questions for any student to be meant to answer them. It was followed by the individual assignment.

Next, B2, B3, and M2's cases shared some similarity because the main activity was "read together". B2, B3, and M2 asked students to read the textbook page by page together during the main activity. However, there were also differences between those cases. First of all, much more time has been assigned to orientation activity and quiz activities at first and last during B2's classroom practice. At this point, B3's case was much similar to B2's case, and the lecture sequence was orientation activity – main activity – consolidation activity. Therefore, students also did their own tasks on the tablet during the first and last stage. However, the main activity, "read together" was relatively longer than the one in B2's case. On the other hands, in M3's case, the overall classroom practice was the "read together" activity. Therefore, the sequence was more like, preparation and greeting stage – main activity (read together one page + share the

meaning) – Sharing the lesson of the book. Therefore, relatively, there was more individual student's presentation.

At last, M1's case presented the typical "drilling" method. M1 read the word at first and asked students to repeat. During M1's classroom practice, similar to M2's case, all the students required to answer to the questions and present the words one by one. Therefore, all the students should answer to the question unlikely to M2's case, and the students also practiced the words in a real situation.

> *The student stands up say "good morning" each other at first, facing each other… A teacher points every student to stand up and say the phrases… points some students to present… again stand up to face each other say greeting word to the pair…one student participates much activity, and the principal says that he is one of the smart kid… (in day lesson) Same process.* **Field Note_O4**.

Also, before the classroom consolidation teacher asked students some questions such as "what is the third day?". Therefore, in both M1 and M2 asked the questions which are not in the textbook or books on the tablet.

Table 13. Five Facets of Classroom Practice Integrated with the Mobile Device

	B1	B2	B3	M1	M2
Teacher's Using Tablet	No	Yes	Yes	Yes	Yes
Other Teaching Tools	Textbook Whiteboard	Whiteboard Note	Television Note	Television	Television
Contents in Tablet	Myanmar NFPE textbook	Thai reading book Thai Basic Education Materials	Thai reading book Thai NPE textbook	Myanmar NFPE textbook	Myanmar NFPE textbook
Students' Individual Activity	At last	Continuously	At first t At last	N/A	N/A

Instruction Method	Teacher-centered Lecture	Read Together Fun Activity	Read Together Own Task	Listen and Repeat Practice	Read Together Q&A

4.2. The Context behind the Integration of the Mobile Device into the Classroom Practice in MLCs in Thailand

In the above section, five cases are described to present the way of integration of the mobile device into classroom practice in MLCs in Thailand. The mobile device was used as a digital textbook by the teacher and the learners in every case. However, five different facets of how the mobile device is integrated into the classroom practice as the digital textbook was observed. In this regard, to understand these ways of integration more precisely, the contextual elements behind the integration of the mobile device in each case was examined. The data mainly collected by the interview with research participants and the interview list was made up of elements according to Activity theory. At this point, notably, some element presented a strong relationship with the integration of the mobile device into actual classroom practice. They are teacher's perspective (subject), teacher's previous experience (subject), learner (community), learning objective (objective & outcome), teacher training (rule), MLC rule (rule), textbook (tool & community) and the mobile device (tool), itself. They were rearranged into three broader categories – Physical Environment (the mobile device and textbook); Participant's Features (teacher and learner); and Organizational Environment (teacher training and MLC rule).

4.2.1. Physical Environment

There exist relevant elements related to how the ICT device is integrated into a specific education scene, but in this case, one of the most obvious element was the mobile device, per se. Particularly, the design of the mobile device was influential in how and why the teacher uses the mobile. Moreover, how the mobile device was distributed to each center by UNESCO Bangkok also revealed as the background context on teachers' and learners' fluent usage of the mobile device during the classroom practice. Moreover, the existence of the textbook had an impact to the teacher's reliance on the mobile device since the resources in the mobile device are more valuable if there was not a specific textbook. Consequently, the physical environment, including design and distribution of the mobile device and existence of the textbook was the context behind the integration of the mobile device into the classroom practice in MLCs in each case.

(1) The Design of the Mobile Device

According to the intention behind this integration of the mobile device in each case, the device is designed and developed to enhance the listening and reading ability. According to this learning objective, the mobile device has been selected as a medium to provide a useful tool for a teacher to migrant learning centers. There existed many other options to support the classes aiming to help the student to get literacy ability. In this regard, the project officer explained why the mobile device was selected as the solution. Provision of books was actually nor practical neither sustainable. The project officer said that bringing all the books from Myanmar was very difficult, and buying a book was also expensive, and the books had been worn out easily. Thus, UNESCO Bangkok came up with an ICT device, and at first, the computer has been considered. However, ultimately, the mobile device was selected because not only computers require higher initial cost

and maintenance expenses, but also tablets have a better function for students to read. Moreover, the project officer explained that the tablet is better in terms of accessibility, and upgrade can be made sustainably.

> *Initially, we considered the PC, but it is more expensive and to help more learners we came up with the application because it can be downloaded everywhere. Also, the mot is appropriate for reading and hold and move easily. Moreover, the PC needs more electric power. Also, buying all the books is too expensive; also it can be torn out easily. Moreover, bringing all the books from Myanmar is impossible. Indeed, move people can reach to applications and, for example, the Burmese parents in the US also downloaded the application and using it.* **Project Officer_I7**

The intention behind the selection of the mobile device denoted that the lack of reading materials is the major obstacle for students to achieve literacy skills. Indeed, the case description about MLCs above indicates that there is a lack of learning materials. For example, in the SKHS center, there was a library which is locked and with no books. In FRY center, there was not a library, but there was some stack of books at the margin of each classroom. Particularly, B2 who used Thai reading books as the main textbook explained that the best advantage of the mobile device is because it includes many books. The lack of resource was also related to the micro-context surrounding each class, as the lack of resources is one of the chronical problems of NFE classes because there is not an external system which manages the quality control of the education institutes. Indeed, one difference between the SKHS center and the FRY center was the existence of external organizations. The SKHS center was supported by Myanmar side more intimately than FRY center, and the only B3 in the FRY center mentioned that the textbook is not enough.

Therefore, to tackle the lack of resources, particularly reading materials, UNESCO Bangkok designed a particular application to be downloaded in the

mobile device. The project officer answered that the tablet is “just a facilitating tool” for teachers to the question asking the potential of tablets in the classroom practice. The project officer also added that “it should not be the tool to replace everything but the contents.”. Consequently, the main application equipped in a mobile device, LearnBig, includes mainly reading books, textbooks, and additional learning contents. The examined learning contents in LearnBig includes mainly four sections: Textbook; Reading Books; Teaching Material; and Multimedia. However, most of the contents in the multimedia section are the links to another page, and the teaching materials related to Thai and Myanmar NFE curriculum are limited in the number and diversity. Therefore, the significant resources are NFE textbook, as they use NFE curriculum, and reading books in Thai and Myanmar language.

Table 14. The Contents in LearnBig Application (As of 190613)

Category	Sub-category	Content Description
Textbook	Thai Basic Education	Subject: Thai and Math Level: Grade1~Grade3
	Thai NFE	**Subject: Myanmar math English General NFPE** **Level: Lv1~Lv2**
	Myanmar Basic Education	Subjective: Science, Math, Myanmar, Geography and History, English Level: Grade 1~Grade5
	Myanmar NFPE	**Subject: Myanmar Math English** **Level: Lv 1~LV2**
	Malay Language	Subject: Malay Language, History Level: Lv1~Lv2
Reading books	**Thai language**	**Level A(easy) ~ G(advanced)**
	Myanmar language	**Level A ~G**
	Karen language	Lower-Upper-General
	Malay Language	N/A
Teaching materials	Thai Basic education	Grade 1~3 Worksheet Lesson Plan

	Thai Non-Formal Education	**NFE curriculum 2008, (1)** **Art lesson plan(1) and worksheet(2)** **Math lesson plan(4) and worksheet (1)**
	Myanmar NFPE	**Lv1: reading card (1) picture card (1)** **Lv2: same textbook** **Teacher Guide: NFPE teacher guide green cover** **NFPE teacher guide white cover**
	Malay Language	Language books
Multimedia	others	Cha-Ching video (English) (1video)
	Khan Academy	Khan Academy Thai Link Khan Academy Burmese Link
	Trueplookpanya	Computer: kindergarten + grade 1~6 (7video)
	OBEC	N/A
	Useful Link	CREATE Project Khan Academy Cha-Ching Youtube Channel DLIT DLIT Resources DLITClassroom True Click Life TruePlookpanya Channel LearnBig Channel Flexible Learning Strategies UNESCO Bangkok TruePlookpanya

When the teacher used the LearnBig application on the tablet mainly in the class, there happened higher chances that the integration of the mobile device into classroom practice replaces the original textbook rather than facilitating additional activities or students' self-learning. Indeed, when the teachers were asked to the advantage of the mobile device during classroom practice, B2 and M1 answered that the tablet is useful because many materials are in one place. Also, B2 and B3 answered that the mobile device is important because it can contribute to the absence or lack of paper-textbook. Additionally, M1 and M2 said that they

use only the mobile device in the classroom because the contents in the tablet are the same as the textbook.

(2) Distribution of the Mobile Device

The one different aspect shown in each case was the students' autonomous use of tablet during the whole class sequence. In FRY center, a teacher did not help students to power on and move on to the right page one by one, while the teachers in SKHS center checked every student's usage of tablet step by step. Additionally, the students carried out an individual activity by using the tablet in the FRY center, whereas there was not an individual activity process during classroom practice in SKHS center.

In this regard, in the case of FRY center, the device has been distributed to every student, not to MLC as a whole. Under this system, every student owned their tablet and at the very first stag and the promise, not to migrate without returning the tablets or sell the tablets, was collected from parents and students. On the other hand, in the case of SKHS center, according to the interview with SKHS principal and project paper, one tablet per 4 children has been distributed. The SKHS center possessed 23 tablets, and they were distributed to each student during classroom hour and store in the locked cabinet usually. Moreover, each tablet was also secured with a password, and the teacher should help and check whether all the students correctly enter the password. Related to this password lock, the distribution the mobile device more directly influences on the center rule. In FRY center, there was not any specific rule made how to manage or keep the tablets, whereas, there was a rule when to use and how to use and keep in SKHS center. The mobile device in SKHS center was distributed as the school device from the first and SKHS principal and teachers presented stricter attitude related to the safekeeping of the device. Moreover, the rule on the device was again

influenced individual task during the classroom practice. It will more explain at the organizational support.

Besides, the difference between the individual device and school device not only influenced the learner but the teachers because the teachers also did not possess their device. Therefore, inevitably, there has been less opportunity for the teacher in the SKHS center to be familiar with the device and integrating device into the classroom practice compared to FRY center teachers. In this regard, previous research of Hatlevik & Hatlevik (2018) revealed that "teachers who are less frequent of ICT during instruction are less familiar with the challenges related to the use of digital information." Moreover, the lack of actual use combined with the lack of teacher training had a relationship to the difference in the division of labor. In both cases of M1 and M2, SKHS principal's husband helps the setting, and especially, M1 also helps the setting in M2's case. For example, during M2's class, an unexpected situation happened that the television and the teacher's tablet were disconnected. However, M2 teacher could not do anything and ignored the situation and continued the lesson while the principal's husband fixing the problem. Related to this, M2 mentioned that it is hard to deal with the tablet, and it is bad that sometimes the tablet stops. On the other hand, any other support by other teachers or division of labor could not be observed in B1, B2, and B3's cases. Thus, B3 also used the television in a while during the classroom observation, and he connected PC to TV by himself.

In conclusion, whether the individual device or school device was entangled with various elements - learner, rule, and division of labor – and existed as the context behind student's individual task by using the mobile device during the classroom practice.

(3) The Availability of Textbook

In the similar vein, as the B2 and B3 answered that the tablet is important in terms of its positive contribution to the lack of textbook in the previous class, the availability of the textbook in the class is also another determinant factor how the mobile device is integrated into the textbook. For example, in the same FRY center, B1 did not use the tablet at all by herself, whereas, B2 and B3 very actively used the tablet. Indeed, B2's class is kindergarten level class, and there did not exist curriculum and textbook. The teacher explained that he had some worries about what to teach in the class before, but it became more accessible with the mobile device and the application. On the other hand, B3's class had the Thai NFE textbook. However, he said that the number of the textbook was not enough, and he used the table as a digital textbook.

However, there was a contradictory issue in which B1, M1, and M2 expressed different aspects in terms of using the mobile device during the classroom practice even they were all teaching same Myanmar NFPE curriculum, and all the students in their class had their textbook. That is, B1 did not use the tablet at all in the class by herself, but M1 and M2 have only used the tablet in the class. However, it should not be overlooked that M1 and M2 do not use the tablet every day in the SKHS center. The class with the mobile device was conducted a maximum of two days per week for one and a half hours. It indicates that the mixed 2-days table-based class and 3-days textbook-based class did not cause any problem in terms of daily progress. Indeed, SKHS principal said that the tablet is not necessary for language class such as Myanmar language subject because the textbook is enough. Also, M1 and M2 said that the tablet is not always helpful according to the subjects and explained that the NFPE textbook has excellent quality with picture and color. That is, even in M1 and M2's case, actually, the tablet was not an essential element for the smooth classroom practice because the

textbook is good enough. Consequently, when there existed a well-developed textbook in MLCs, the teacher's use of tablet by oneself did not happen mostly.

4.2.2. Participant's Features

Beyond the physical environment related to the device, the participants in the classroom practice were also deeply related to how the mobile device is integrated into the classroom practice. At this point, particular aspects of each participant exist as the context behind the current integration of the mobile device into the classroom practice in each case. In term of teacher, teacher's perspective on the mobile device and the integrating the device into the classroom practice; and teacher self-efficacy based on previous training or their competency were shown as the most influential. On the other hand, in the case of a learner, the learner's age, as well as, literacy and ICT ability, were revealed influential through the interview.

(1) Teacher's Perception

Regarding the teacher's perception of the mobile device, all the teachers can be classified with three groups: Negative/ Semi-Negative(Semi-Positive)/ Positive. The teacher in the first group is B1 teacher. Indeed, the perception of ICT device has been revealed as the vital factor most obviously through the interview with B1 teacher. B1's case represented the most dramatically different case in terms of teacher's usage of the mobile device since she does not use the tablet at all by herself in the class. Regarding this, during the interview with her, most of B1's statement about the value judgment on the mobile device express the negative perspective. Contrastively, B2 and M1 expressed a positive attitude toward the mobile device, and they actively use the tablet during the classroom practice.

However, they also indicated some technical problems of the tablet. On the other hand, M2 and B3 who also used the tablets through all the process, even though they continuously use the tablets in the classroom, they expressed overall semi-negative attitude toward the integration of the mobile device.

> *It is not good for eye vision. The word is small and projector is better. The students are lack of sustainability to read by using tablets. ... It is helpful in terms of that students use ICT skills.* **B1_I4**

> *It is really good because it has many materials. However, not good for writing. Note is better to write. ... It is necessary because there is a lack of reading books.* **B2_I4**

> *Sometimes, tablet is not necessary. For example, writing a story. The students are lack of sustainability to read ... It is helpful in terms of that students use ICT skills.* **B3_I4**

> *Tablet is better because everything is inside but the tablet takes longer time and getting warm. Students get distracted. ... Yes (tablet is helpful to achieve outcome), because students feel happy but there is a problem.* **M1_I7**

> *Textbook is faster and tablet is hard to handle it. Also students do other thing and it stops. Student get distracted and it gets warm. ... Yes (tablet is helpful to achieve outcome). Students feel happy.* **M2_I7**

Teacher's perspective toward the device and the integration of the device influenced the usage of other devices with the tablet during the classroom practice. Especially, B2 and M1 who had a positive attitude about the mobile device explained that other teaching tools such as note or whiteboard are better to write down something. Indeed, in B2's case, B2 used not only tablet but also whiteboard actively to write down the answers to the questions on the tablets or draw the circle. Therefore, the partially current opinion about the drawback of the mobile device, the mobile device is not appropriate to write down, resulted in the combined

integration of the mobile device with another teaching tool into the classroom practice.

(2) Teacher's Self-efficacy

Teacher's self-efficacy developed from previous training and experience about ICT device was also another contextual element. Specifically, during the classroom practice, where the students carried out own different tasks by using the individual device was only observed in B3 class. Also, B3 expressed some difficulties with handling classroom activity and students during classroom practice as B3 only explained that he needs more training about students and the teaching activity in FRY center. Indeed, he had the least teaching experience.

> *I need some training about students and activities. ... I need someone who can support activity not the classroom practice.* **B3_I4**

Furthermore, ICT-related previous experience also determined the integration of the mobile device into classroom practice. In SKHS center, the most significant difference between M1 and M2 teacher class related to the utilization of the mobile device has happened how the teacher can well handle with the tablet. During the preparation stage, M1 took the leading role and SKHS principal's husband supported her, whereas, M2 took the supplementary role and M2 and SKHS principal's husband mainly connected the teacher's tablet to television and students to be ready for the class. M2 expressed that she does not know fully about the applications, as well as, LearnBig, and she needs to ask other teachers when it just stopped. At this point, out of all the main research participants, only M2 could not take the teacher training from UNESCO Bangkok because she started to lead the particular class with the device since the previous teacher moved back to Myanmar last year.

I do not know about the contents in the tablet and cannot handle the technical issues… I always need co-teaching. **M2_I7**

She(M1) taught about the LearnBig mainly. She told me that how to turn on and turn off and the games and reading books **M2_I7**

In addition, teacher's professional experience has also influenced on teacher's perspective. First of all, abovementioned, M1, and M2 had a different experience about the integration of the mobile device into the class. At this point, even in the same SKHS center, the teacher perspective on ICT device has revealed differently. M1 said that tablet is better than the textbook, but M2 said that the textbook is better in many ways. In this regard, the majority negative perspective revealed in the M2's answer is related to the difficulty to handle the mobile device, itself. That is, the negative perspective on the mobile device is partially caused by the teacher's lack of self-efficacy about the mobile device.

At this point, B1's case also addressed that the teacher's self-efficacy influences the integration of ICT device into the classroom practice. B1 had the oldest career out of all the teachers, and she presented very high self-efficacy related to her teaching, saying that she has taken enough teacher training in both Thai and Myanmar side and she does not need ICT training because handling the tablet is not easy. However, she displayed that most negative perspective toward the integration of the mobile device into her classroom practice and, indeed, she did not use the tablet by herself at all. It means that even though the mobile device has been introduced to FRY center, but her classroom practice, including classroom activity and sequences, has not changed except that students see tablets rather than a textbook. That is, out of all five cases, the class where the less change has happened is B1's class, who has the oldest career and high self-efficacy in teaching practice.

I don't use the tablet. … It is not good for eve vision. The word is small. Projector is better. The students are lack of sustainability to read by using tablets. **B1_I4**

(3) Learner's Age

In most of the cases, the learners were primary level students in schooling system between 9~15, except the B2's case. All the learners in the B2's class are between 5~6, pre-school level of students. The relatively younger age of learner's class presented different aspects of integration of the mobile device during the classroom practice. The first was the stricter control of using the mobile device during the instruction. As it has been explained in the upper section, the tablets were distributed to each student, and they could autonomously use the device in FRY center. In B2's class, B2 checked whether the students write down the correct answers well on the tablet. Moreover, he wrote down the correct answer on the board for students to copy it. Also, the students could not bring the tablet, unlike other students in the same FRY center. In this regard, B2 said that he does not let his students bring the tablet except to whom his or her parents can help. Thus, he let the students finish the assignment during the class and he said that he needs to control all the students as they are young. Furthermore, the younger age of the learner is also related to the absence of the NFE textbook. Indeed, in the case of Thailand, the NFE system is targeting over 15 years old learners who miss their education (Sommanonont, 2016). Therefore, the learner's age has an indirect impact on the integration of the mobile device as it is related to the existence of the textbook.

(4) Learner's Ability

The literacy ability was the ground factor why the mobile device is introduced to MLCs through the projects. The teachers and principals in both MLC explained that literacy achievement is a main teaching and learning objective. In the case of SKHS center, the principal said that "all the students can achieve literacy" as the first objective. Also, M1 and M2 explained the learning objective is literacy achievement. In a similar vein, even though FRY principal didn't mention literacy achievement as the learning objective directly, since adequate proficiency level in the Thai language is the prerequisite to enroll Thai school (Pyne, 2007), acquiring knowledge to transfer to Thai school connoted literacy achievement. Also, B2 and B3 explained that the teaching objective is to help students to be able to read and write in the Thai language. Also, the project officer explained that both projects aim to improve migrant children's literacy skills and numeracy skills. Consequently, the lower-level literacy ability of migrant learner was the background of the project and the device design.

Moreover, the learner's literacy ability was also directly related to classroom practice. Notably, B2 and B3's case who are teaching Thai literacy using the Thai language to Myanmar migrant children demonstrated it. At this point, they commonly mentioned that they prepare the class by selecting books with easy vocabulary and short sentences. Indeed, only B2 and B2's class, reading books were used, whereas, B1, M1, and M2 only used the textbook on the tablets. Therefore, the learner's literacy ability about the target language influenced on not only the contents on the tablets used during the classroom practice but also the teacher's preparation of the classroom practice.

Furthermore, learner's ICT ability was related to the distribution of the tablets (individual device vs. school device) abovementioned. As the FRY center, the absolute time that the student uses the tablet was overwhelmingly higher than

the students in the SKHS center as explained. Therefore, their ability to use the tablet is naturally raised, which is the precondition of the individual task using the tablets. Moreover, During the interview, B1 and B3 said that "they sometimes take a picture and watch YouTube videos, so it is hard to control." Thus, the more students became familiar with how to handle the device, the more distracting the mobile device was. Indeed, it could be observed in the case of M2. One student, who knows how to turn on the tablet, kept watching other things during the classroom observation. While the interview, M2 explained that the student used the tablet last year, and they know how to use it with the additional explanation that students do other things. Consequently, as students acquired ICT skills, self-preparation, and individual task by using the mobile device become possible. However, at the same time, the tablet became a more distracting factor during classroom practice, which could generate a negative perspective toward the mobile device.

4.2.3. Organization Environment

Physical environment and participant features were in the micro context within the classroom behind the integration of the mobile device in each case. However, as it has been described the chapter three, the classroom practice like activity was inseparable from encompassing social structure such as MLCs related factor or other supporting organizations' factors. In this regard, the study revealed that the MLC's rule about the mobile device and teacher training like organization environment existed as the macro contextual elements behind the integration of the mobile device into the classroom practice in MLCs. Moreover, a broader context, the Thai and Myanmar NFE system also influenced especially teacher training in MLCs and the existence of the textbook.

(1) MLC Rule about the Mobile Device

M1 and M2's cases presented that there is a fixed rule in SKHS center related to the classroom practice with the mobile device. In the SKHS center, there existed a fixed date and time for the class with the mobile device. The class with the mobile device was regularly held on Tuesday and Thursday for one and half hour. SHKS principal set this rule. During the interview with her and the teacher, the SKHS principal continuously expressed the worry about the tablet because it gets warm very quickly. Consequently, even though the learners in SKHS center liked using the tablets in the class, the classroom integrated with the mobile device cannot be held frequently due to this rule. At this point, this rule is intricately related to other factors.

> *Yes, they really like it. They come and ask when we use. The learner's motivation is higher than they are not boring because there are more resources.* **M1_I7**

> *They are happy.* **M2_I7**

As the devices were distributed to the center, not an individual student in case of SKHS center, the responsibility was also on MLC and the principal. Therefore, at first, the distribution of the device (individual vs. school) was a background of this rule. At this same time, the device, itself, was also strongly related to this rule because the reason why the rule has made is because of some technical problem of the device. Not only SKHS principal but also M1 and M2 expressed that tablet get too warm after using 30 minutes. Also, SKHS principals explained that it is turned off after two-hour. That is why she made this rule to use the tablet for a limited time. Also, it influences on the teacher's and student's ICT ability, which is one of the influential factors.

(2) Teacher Training

This project primarily supported the integration of the ICT device into the classroom by the teachers. Also, the Mobile Literacy for Out-of-School Children in Thailand project directly addressed that provision of teacher training and connection between them as the objective[11]. Therefore, the training was only given to teachers in MLCs, not students. The project officer explained that the key strategy of the project is to support the teachers to integrate tablets in their classroom practice in order that students can get the advantages ultimately. Thus, supporting teacher was recognized as the critical strategy to achieve the learning objective in MLCs. In this regard, short-term teacher training has been provided to the teachers.

> *It aims to support teachers at first and supports the teacher will be reflected in the actual classes, and ultimately, the students will earn a benefit.*
> **Project Officer_I7**

At this point, M1 and M2's case demonstrated the impact of the teacher training on the actual classroom practice with the mobile device. The Mobile Literacy for Out-of-School Children project provided tablets and television at the same time, and how to connect it to the television was included as the essential part of the teacher training. Whereas, FRY center wasn't provided the TV. As a result, both M1 and M2's case presented that the connection to television as an essential step at the preparation stage. However, during the classroom practice, the television screen was not functioning at all since everyone has a tablet. The disconnection to the television during M2's instruction did not have any impact on the teaching and learning flow. Nevertheless, M1 and M2 explained that they

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[11] Retrieved from https://aprigf2017.files.wordpress.com/2017/08/20170727_ws74_4_piyawan.pdf

always connect the tablets to television. With M1 and M2's case, it can be assumed that the teacher training affects how the device is integrated into the classroom practice.

In this regard, the mobile device was integrated into the same learning environment without any pedagogical shift because teacher training didn't intend some transformation in overall learning environment. The project officer explained that the applying section is done by bringing the previous lessons plan and share the opinion how to apply mobile device into the lesson plan. Moreover, the teacher training is a relatively short period (See Table 7). Even if the teachers used not to use any ICT device during the classroom practice, only one-day session was about how to apply the tablet to the previous lesson.

V. DISCUSSION

5.1. The Integration of the Mobile Device as a Digital Textbook in Migrant Learning Centers in Thailand

The mobile device integrated into the classroom practice in MLCs in Thailand was merely replacing the previous paper textbook. In the case of B1, the teacher used the paper textbook, and learners used the textbook on the mobile device. In addition, in the cases of B2, M1, and M2, the teachers and learners used the Myanmar NFPE or Thai NFE textbook on the tablets during the whole class. Besides, B2 and B3 also used the mobile device to read Thai reading books, which have always been used as the main textbook in their classes. The learners and teachers solely relied on the textbook on the mobile device, and the lecture methods were "explain about," "read together," or "listen and repeat" the contents in the textbook. The device was not used for supplementary activities or to find additional materials.

In this regard, previous studies have suggested that ICT in education should foster more collaborative, creative, interactive, and student-centered learning to enhance quality education. For example, Tabira and Otieno (2014) conducted a case study on how to integrate ICT in schools in rural Kenya. They offered pre-recorded DVD with educational contents to overcome the lack of materials and teachers. It reveals that ICT integration within traditional classroom setting could not bring out the expected result. Thus, ICT in education should go along with promoting higher-order thinking skills like problem-solving, communication capabilities, autonomy, and creativity (Whitworth and Berson, 2008; Fu, 2013). Therefore, to use ICT in the educational field for quality education, ICT integration, as well as pedagogical change, should be reinforced.

Tezci (2011) postulates that technology integration in class would not bring the desired results without student-centered practice. In addition, UNESCO emphasizes that ICT should be fully integrated into pedagogical aspects (Tabira and Otieno, 2017). However, only a few developing countries use ICT devices as pedagogical tools (Kirkman et al., 2002). Therefore, when designing learning environment with ICT, it should be created to be more student-centered and constructivism-based where learners can be their own teachers and develop higher-order thinking skills (Domingo, 2004; Fu, 2013; Tezci, 2011; Whitworth and Berson, 2003). In this regard, the integration of the mobile device in the MLCs in Thailand was not meaningful in extracting a positive impact for the education of migrant children in the MLCs.

Nevertheless, the use of the mobile device in the current classroom practice in the MLCs in Thailand cannot simply be consolidated based on previous research, which discusses the ICT in general or other educational settings. While answering the second question, the study revealed that the mobile device is replacing the previous paper textbook in the classroom practice in MLCs due to various contextual factors within and outside MLCs. As it has been explained, most of the teaching and learning objectives in MLCs focused on supporting learners to acquire basic literacy skills. Therefore, when it comes to basic literacy learning, more in-depth discussion is required on student-centered learning based on constructivism pedagogy, which is an essential element to enhance the quality of education in MLCs.

Moreover, the reason why it is hard to say that the mere use of the mobile device as a digital textbook is not a meaningful integration is because there have not been enough paper textbooks in some case. In this regard, Lim et al. (2009a) suggested that the digital textbook as a stillness platform, like the mobile device in this case study, is not enough to reflect the diverse learning needs in an

educational scene. Hence, it needs to be developed to be a more integrated medium so that digital textbooks can increase interaction among learners; between learners and teachers; learners and contents; and learners and digital textbooks. However, for example, B2 and B3's case proved that the mobile device as the stillness platform also pertains to their own values and meaning in the current situation where the absolute number of the textbook is not enough. Moreover, an additional value of the mobile device that the teachers agreed upon was that the use of the mobile device, per se, is meaningful. For example, M1 and M2 explained that the students are happy with the tablets and SKHS principal explained that the mobile device can support teacher to search teaching materials such as picture or learn the pronunciation for English subject.

Consequently, the effectiveness or meaningfulness of the current integration of the mobile device could not be judged according to the previous studies. Its positive impact on classroom practice should be admitted. However, at the same time, the suggestions or considerations from previous research should not be overlooked. Therefore, a more appropriate and effective way of integration needs to be considered for the quality education of migrant children in Thailand.

5.2. Unique Context of Migrant Learning Centers in Thailand behind the ICT Integration

The study revealed the context of MLCs within the learning center and outside the learning center. At this point, some of the issues in MLCs are deeply related to the intention of the project through which the mobile device has been introduced and integrated into the classroom practice in the MLCs. At first, the project aimed to help students to acquire literacy skills. In addition, the lack of resources is recognized as a major obstacle to the achievement of goals. Thus,

literacy achievement as the objective of classroom practice in the MLCs and projects influenced the design of the mobile device and how the device is integrated into the classroom practice. At this point, supporting the teachers was another purpose of the project. Thus, the second context of MLCs is the importance of teacher training in MLCs. The issue of teacher training is ultimately related to MLCs as NFE institutes. The NFE system behind the MLCs in Thailand was also influenced due to the lack of textbooks or resources in MLCs, which was related to designing the mobile device and LearnBig application. Therefore, this section explains three unique contexts of MLCs in Thailand related to the integration of the mobile device into classroom practice.

5.2.1. Meaning of Literacy Education for Migrant Learners

The learning goal, enhancing the literacy ability of migrant children, is the key element, which decides the original intention of the project and designing the mobile device. Moreover, literacy learning, per se, is over emphasized in the MLCs rather than other subjects unlike formal schools since the principals and teachers except M1 addressed the literacy achievement as the main goal of the teaching activity in MLCs. It indicates that the language or literacy has special meaning to migrant children, and enhancing their literacy ability is the key to their integration into society. The successful integration lies in the activate engagement with the host community and if a migrant can understand the spoken and written language, the engagement becomes easier since the language of literacy is the key to communication, and higher proficiency levels will increase community participation and job opportunities to gain a secure income (Benseman, 2014; Council, 2014; Hanemann, 2019). Inversely, it also makes sense when they return to their home country. Therefore, for the migrants, if they have acquired enough

literacy skills in their mother-tongue language, they can more easily settle in a home country and get a better job when they return.

In a similar vein, Thai teachers at the FRY center also said that the learning objective for students was to learn the Thai language and get a chance to transfer to a Thai school. Similarly, the Myanmar teacher in the same MLC answers that the learning objective of teaching the Myanmar NFPE curriculum and attaining literacy is to help students get better jobs when they return to Myanmar. The teachers at the SKHS center provide a more intuitive response that the learning objective is for students to acquire literacy skills. Additionally, the SKHS principal added two other objectives, which are (1) students could get a better job, particularly after the NFME curriculum and (2) students can start dreaming about their future. That is, the importance of literacy in continuing learning or finding a better job in both countries, is recognized by the teachers. It partially coincides with the concept map that Hanemann (2019) suggested (See Figure 11).

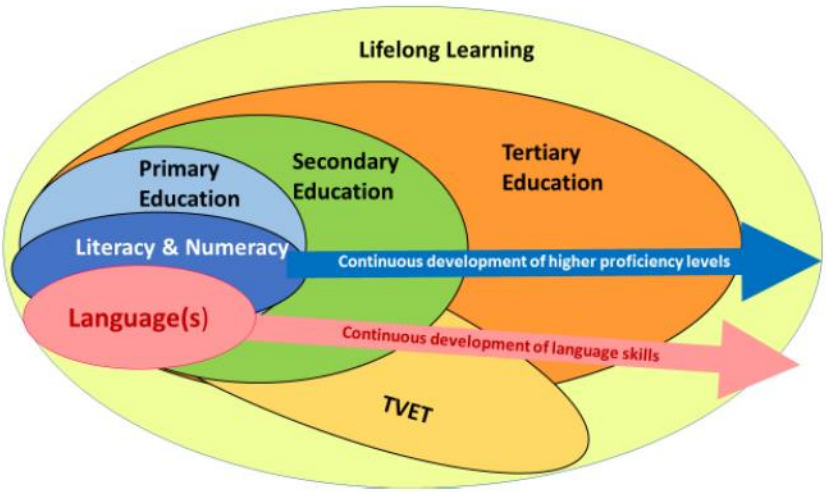

Figure 11. Literacy, Numeracy, and Language Development are cutting across the education and training needs of youth and adult migrants and refugees at all educational levels (Hanemann, 2019).

Literacy and language acquisition in Thai and Myanmar language are recognized as crucial elements, particularly for continuing education in both MLCs. However, as the MLCs are NFE institutes and NFE curriculums are used in both, "tertiary education or TVET (Technical and Vocational Education and Training)" is not reflected in MLC cases. Moreover, B2 classes, targeting students at the kindergarten level, aims to help students attend Thai schools by acquiring Thai language and literacy. Besides, these classes do not distinguish between literacy and language separately. The objective focuses on literacy, reading, and writing skills, except in the English language. Thus, the concept map in the MLCs is represented as follows.

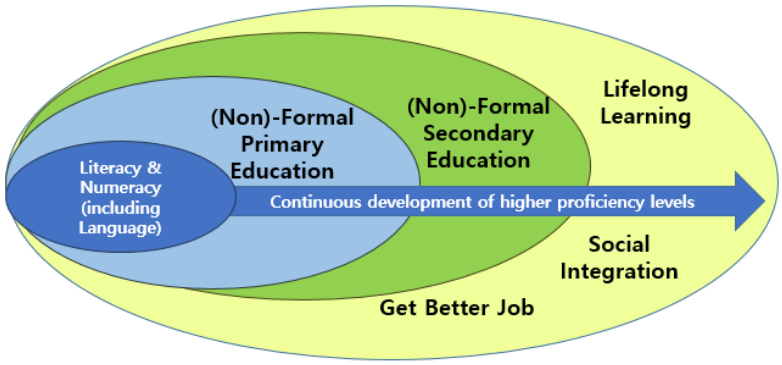

Figure 12. Literacy, Numeracy, and Language is cutting across all level of education in MLCs (Revised by Author)

Moreover, language plays a vital role in the identity formation beyond better integration into a society. Hanemann (2019) says, "*Language is also a vital component of identity and central to how people define themselves.*" In this regard, as mentioned in the section 2.6 of the "Education of Migrant Children," migrant parents sometimes decide not to bring their children to Thai public schools due to the cultural disparity. It, inversely, indicates the powerful advantage of MLCs as

the major educational institution for migrant children. Thus, at the SKHS center, all teachers are natives of Myanmar, the medium of instruction is Myanmar language, and the curriculum is Myanmar NFPE or NFME curriculum. FRY center is more interesting in this regard, because it was not originally established for Myanmar migrant children. As mentioned above in case description, the FRY center was not built specifically for Myanmar migrant children. However, since the majority of migrant children are from Myanmar, and they are running Myanmar NFPE curriculum classes with Myanmar teachers, and the medium of the class is Myanmar language. At the same time, the FRY center also conducts a specific Thai class, B3, where students can learn both Thai NFE in Thai and Myanmar NFPE in Myanmar language. Thus, it clearly proves that even if migrant children stay in Thailand, Myanmar language is recognized as one of the most important learning goals in MLCs as the student's nationality is Myanmar Burmese.

5.2.2. Importance of the teacher training in Migrant Learning Centers

The study denotes that the teacher is one of the major participants who directly influences how the mobile device is integrated into the actual classroom practice in each MLC. At this point, particularly the teacher's perception and self-efficacy are considerable factors. It supports the result of previous studies. Notably, B1's case proves that a teacher's negative attitude or perspective toward ICT devices and ICT integration into the class lowers the actual use of the ICT device in their instruction. In this regard, Gebremedhin & Fenta (2015) reveals the correlation and not a linear relationship between teachers' perception and their actual ICT use. In a similar vein, many previous studies revealed the importance of the teacher's perception and attitude in terms of a teacher's productive use of

ICT devices in a class (Copriady, 2015; Gebremedhin & Fenta, 2015; Lin & Yunus, 2012; Zhu, 2015).

Furthermore, the teacher's self-efficacy is one of the most influential factors in terms of integrating ICT into any instruction (Alt, 2018; Enock et al., 2012; Hatlevik & Hatlevik, 2018; Hepp et al., 2004; Moreira-fontán, García-señorán, Conde-rodríguez, & González, 2019). That is, the teacher's self-efficacy in these cases is directly related to the teacher's perceived ability in ICT, pedagogical, and teaching skills. In this regard, Alt (2018) presented that a teacher with strong ICT efficacy displays a high tendency to enforce ICT-integrated classroom practices. The study also supports them since the teachers' self-efficacy is an important context behind ICT integration into the classroom practices in the MLCs. Rather, it causes the change in the division of labor as M2's case displays that the teacher lacks ICT skills, and an additional teacher can actually support her during the classroom practice.

Moreover, the lack of digital self-efficacy of M2 generates a negative perspective about the mobile device and its integration. Regarding the relationship between self-efficacy and perspectives, Moreira-fontán et al. (2019) say that "teachers with higher self-efficacy for teaching experienced more intense positive emotions when applying ICT in their classes." However, B1's case demonstrates the opposite finding. She possesses the oldest career, and she expresses a higher self-efficacy in teaching. In addition, she says that she has taken enough training and does not need more training about the ICT-integrated classroom practice. However, she is the only one who refuses to use the tablet by herself and had the most cynical view toward the mobile device. Therefore, it proves that a higher self-efficacy in teaching sometimes triggers a higher resistance to change.

At this point, self-efficacy is grounded in one's perception about oneself that he or she has the capability to complete the task or achieve a goal (Sáinz &

Eccles, 2012). That is, a teacher's self-efficacy is deeply interrelated to their capability as a teacher. However, none of the teachers was trained in the official institutes to become teachers for the MLCs. They just graduated from high school or college in any major but did not major in teaching. In this context, the way to enhance their proficiency as a teacher is by attending teacher's training. Indeed, all teachers undergo some form of NFE teacher training from a private university, Mahidol University, or Myanmar NFE institute. Apart from this, the only way they can acquire ICT skills, particularly for teaching, is from UNESCO Bangkok's teacher training. M1 and M2's cases revealed that teachers are using the mobile device in accordance to the training by UNESCO Bangkok.

With regard to teacher training, the study also discovers that the current ICT teacher training is for a relatively short period and does not contribute to essential changes in teaching and learning. The teacher training should be developed to be a long-term program and must to include more sessions to integrate the mobile device into classroom practices with effective and diverse activities. However, since the teachers in MLCs are not likely to be trained as teachers in public schools, the teachers expressed their need for extensive training to learn how to deal with different types of students and conduct effective activities, rather than just train in ICT skills. That is, they do not fully acquire a teaching methodology and within this context, it is hardly expected that a teacher's ICT integration into the classroom practice brings a pedagogical shift. Therefore, when designing ICT in education training for teachers in MLCs, not only should ICT skills and ICT integration be included, they should also include basic educational pedagogy and strategies.

5.2.3. Impact of Thai and Myanmar Non-Formal Education System

Even though MLCs have been recognized by the Thai Government, as an important education institution to achieve EFA, this quasi-regular or semi-legal system of MLC does not refer to a support from the Thai government. Therefore, as results revealed the obstacles in many NFE institutes, such as the lack of resources or teachers without official certificates present in the MLCs, however, we must not overlook the fact that the MLCs have their own unique system, which exists as the broader structure and context in each classroom practice. At this point, the conspicuous system in MLCs was the Thai NFE and Myanmar NFPE system. Particularly, they are deeply related to the textbooks in the MLCs and the teachers' training programs, and they ultimately influenced the integration of the mobile device into classroom practice. In the beginning, the existence of the textbook was affected by the Thai NFE or Myanmar NFPE curriculum. B2 and B3, who teach Thai language and curriculum, did not have enough textbooks for the students in the class. On the other hands, SKHS principals explained that the MLRCand Myanmar DAE provided the textbooks and uniforms. In this regard, Myanmar teachers displayed a positive perspective towards the textbooks, and B1 and M3 reported that the textbooks were sufficient as teaching materials. However, since there was a lack of textbook in case of the Thai classes, the teacher expressed that the mobile device had value in terms of providing textbook and diverse resources.

Indeed, Myanmar MOE has officially recognized the NFE as an important educational strategy to provide an educational opportunity for all since OOSC is a serious issue. Myanmar DAE has established official NFE government institutes, and particularly with help from UNICEF, NFPE curriculum and textbooks were developed. On the other hand, the Thailand NFE system is developed for adults and youth above 15 years, since native OOSC problem is not the primary educational issue. Indeed, the Thai government's effort for the education of migrant children emphasizes the enrolment of migrant children in Thai public schools and not for developing the NFE system for them. This NFE system is also

related to how the teacher is trained annually. Myanmar teachers go to the Myanmar side to undergo a training session for twice a year, while, Thai teachers were not provided the training opportunity, rather, the private University, Mahidol University autonomously provides teacher training to the teachers in learning centers including Myanmar teachers. Therefore, Thai NFE and Myanmar NFE curriculum as the broader factor comprising the classroom practice structure in MLCs needs to be considered when discussing educational issues in MLCs, including the integration of the mobile device in MLCs.

5.3. Implication and Limitation

The study contributes to the academic field by answering how the mobile device is integrated into education in the MLCs in Thailand, which decides the positive impact of ICT in education for migrant children. Even though how specifically ICT is integrated into an education setting has been revealed as the key elements toward a positive impact of ICT in education, it was never revealed in the MLCs in Thailand. While revealing the way of the integration of the mobile device in each classroom practice, some different facets of the integration of the mobile device has been observed. Therefore, to understand the current situation in depth, the integration of the mobile device into the classroom practice in the MLCs in Thailand was also examined. That is, in the process of answering why the mobile device has integrated in those different ways, specific contextual elements of the MLCs and the education of migrant children has been revealed. Thus, these findings increase the understanding of unique context of the education of migrant children and MLCs in Thailand. Therefore, the study contributes to international education development area by presenting the distinct features of their education, leading to increased interest in migrant children who are one of the educationally marginalized group in the world. Besides, it has value, as it presents the contextual

factors, which should be considered while integrating ICT into specific NFE settings like MLCs in Thailand.

The limitation of the study is the lack of student data. The researcher could not conduct interviews with the learners because of a few practice reasons. To begin with, there is the ethics and reliability issue with the young research participants. The age of learners, in this case study is between five and fifteen, and most of them are aged nine to ten. Therefore, to avoid violating ethical issues while encountering under-age research participants, the researcher is required to meet the parents for their permission. However, it is not practical, since their parents are busy migrant workers and live at a distance. In addition, since the study is aimed at revealing diverse and dynamic contextual factors related to ICT integration into the classroom practice, the answers gathered from young learners has relatively low reliability and applicability. Moreover, to conduct the interview or survey, the learners should be able to speak in at least Thai/Burmese or English. However, many young learners have only achieved a novice level of literacy in all these languages. In addition, some of them are from an ethnic minority group, and they are not even fluent in listening and speaking. Consequently, the study could not include the abundant opinion of these learners.

Nevertheless, the study includes the opinion of the learners while observing the classroom practice and interviews with the teachers and principals who are closely related in the education of these learners. Thus, some of the traits of the learners could be revealed as important contexts behind the ICT integration in MLCs. Moreover, this limitation leaves room for future research. That is, future research focusing primarily on the learner's attitude, opinions, or reaction to the integration of the mobile device into their class in MLCs in Thailand is expected.

CHAPTER 6. CONCLUSION

This case study examines how the mobile device distributed by UNESCO Bangkok projects is integrated into the current classroom practice in the MLCs in Thailand. With five different cases, it has identified how the mobile device is integrated into the classroom practice in migrant learning centers in Thailand. Moreover, the study also reveals the micro and macro contexts of MLCs to understand precisely and in depth the ICT integration in MLCs. Through this process, this research reveals the uniqueness and distinctiveness of the education of migrant children and the MLCs in Thailand.

The answer to the first research question is that the mobile device is merely replacing the paper textbook in the MLCs in Thailand. Indeed, the teachers and learners used the textbooks in LearnBig application in the mobile device and relied extensively on the contents. In addition, the lecture methods were "read together," "explanation," or "listen and repeat." Therefore, there were no creative activities observed while using the mobile device and the contents in the device. In relation to the results, previous studies addressed that the merits of ICT in education is accompanied with a transformation in the learning environment to become more interactive, collaborative, and student-centered environments (Domingo, 2004; Fu, 2013; Tezci, 2011; Whitworth and Berson, 2003). In this respect the integration of the mobile device into classroom practice in the MLCs in Thailand do not have a significant impact on the education of migrant children.

Nevertheless, the study insists that even the current way of mobile device integration has its own value in the MLCs because of the unique context of MLCs and the education of migrant children. This study revealed not only the role of the mobile device as a digital textbook in MLCs but also revealed different facets on how the mobile device is integrated into each case as a digital textbook. To understand the different aspects, the study also examined the micro and macro

contexts of the classes in the MLCs. Notably, physical environment, participants' features, and organizational environment were the most considerable contexts. Through this, the three distinctive and unique features of the MLCs related to the integration of the mobile device were revealed, and they are specifically: literacy education, the importance of teacher training, and the impact of the NFE system. This unique context of the MLCs demonstrates that the use of the mobile device as a simple digital textbook is meaningful since it provides abundant materials related to basic literacy education to support a teacher in the MLCs, offsetting the major drawbacks of the MLCs as NFE institutes.

Consequently, this study maintains that the mobile device in the MLCs has positively influenced the education of migrant children. However, it should also be admitted that the authentic interpretation of "integration" was not successful in classroom practices since "integration" in terms of technology integration or ICT integration refers to a thorough connection of the technology to learning contents and pedagogy in order for an effective teaching and learning objective (Kim and Lim, 2017). In this respect, there are some considerations for the integration of the mobile device into classroom practices in the MLCs in Thailand.

First, in terms of the device, it should be designed to include various supplementary teaching and learning materials. The mobile device is merely used as a digital textbook as it contains normal textbooks and reading books in a same format. Therefore, when designing the ICT device targeting the MLCs or NFE education institutes, where they teach with a textbook under specific non-formal curriculum, it will result in a dynamic change in the classroom practice and help in developing more materials to supplement the existing textbook rather than to include the textbook itself. In this regard, Lim et al. (2009a) suggest that the digital textbook as a stillness platform, like the mobile device in this case study, is not

sufficient to reflect the diverse learning needs in an educational scene. Hence, it needs to be developed to be a more integrated medium so that digital textbooks can become increasingly interactive between learners; learners and teachers; learners and contents; and learners and digital textbook. Therefore, we need to consider including advanced activity supporting interfaces in order to support the teachers' needs, since the teachers reported that they needed more support for activities.

Second, a stable mobile environment should be established. The technical drawback of the mobile device directly influenced the restrictions on the use of the mobile device in the MLCs. In addition, the teachers reported a few negative features of the mobile device since they encountered a few technical problems. Indeed, the most uncomfortable factor which teachers and learners encountered were the technical problems of the device, which is related to the usability of the digital textbook (Lim et al. 2009b). Therefore, easier ways to use the tablet with digital pens or Bluetooth keyboards should be considered to ensure that the mobile device plays an integral role as a teaching tool, apart from providing reading materials.

Thirdly, the teacher training in this case study also includes the process where the teachers can learn how to apply the mobile device as virtual instruction by writing down the lesson plane. However, Hepp et al. (2004) argue that teacher training program should be long-standing and planed based on concrete evidence. The two-day teacher training shown in the case is a much shorter period. Therefore, in relation to the duration, the first possible solution is to increase the entire period. However, if that is difficult, there should be frequent monitoring and evaluation processes. Darling-aduana & Heinrich (2018) address that teacher training programs help teachers "to efficiently address common technical issues to minimize disruptions to classroom learning." Indeed, in every case, the teachers

mentioned problems that the device displays (e.g., getting warm, not suitable for vision, distracting factors, etc.). Therefore, there should be some monitoring and revision stages included. Moreover, pedagogical teacher training, and not ICT in education, should also be included. It is directly related to the MLCs context, as the teachers are not professionally trained. Thus, it cannot be expected that the teachers can integrate ICT skills into their instruction with a pedagogical consideration, due to the lack of basic teaching methodology. Therefore, with the consideration that most of the teachers have not received professional and regular teacher's degree, basic pedagogical training, or teacher education should be included in the teacher-training program.

To conclude, this study leaves a few suggestions for future research and projects in terms of teachers and the device. Therefore, follow-up research reflecting these suggestions and similar case studies on other NFE institutes are expected.

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APPENDICES

Appendix 1. Research Schedule

Day	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Date	**2/24**	**2/25**	**2/26**	**2/27**	**2/28**	**3/1**	**3/2**
Content				FRY principal interview			Mae Sot Field Manage Interview
Place				FRY center (Bangkok)			Chantaburi
Date	**3/3**	**3/4**	**3/5**	**3/6**	**3/7**	**3/8**	**~**
Content					-FRY principal Interview -Classroom Observation (B1,B2,B3) -Group Interview (B1,B2,B3)		
Place					FRY center (Bangkok)		
Date	**~**	**3/18**	**3/19**	**3/20**	**3/21**	**3/22**	**~**
Content				SKSH Principal Interview	-Classroom Observation (M1,M2) -Group Interview (M1,M2, SKHS Principal)		
Place				SKSH center (Mae Sot)	SKSH center (Mae Sot)		
Date	**~**	**4/1**	**4/2**	**4/3**	**4/4**	**4/5**	**~**
Content						UNESCO Bangkok Project Officer Interview	
Place						UNESCO Bangkok Office	
Date	**~**	**5/20**	**5/21**	**5/22**	**5/23**	**5/24**	**5/25**
Content			UNESCO Bangkok Office member-check	SKHS center member-check			
Place			Korea (via email)	Korea (via email)			
Date	5/26	5/27	5/28	5/29	5/30	5/31	
Content			FRY center member-check				
Place			Korea (via Line)				

Appendix 2. Information of Classroom Observation

	B1	B2	B3	M1	M2
Date	7th March	7th March	7th March	21st March	21st March
Time	09:00~10:00	10:00~11:00	11:00~12:00	09:30~10:15	10:15~11:00
Subject	Myanmar language	Thai Language	Thai Language	English	Myanmar Language
Curriculum	Myanmar NFME	Thai Pre-school	NPE Thai	Myanmar NFPE lv1	Myanmar NFPE lv2
Medium of Instruction	Myanmar language	Thai Language	Thai Language	Myanmar Language	Myanmar Language
Learner Age	9~14	5~6	10~15	9~10	10~12
Learner Ethnicity	Myanmar, 8 ethnicities, Few Thai, Cambodia, Laos			Myanmar, different ethnicities (Mon, Burma, Karen, Kachin, Islam)	
Teaching Materials	Tablet, Projector, Books, Textbooks	Television, Tablet, Books	Television, Tablet, Books, Textbooks	Textbook, Whiteboard, Flashcard	Textbook, Whiteboard, Flashcard
Existence of Lesson Plan	X	X	X	O	O
Homework using the Tablet	Answer to quiz	Answer to Quiz During the Classroom Practice because kids are young	Answer to Quiz	X	X
Team Activity	Not during the classroom observation but sometimes they do co-learning	No (Teacher should control all the students)	whole class activity	Sometimes, they do role play but not with tablet because teacher need to control them all	Myanmar language: role play Math: group work But not with the tablet

Appendix 3. Interview List

Teacher

Classroom Observation	
Class Description	Please tell me the class time, subject, curriculum of the class that I observed.
	What is the medium of instruction?
	Can you tell me the age and ethnicity of the learners?
	What are the teaching materials which can be used in the class?
	Is there any assignment (by using tablets)?
	Is there any team activity (by using tablets)?
Activity System of Classroom Practice	
Subject	How long do you work as a teacher
	Why do you become a teacher?
	Are you satisfied with teaching work?
	Have you used the tablet before? Is there any difficulty in using tablets?
Tool	Why do you use tablets?
	How do you use the tablets?
	Which teaching tools do you use before the project (without tablet)?
	How do students use the tablet?
	What is the advantages/disadvantages of the tablets?
	How do you solve when the tablet is broken?
	The tablet is easy to use?
Object	What is the objective of the class?
	Do you think the tablet is useful to achieve the object?
Community	Is there any difficulty with the learners?
	What about the learning environment? What kind of improvement needed?
	Is there any special characteristics of the learners? (migrate, absent, ability etc.)
	Do you think the learners like the class with the tablets?
	Did the learners tell any difficulty in using the tablet?
	Are the parents supportive?
	Do you think the parents like their children using the tablets for learning?

	The learning center is supportive?
	Is there any other support from other organization?
Rule	Is there any class rule?
	Does the tablet is distracting, making it hard the students to follow the class rule?
	Is there additional rule made only for tablets?
	Do you think that you have taken enough teacher training?
	Do you think you need more training regarding the tablets?
	Is there any MLC rule?
Division of Labor	Are there any extra work except teaching?
	Tablets are helpful for the extra work?
	How do you prepare the class?
	Is there any division of labor?
	Do you think it would be better with co-teacher in the classroom?
Outcome	What should be the outcome of the classroom practice?
	Is the tablet helpful to achieve the outcome?

Principal

General Information about MLCs	
MLCs	Please tell me about the history about the MLCs (When? Who? Why?)
	How many students are enrolled now?
	How many teachers are working now?
	What is the objective of this MLCs?
Activity System of Classroom Practice	
Subject (teacher)	What is the characteristic of the teachers?.
	Do the teachers have teacher training? Please explain in detail.
	How about the teachers in terms of using the tablets in their class?
Tool	Do you think teachers and students like the tablet?
	Is there any difficulty with the tablet?
	What is the purpose in using the tablet?
Object	What is the objective of the class?
	Do you think the tablet is helpful to achieve the objective?
Community	What are the characteristics of the learners?
	What about the relationship between teachers?
	What about the relationship between students and teachers?

	What about the relationship between parents and teachers?
	Is there any organization helping the MLC?
	Is there another organization helping the MLC with the tablet?
Rule	Is there any fixed MLC rule?
	Is there any rule newly made after using the mobile device?
Division of Labor	How the teacher's labor is divided?
	Is there any change in division of labor after using the device?
Outcome	What should be the outcome of the classroom practice?
	Is the tablet helpful to achieve the outcome?

UNESCO Bangkok Office's Project Officer

General Information about the Projects	
Project	What is the objective of Mobile Literacy for Out-of-School Children in Thailand project?
	What is the objective of the Learning Coin project?
	What is the selection standard?
Activity System of Classroom Practice	
Tool	Why is the tablet selected?
	How do you (your team) collect the materials in the tablet/application?
Object	What is the teaching and learning objective of the classroom practice with the mobile device?
	How should the tablet be helpful to the classroom practice?
Community	Does UNESCO Bangkok office provide additional support to MLCs?
Rule	Please describe teacher training schedule.
	What is the objective of the teacher training?
	Who has the responsibility for keeping the tablets?

Appendix 4. Sample of Synthesized Data about Classroom Practice

	Category	B1	B2	B3	B4	B5
Subject	Teaching experience	7 years	2 years + additional 7 years for Sunday adult class teacher	2 years	4 years	3 years
	Education Experience	High-school graduate and undergraduate compatible program	Undergraduate in any major	Undergraduate in any major	high school + Tak community college (community development subject) + Cambridge course	high school + Tak community college (community development subject)
	The reason become a teacher (Motivation)	Since 17, I want to become a teacher	Feel sorry for the migrants	Want to help them to read	Always want to be a teacher and particularly to help the migrant children They cannot easily leave because parents cannot help the children.	Same with B1
	Satisfaction	Yes Not get paid well but yes	I can earn more money if I work in the factory, but I want to work as a teacher Not get paid well	Same with B2	Wage is low but satisfied.	Satisfied with but there is no assurance when get back to Myanmar
	ICT skills	No, Tablet is much easier than the smart phone.			No only use computer and phone	Same with M1
Tool	The reason why tablet is used	Don't use (teacher)	To read the books	paper Textbook is not enough	Because students really like it. Happy	Student earn new experience they are happy and fun
	How the tablet is used		Select the 2 books everyday	As the Digital Textbook E-book due to the textbook is not enough	only tablet connected to television because it is same with the textbook. Sometimes, whiteboard is used because Lv1 students cannot read.	connect to TV and use only tablet because it is same with the textbook
	Main teaching tool before the tablet	Textbook	Reading books	Textbook	Textbook and teaching tool with natural ingredient such as leaves or clock, etc.	Textbook and DIY teaching tool

	Student's use of tablet	It is textbook and do assignment or find the materials.	Read the tablet books and write on the note.	Textbook replacement	Digital Textbook (researcher's observation)	turn on and turn off at first and introduction about what to learn, and find the topic and tell the page
	Advantages/ Disadvantages of the tablet	It is not good for eye vision. The word is small. Projector is better. The students are lack of sustainability to read by using tablet.	It is really good because it has many materials. However, not good for writing. Note is better to write. Need more books, already many books were read. Need highlight function. They need more books The students are lack of sustainability to read by using tablet.	Sometimes, tablet is not necessary. For example, writing a story. The students are lack of sustainability to read by using tablet.	Tablet is better because everything is inside but the tablet takes longer time and getting warm Student get districted and get warm. Also it is no co-teaching so it is hard to teach one by one	Textbook is faster and tablet is hard to handle it. Also, students do the other thing and it stops Student get districted and get warm. Also it is no co-teaching so it is hard to teach one by one
	Technical Problem Handling	Tell UNESCO			Go and check and change it, sometimes principal's husband fix the tablet.	
	Drawbacks	Easy, there is only technical problem.			Technical problem (get warm) also sometimes it stops	Do not know about the contents in the tablet and cannot handle the technical issues.
Object	Teaching and Learning Objective	When they get back to Myanmar, they need to find the job.	Students can read and write in Thai.	Same with B2 and they can find the job.	Student acquire the literacy and real life knowledge	Same with M1
	Tablet->Object	No	There is lack of materials, so the tablet is important.	It is helpful as textbook.	Tablet supports reading and writing and learning tablet is meaningful	Not important for some subject such as science
	Object (Principal's perspective)	every student can have the place where they can learn. Achieve appropriate knowledge to go to public school			1. can literacy at least primary level of literacy as their parents don't have 2. can dream the future 3. To find the better job unlike their parents	
	Tablet->Object (Principal's perspective)	yes			Yes, nowadays ICT skill is important and information is also important Also, in terms of literacy they can make the story with tablet it is helpful	

Community	Difficulties with Learners	Because of the Age teenager act differently	No ethnic minority student is hard	Same with B1	A Karen student is not good. Some students come late and need to teach again.	And their level is different and they are divided into two groups, which takes double time.
	Learning Environment	Space, the contraction will be finished soon. Need to find the place.			Need more materials. Actually NFPE textbook is very good itself.	Need more teaching tool such as picture card it tear out easily. And lack of teaching materials
	Learner Traits	Frequently the students don't come. Need to repeat many times not good. Migrate depends on parents Unregistered students are dangerous to commute school	Sometimes, they just disappear because of migration. They learn fast as they are young. Migrate depends on parents Unregistered students are dangerous to commute school	Sometimes they don't come. They are relatively older. Migrate depends on parents Unregistered students are dangerous to commute school	They sometimes absent or migrate. They can read the English alphabet. And some of them can read the Myanmar language They stay in Mae Sot quite a long time. Even they do not know whether her is Myanmar or Thailand.	Some learner is rude. Everyone can read the English alphabet and Myanmar language They stay in Mae Sot quite a long time. Even they do not know whether her is Myanmar or Thailand.
	Learner's Attitude on Tablet	They like it because there are many different resources with color and picture. But they like it because they can do other activities.			Yes, they really like it they come an ask when we use. The learner's motivation is higher and they are not boring because there are more resources.	They are happy. The learner's motivation is higher and they are not boring because there are more resources.
	Learner's Ability on Tablet	No	No (R)learners couldn't type well	No	They are good. But it take longer time and can type little bit.	They learnt last year and good. But cannot type
	Parents	Supportive There is parent meeting and talk about the right of parents also. parents of ethnic minority group cannot communicate with Thai teachers at all. Only Myanmar teacher can little bit. So it is hard.			They live far half of them are supportive and half of them are not. The teachers need to persuade them to their children to come to center. Have regular meeting 4 times per one year. It is dangerous for them to come so teacher provides the shuttle.	
	Parent's Attitude on Tablet	No complaints	Students do not bring the tablet except two whom their parent can help	One parent dislikes it because the child watches the YouTube	Not student device	Not student device

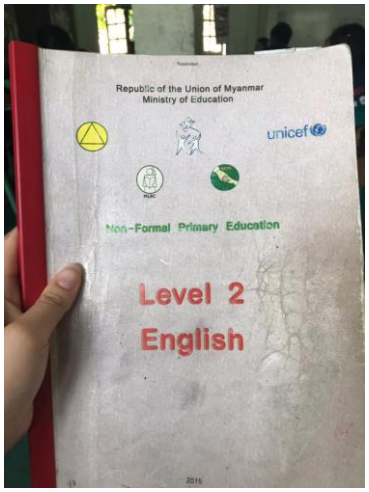
	Learning Center	Supportive. They support the teacher with books and pens.			Yes principal's husband help and teacher help each other especially for M2	
	Other Organization	No, Organization now finished only individual donors			HWF is the mother organization support fund, uniform etc. DAE and MLRC support wage and textbook uniform… Thai government or MOE doesn't support the center but there is a rule to follow such as singing a Thai National Song.	
Rule	Class Rule	Don't chat too much Listen other students	Don't run, Three times warning and stand up as punishment	Same with B1 and B2	Don't fight, help each other	don't eat snack, Don't make noise, don't fight
	Tablet -> Class Rule	They sometimes take picture and watch YouTube, so it is hard to control. However, when I go they read the book	No	Same with B1	Punishment=cannot use the tablet so they follow the rule much more	students watch each other
	Rule related to Tablet	(Related to above answer), warning accumulated then they cannot bring it	No	Same with B1	Keep in the locker Use it only 2days for 1 and half hour because it gets warm and can be used only maximum 2hours.	
	Teacher Training	Take teacher training from both Thai and Myanmar side. Go to Mahidol University Children in Learning center have one week training per year and go to Myanmar two times to take NFPE teacher training	Okay Go to Mahidol University Children in Learning center have one week training per year	Need some training about students and activities Go to Mahidol University Children in Learning center have one week training per year	Go to Myanmar for NFPE training just one times for refreshing. They teach the new curriculum, student evaluation etc. Need more training for teaching skill. How to deal with different levels of students Cambridge NFE program + College	Go to Myanmar for NFPE training two times. They teach the new curriculum, student evaluation etc. Need more training and need more knowledge.
	Teacher Training related to Tablet	I am okay with the tablet.	Application, itself, has a problem because sometimes students compare the grade. Need more training about application rather than how to utilize.	There is technical problem	Just one time by UNESCO Bangkok for 2 days. How to connect the TV, lesson plan, how to prepare the class, show the application and resources.	M1 told me that how to turn on and turn off and the game and reading books and LearnBig application mainly
	MLC Rule	No rule but verbal agreement no physical punishment, cleaning school, Thai National Song every Monday and Tuesday			Need to write the teacher diary and lesson plan everyday Rule book like formal school except the account(no bank account) everything is well followed.	

Division of Labor	Extra Work	Only teaching			Do the extra work such as extra class, school clearing, participate weekend market	
	Tablet -> Extra Work				No because there is a computer	
	Preparation of the Class	With the textbook	Select the 2 books in the tablet with less words and easy quiz, if it is long then the tablet is turned off	Almost every day I prepare the chapter but not every day.	Lesson plan and teacher diary but do not use tablet at all.	
	Division of Labor (Co-teaching etc.)	No			extra work together. Principal's husband help sometimes.	There is another teacher during the preparation step all the time because need help when it stops. Do the extra work together.
	Co-teaching	Need TVET class. Need someone who can support activity not the classroom practice	No	Need someone who can support activity not the classroom practice	Yes sometimes, because connection is failed sometimes	Always need
Outcome	Outcome	Can find the job pass the test	Can go to the public school. Sometimes, just Thai children also come.	Can go to the school and find the job pass the test	They can apply the knowledge to real life situation. Continuous learning. Go to other school or study by themselves after or leaving the school.	
	Tablet -> Outcome	If is helpful in terms of that student use ICT skills yes can study at night and at home	It is necessary because there is lack of reading books	If is helpful in terms of that student use ICT skills yes can study at night and at home	Not all subject Yes, because students feel happy but there is problem too	Same with M1 Yes, because students feel happy but there is problem too

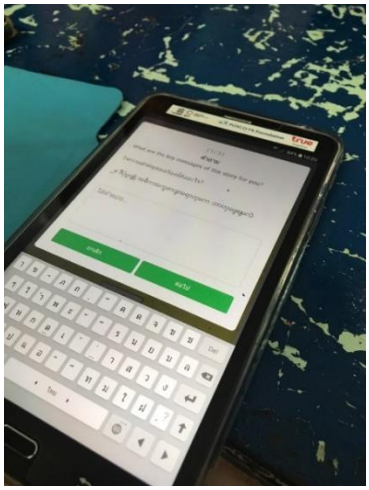
Appendix 5. Photos

Appendix 5-1. FRY Center

B1's Class Textbook Sample and Learning Environment



B2's Class Tablet (Individual Task) and Classroom Practice

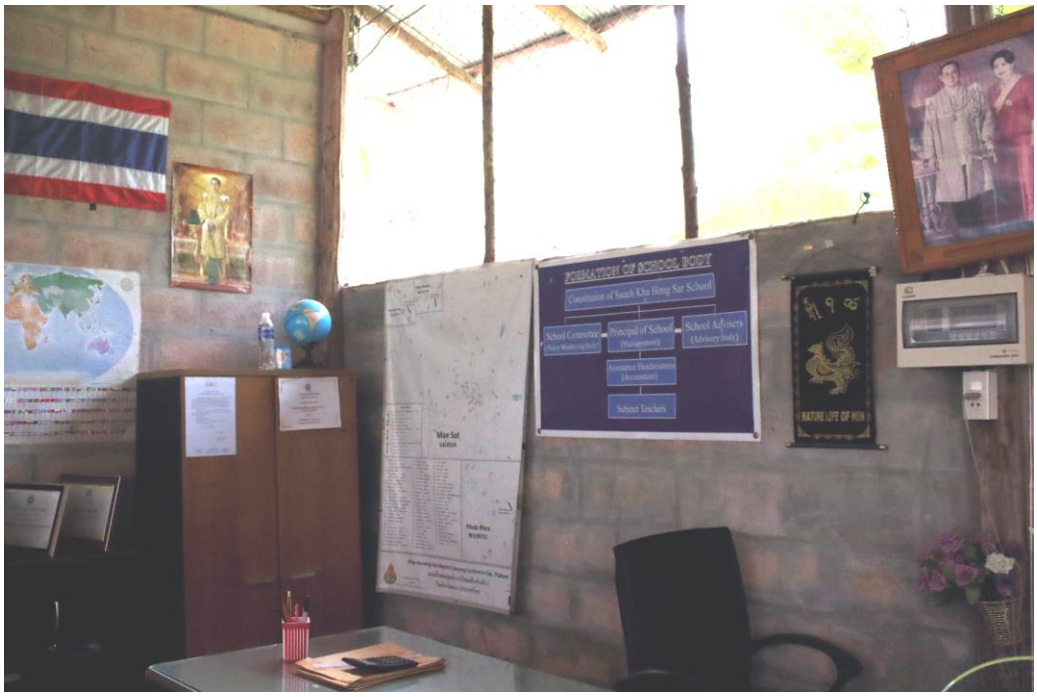


B3's Classroom Practice

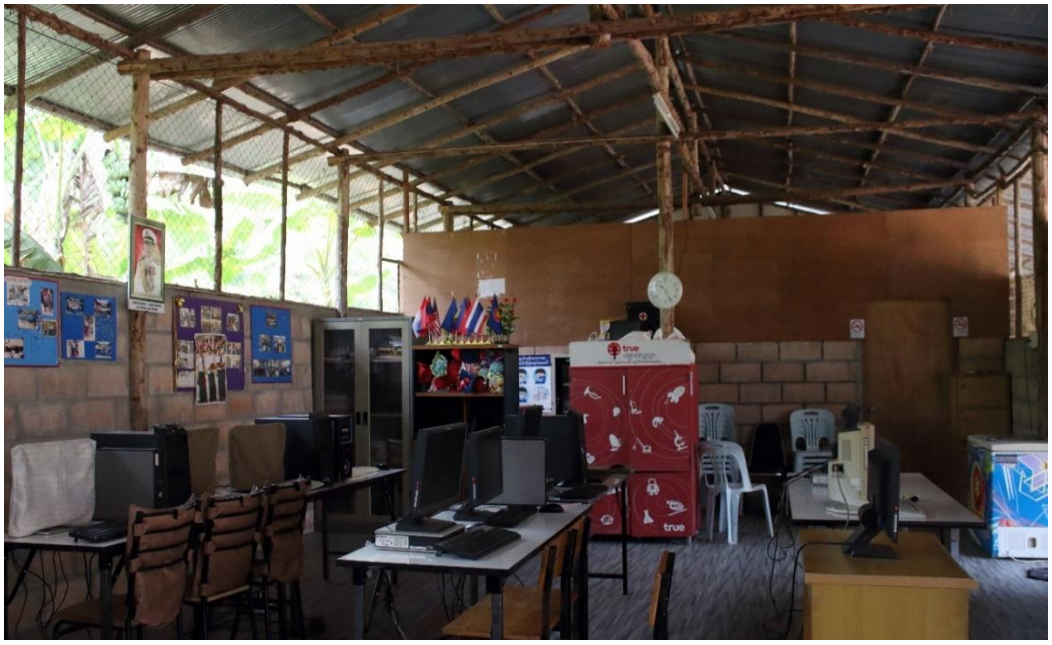
Appendix 5-2. SKHS Center

Classroom Building

Thai National Flag and Pictures of King



ICT Lecture Auditorium



M1's Class

M2's Class

Appendix 6. Abbreviation and Acronym

ASEAN	Association of Southeast Asian Nations
BMWEC	Burmese Migrant Worker's Education Committee
DAE	Department of Alternative Education
EFA	Education for All
FLS	Flexible Learning Strategies
FRY	Foundation for Rural Youth
HWF	Help Without Frontier
ICT	Information and Communication Technology
IO	International Organization
MLC	Migrant Learning Center
MLRC	Myanmar Literacy Resource Center
MOE	Ministry of Education
NFE	Non-Formal Education
NFME	Non-Formal Middle school Education
NFPE	Non-Formal Primary Education
NGO	Non-Governmental Organization
MNLCA	Mon National League for Consolidation and Aiding
OOSC	Out-of-School Children
SDGs	Sustainable Development Goals
SKHS	Suach Kha Hong Sar
UNESCO	United Nations Educational, Scientific and Culture Organization

국문 초록

태국 이주민학습센터의 수업에서 모바일기기의 통합에 관한 사례연구

서울대학교
사범대학원 글로벌교육협력 전공
김가형

교육적 맥락에서 ICT 의 통합이 가지고 오는 접근성, 교육의 질, 그리고 보편성에서 긍정적인 영향력이 밝혀짐에 따라 개발도상국에서 ICT 의 교육적 활용에 대한 수요는 늘어왔다. 이 때, 이러한 시도는 학교교육을 넘어서 소외된 집단을 위한 비형식교육 맥락에서 역시 증가해왔고, 이러한 맥락 아래, 유네스코 방콕은 태국 이주민 아동의 교육을 위해 이주민학습센터에 모바일 기기를 도입하였다. 그러나, ICT 의 교육적 통합에서 핵심적으로 밝혀져야 할 질문인 “특정 교육적 맥락에 ICT 가 어떻게 통합되고 있는가?”에 대해 현재 이주민학습센터에서 밝혀진 바가 전혀 없다. 따라서, 본 연구는 태국의 이주민학습센터에서 활용되고 있는 모바일 장비의 통합이 어떻게 되고 있는지 밝히는 것을 목표로 한다.

본 연구는 질적사례연구로 태국 방콕과 메솟의 이주민학습센터의 총 5 개의 수업이 연구의 사례이다. 사례에 대한 정확한 이해를 위해, 다양한 연구 방법 (문서 분석, 수업 관찰, 인터뷰)가 사용되었다. 또한, 각 수업의 교사가 본 연구의 주요 연구 참여자로 그리고 교장 선생님, 유네스코 방콕의 프로젝트 담당자와 학습자가 보조 연구 참여자로 수업 관찰과 인터뷰에 참여하였다.

연구 결과는 우선 이주민학습센터에 모바일 기기가 통합된 목적은 이주민 학생들의 문해 능력을 증가시키기 위해 도입되었음을 밝힌다. 실제 이주민학습센터와 같은 비형식교육 기관의 만성적 문제점 중 하나가 자료의 부족이기 때문에, 장비는 다양한 자료(비형식교육 교재, 도서, 교수학습자료 등)를 제공하는 것을 가장 우선으로 디자인 되었다. 결과적으로, 모바일 기기는 각 사례, 수업에서 교재를 대체하였다. 이 때, 각각의 사례에서 (1) 교사의 장비 활용 (2) 다른 교구와의 통합적 활용 (3) 모바일 기기 속 수업 활용 자료 (4) 학생들의 자율적 기기 활용 (5) 강의 방법 의 다섯 가지 측면에서 다른 통합 양상이 나타났다. 이러한 통합의 맥락은 크게 물리적 환경, 참여자 특성 그리고 기관 차원의 특성으로 나타났다.

본 사례에 대한 심도 깊은 분석을 통해 본 연구는 지금껏 밝혀지지 않았던 이주민학습센터에서 ICT 의 활용 현황과 통합의 양상 그리고 이를 둘러싼 이주민학습센터의 특수한 맥락을 밝혔다. 따라서, 본 연구는 학문 영역에 태국 이주민학습센터에서 기기 통합 양상과 이주민 아동의 교육을 위한 모바일기기의 의미를 밝히는게 기여했다. 또한, 아동의 교육의 현실과

이주민학습센터의 특수성 역시 밝히므로 국제협력 분야와 교육분야에 함의를 남긴다. 마지막으로, 본 사례와 비슷한 맥락 혹은 이주민학습센터에서 ICT 기기를 활용할 때 고려사항을 반영한 후속 연구와 프로젝트가 기대되는 바이다.

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주요어: ICT 통합 교육, 교육적 소외 집단을 위한 ICT 통합, 이주민 교육, 이주민 학습 센터, 태국

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