

Using Open Education and Information and Communications Technology to Promote Functional Literacy and Mother Tongue Language Use among Ethnic Girls and Women in Northern Thailand

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Abstract

This study is a participatory action research for development using a qualitative approach comprising a documentary study, interview, focus group discussion, observation, and participatory activity (i.e., training and workshop). The main findings of this research are as follows. Socio-economically, the ethnic girls and women are generally mountainous farmers with an average marriage age of 15-20 years. The majority obtain primary education while some, with permission from their families, may obtain high school education from nearby non-formal education providers in their community. Most of them express interest in gaining functional literacy as a way to improve their living conditions, whereas in terms of language literacy, Thai language is considered most in-demand, followed by English and Chinese languages. Their Information Communications Technology literacy is generally represented by smartphone use for social media. In the context of functional literacy, gender disparity is still present, but this could be mitigated if the girls and women have better access to functional literacy in Thai language, as well as better income-earning and farm contribution opportunities. Among the prioritised demands are smart farming, nutrition, and Thai language, respectively. Concerning mother tongue language use via open education and Information Communications Technology, the study found that mother tongue languages are used to pass down local wisdom, heritage, and crafts. Additionally, open education and Information Communications Technology are used to fulfil demands in the aspects of gender sensitisation, self-identity, mother tongue, and creative economy. Meanwhile, functional literacy can be better accessed through online channels, especially for commerce. Thus, open education and Information Communications Technology can be used as tools to integrate ethnic local wisdom, creativity, mother tongue use, and resource management for the betterment of ethnic people.

Keywords: Open Education, Information Communications Technology, Functional Literacy, Mother Tongue Language, Thai Ethnic Girls and Women, Northern Thailand

1. Introduction

“Indigenous languages matter for sustainable development, peacebuilding and reconciliation” (UNESCO, 2019a). According to the current situation and field report of the *2018 Ethnic Girls and Women Empowerment through Functional Literacy in Northern Thailand*, some of the outstanding ethnic groups, and especially the girls and women in these groups, have their own mother tongue languages and cultural

identities. Among the main ethnic groups in Nan Province, northern Thailand are the Lau people, whose ancestors have been living in mountainous areas as farmers, the Mhong people, who demonstrate entrepreneurial skills by managing and marketing their farming products and heritage crafts not only to earn more income but also to help sustain their tribal heritage, and the Malabri and Khamu people, who also have their own unique cultures and mother tongues while living within similar environments and furnished with similar natural resources, but still face problems relevant to Thai language literacy for needed for performing functional tasks and living life in general. Their limited use of Thai language has created gaps, such as in land ownership, gender status, life security, education, job opportunity, and others.

The balance that exist between Thai and mother tongue languages are necessary to ensure a peaceful life and good use of natural resources, due to the crucial role mother tongue languages play in all ethnic groups, not only as a tool for communication, education, social integration, and development, but also a repository of their unique identity, cultural history, traditions, and memory. However, despite the immense value of mother tongue languages, they seem to be disappearing not only in Thailand but also other places around the world. The United Nations' declaration of 2019 as the International Year of Indigenous Languages (IY2019) helped raise awareness of the current state of indigenous languages, thus benefiting the people who speak them, and also encouraging others to appreciate the important contribution they make to our world's rich cultural diversity (UNESCO, 2019a). Thus, considering the current situation surrounding disruptive digital technology, the author believes digital technology can be used to benefit ethnic groups in Thailand. Specifically, open education embedded with Information Communications Technology (ICT) can be used to facilitate functional literacy to help empower, preserve, and sustain all mother tongue languages.

2. Literature Review

Open education is very important in this era of disruptive digital technology, as gaps continue to widen and challenges continue to grow, especially among marginalised groups. However, digital technology has the potential to be the 'magical tool' to reach marginalised groups and open the way for them to gain fundamental knowledge and skills based on their own identities, capacities, and heritage. ICT has been used to facilitate open education to provide appropriate opportunities to everyone, more than was ever possible before. Open education is particularly useful for self-directed learning with integrated stages and learning resources, especially for lifelong learning purposes, embedded with convergent media, especially social networks and digital tools to facilitate interaction on learning platforms or learning management systems. Accessible social media is also becoming more common and effectively used. Open learning is also more flexible, and can allow for better interaction within the learning process as well as better access to learning materials through open educational resources (OER) (Roberts, 2013).

Open and distance learning (ODL) is the innovative, flexible, and in-time learning approach that aims to provide learning opportunities to all. ODL can also provide tailored learning opportunities to the marginalised. No doubt, in this era of disruptive digital technology, ODL has become more accepted throughout the world in all formal, informal, and non-formal forms of education, especially when combined with ICT. More and more groups of people, including the marginalised, can now easily access new knowledge and opportunities that are well-integrated with their real-world needs and lifestyles, during these current times that are characterised by this technology disruption, as well as the current pandemic and various disasters.

In discussing the role of ODL in lifelong learning and development, especially in this era of digital technology, many pedagogical approaches have embedded ICT to better optimise ODL's effectiveness and make significant advances to ensure lifelong learning is possible for all. McLean et al. (2006) and Minnaar (2013), Kamolrat Intaratat (2020) pointed out that ODL has great potential to help a wide range of learners achieve more desirable and rewarding accomplishments for themselves and their communities. In many countries, ODL has proven its potential in fulfilling the promise of lifelong learning for all.

Massive open online courses (MOOCs) are free online courses made available to anyone under the

concepts of access, equity, affordability, design, and flexibility, as well as under the context of open education. MOOCs often involve video-based learning embedded with digital tools and OER that aim to provide open and flexible learning in various areas and subject matters, including cooking, farming, gardening, physics, chemistry, media literacy, ICT, computer literacy, and others. This means that MOOCs can serve formal, non-formal, and informal education; this helps to realise their ultimate goal for self- and lifelong learning. MOOCs are part of open education in this era of disruptive digital technology, but can be further developed to become a more tangible platform that can fully serve the masses (Beal, 2017).

Functional literacy refers to the practical skills of reading, writing, and mathematics required for real-life situations, and necessary for people to function effectively in their community. Examples of functional literacy include health literacy, which is the ability to understand healthcare information, particularly for making medical decisions or lifestyle choices about nutrition, exercise, sleep, and other factors that affect physical and mental well-being, civic literacy, which is an awareness of how governments work as well as one's rights and responsibilities as citizens and voters, financial literacy, which is the ability to manage finances and make decisions about money, and ICT literacy, which is the ability to access, evaluate, utilise, and create messages through different types of media (Carr et al., 2018).

The United Nations' declaration of IY2019 is meant to recognise mother tongue languages and ethnic groups, as well as acknowledge language as a core component of human rights and fundamental freedoms. Language is also essential to realising sustainable development, good governance, peace, and reconciliation. A person's freedom to use his or her chosen language is a prerequisite to freedom of thought, freedom of opinion and expression, access to education and information, employment, and other values enshrined in the *Universal Declaration of Human Rights*. Linguistic diversity contributes to the promotion of cultural identity, diversity, and intercultural development, which affects functional education and development for inclusive development of self, community, and societies as a whole (UNESCO, 2019b).

2.1 Relevant Studies

In their 2017 publication, Akello et al. presented findings on women who leveraged functional adult literacy (FAL) as a gateway to financial progress and welfare in the region of Lango, Uganda. The qualitative study involving 45 participants aimed to examine how women's lives changed resulting from their using acquired FAL knowledge and skills to participate in income-generating activities. The study demonstrates that FAL brings out women's individual and collective agency through a concept of "conscientisation", and dialogue as a tool for marginalised people acting as social and economic change agents. Findings revealed that FAL training improves women's livelihoods. As such, governments, international development partners, non-governmental organisations, and civil societies should support FAL programmes.

Through her 1996 publication, Canieso-Doronila undertook to improve the design and delivery of the Literacy Coordinating Council of the Philippines in 13 marginal communities throughout the Philippines. This study examined the social meanings of literacy in these marginal communities, in which the common characteristic is an average income that is below the poverty threshold. Issues investigated include the meaning of functional literacy and its measurement, and the concepts of literacy and numeracy were found to be embedded in their social and cultural contexts. The findings have important implications for the design of community literacy programmes.

Thus, in this era of disruptive digital technology, Thai ethnic groups need to empower themselves to cope with various developments. Open education, in combination with functional literacy and embedded with ICT, is a must for these groups.

The objectives of this research are to:

- i. Study the ethnic girls and women in northern Thailand, in terms of their socio-economic context, as well as functional, language, and ICT literacies;

- ii. Study the functional literacy of ethnic girls and women in northern Thailand, in terms of gender-related aspects and other priorities and demands;
- iii. To study the current situation surrounding the use of mother tongue languages through open education and ICT.

3. Research Method

The participatory action research for development utilised a two-stage qualitative approach. The first stage was a documentary study, followed by a focus group discussion meant for group interviews and observations. The results of the first stage was used to organise a participatory training and workshop for the second stage of the research. The purposive samples involved the following key informants: three ethnic women representing one of the main tribes, and 50 stakeholders from all three tribes (comprising non-formal education teachers, development workers, staff of the local administrative bureau, and community leaders).

4. Findings

4.1. Contexts of the ethnic girls and women in Nan Province, northern Thailand: Socioeconomics, language, and ICT literacy

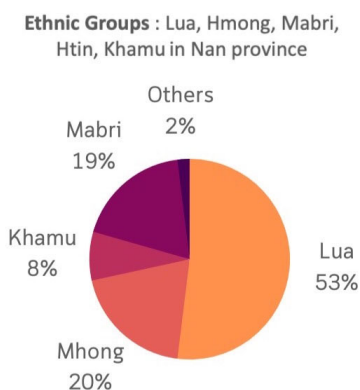


Figure 1. Ethnic groups of girls and women in Nan Province (Kanyaporn, 2018)

Case 1: Tam is an 18-year-old Lua ethnic female from Ban Tanoi village. She was born in a two-children family in Phuka Sub-District, Pua District, National Forest Park. Her family engages in rice and corn highland farming. Tam is a ninth-grade graduate from a local public school. She was forced to leave school as she lacked financial means, but she got a chance to study again at The Silver Handmade Group at a vocational training centre. She manages to save around THB6,000 per year, and her mother prefers to let her work in the local village. Currently, Tam is working with her family in the village and has just married.

Functional literacy: Tam considers herself a leader for women empowerment through the functional literacy project because she is very active and aware of change as a way to improve her and her family's lives. She aspires to improve occupational skills, become self-empowered, as well as gain better opportunities. Importantly, she desires to share all her experiences, knowledge and skills with her friends and others who share similar needs and problems.

Language literacy: Tam expressed her language literacy through the following statements: "My Thai language is quite okay now, then I plan to improve my other language abilities, especially English because I think that being able to communicate in English with tourists is necessary if I want to become a tour guide. So, my future career might involve becoming a guide in my community",

and “In terms of Thai language, I usually help the teacher who teaches us at the community hall. This has really accelerated my Thai language learning.”

ICT literacy: Tam is able to use social media, including Facebook, Line and YouTube. She loves watching Thai movies on YouTube. She stated, “If I can get better education, I want to be a nurse, or maybe open my own shop to sell handmade silver items”.

Case 2: Mam is an 18-year-old Lua ethnic female from Ban Tanoi village. She was born in a three-children family in PhuKa Sub-District, Pua District, National Forest Park. Mam has never attended any schooling, nor has she participated in any training although these are available and have been offered to her and her family. Mam’s main issue is that she is illiterate, i.e., she cannot read, write, or even count. She states that she only uses her own language. Her family needs her to participate in farming activities. She was married at 15 and currently has one son. She lives with parents and husband, who are rice and corn farmers.

Functional literacy: Mam is interested in joining the functional literacy project because it appeals to her interests: “I plan to send my son to school even though I have never experienced any schooling before. I believe that education can change our life for the better”.

Language literacy: Even without any schooling, Mam can communicate well in Thai language because she often communicates with visiting local staff, such as health officers, and family planning staff who provide contraceptive pills. She cannot write and was thus unable to fill any form, but she can understand the language: “If I can write in Thai language at the same level that I communicate, I am sure that my family and I can get more benefits and even can protect ourselves, our properties, and our community as a whole”.

ICT literacy: Compared to her other family members, Mam uses the smartphone most of the time. As such, she has become the “family speaker”: “I feel thankful for my smartphone because my husband and mother-in law listen to me and consult me more”. She also states: “Any chance I get to meet anyone who seems to know about ICT, I always ask technical and functional questions, so I can be more ICT-savvy.”

Case3: Nong is a 20-year-old Lua ethnic female from Salai Luang village. She was born in a two-children family. Her family lives in Boklor Nua Sub-District, Boklor District, National Forest Park. Nong completed primary level schooling from the local village school when she was 12 years old. She is the only one in her family who has received education but did not continue studying because her parents asked her to help with farming, as well as a lack of funds and the distance of the school from her home. She married when she was 19 and now has one daughter. Her family’s income comes entirely from natural farming.

Functional literacy: Nong never thinks about attending any education or training, she has only been trained twice by government officers. Her interest in joining the functional literacy project is due to encouragement from friends: “I am very happy and relaxed about joining the functional literacy project because it will allow me to step away from my family life occasionally to see more of the outside world, use my mother tongue language, and listen to my own and others’ stories from both my own community and others”.

Language Literacy: Nong is very relaxed about using her own mother tongue language but she is also open and curious about using Thai and English languages: “Thai and English languages are more and more important now, because we must use them if we want to sell our farm products directly without paying any middle man.” She also says, “As for English, we want to earn more from the tourists who visit our community. Many come to use our homestays, drink our coffee, and eat our food”.

ICT literacy: Nong regularly uses a smartphone for many purposes, including communicating, coordinating, negotiating on farm products with relevant stakeholders, and also connecting with her

family members: “Whenever there is breaking news, my husband will ask me to search for them so that I could warn other family members about important events such as floods, forest flooding or fires, droughts, irrigation issues, storms, and epidemics”.

4.2. Functional literacy contexts on gender-related aspects and other priorities and demands

4.2.1. Functional literacy contexts on gender-related aspects

Content analysis from the focus group discussion is shown in Table 1.

Table 1. Functional literacy skills in relation to roles in the family: gender-related aspects

Rank	Functional literacy skills (Gender-related aspects)	Score for role in family (%)	Explanation
1	Thai language literacy	67%	Thai language is considered by the ethnic groups as the gateway to all opportunities
2	Can earn more income	65%	If girls or women can help the family earn more income, they would be better acknowledged by the male as well as other family members
3	Can produce more farm products	63%	Can help and contribute to farm production
4	Can do family planning and management	62%	To be the leader in the family (management, planning, saving, resources, etc.)
5	Can communicate well with people outside the village	61%	For various purposes, such as tourism and trading
6	Can calculate well	60%	Calculating skill is one of the key factors to successfully selling and negotiating for farm products
7	Can use ICT	55%	ICT is becoming more used among ethnic groups, such as for communication, marketing, coordination, information, etc.
8	Can use English language	52%	For tourism and other purposes
9	Can use farm technology	51%	For more effective farm production
10	Can use Chinese language	51%	For tourism and trading purposes

4.2.2. Functional literacy contexts on other priorities and demands

Content analysis from the focus group discussion is shown in Table 2.

Table 2. Functional literacy based on other priorities and demands

Rank	Priorities and demands of functional literacy	Score for priorities (%)	Explanation
1	Smart farming	66%	Farming is their main source of income, so effective farming can yield more products and better earnings
2	Nutrition	65%	Most girls and women marry young, so they want to learn the “how-to” of caring for themselves and their family members
3	Sanitation	62%	Same as above (Nutrition)
4	Thai language	60%	Thai language is prioritised, followed by English and Chinese languages
5	Entrepreneurship	59%	Aim to have better marketing skills for their farms
6	Extra job/income	56%	Aim to earn more income for the family
7	Using ICT for communication and others	53%	To have better access, and address deficiencies in communication, information, benefits & welfare, etc.
8	Using innovation for farm/job production	52%	To improve productivity in their farm

Rank	Priorities and demands of functional literacy	Score for priorities (%)	Explanation
9	Calculation, accounting, numeracy skills	51%	To market their farm products
10	More productive skills	50%	To improve marketing, add value to and improve design of local products

4.3. The contexts of mother tongue language use facilitated by open education and ICT

4.3.1. The contexts of mother tongue language use

This is an overview of the conditions and processes involving mother tongue language use among ethnic groups to empower girls and women in passing down local wisdom, heritage, and crafts based on their own creativity and readiness. The content was analysed based on gender-related aspects as indicated in the following picture.

Picture 1 Reflecting a tribal scenario involving family, gender, community, beliefs, religion, and environment.

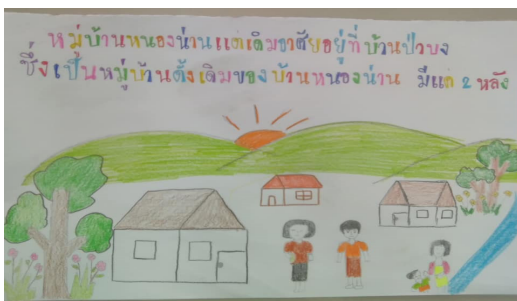


Table 3. Content analysis from storytelling involving the ethnic girls and women in Nan Province (reflection of community, tribe, gender, local wisdom, mother tongue, and leadership)

The ethnic girls and women reflections in their storytelling	Yes	No	Other/ More reasons
1. Does the story portray gender balance?	5	1	-
2. Are girls/women the main characters of the story?	1	5	-
3. Are men the main characters of the story?	6	-	-
4. Does the story give value to women in the family/community?	4	2	-
5. Does the story give value to men in the family/community?	5	1	-
6. Does the story reflect all genders, races, social statuses, the marginalised, etc.?	2	4	-
7. Does the story reflect gender balance in the workforce/among working people?	1	5	-

From Table 3, it is evident that storytelling involving ethnic girls and women in Nan Province reflects current contexts of their daily lives and communities. This focuses more on gender analysis, thus the families of ethnic groups appear to be more male-dominated, although the gender balance seems to be improving.

4.3.2. Open education and ICT for functional literacy curriculum

This concerns the priorities and demands of ethnic girls and women in Nan Province.

- i. **Functional literacy curriculum design** using open education and ICT serves the priorities and demands of ethnic girls and women in Nan Province, northern Thailand.

Table 4. Tailor-made and MOOC-based functional literacy curriculum to serve priorities and demands of ethnic girls and women in Nan Province, northern Thailand

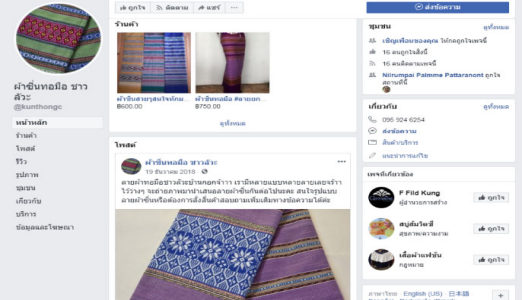
Module	MOOC-based Functional Literacy Curriculum
1	Gender Sensitisation and Education <ul style="list-style-type: none"> - Gender and gender status - Gender balance and workforce - Gender and educational opportunities - Gender power for mutual support - Women participation in the gender context
2	Self-Identity and Self-Sufficiency <ul style="list-style-type: none"> - Women identity analysis and cultural calendar (annual tribal living activities) - How to make a cultural calendar - Gender analysis - Calculation
3	Mother Tongue-Based Learning <ul style="list-style-type: none"> - Definition and importance of mother tongue language - Development of written mother tongue language - Educational assessment using the mother tongue language - How to develop storytelling using the mother tongue language via the “Big Book” (hand writing & drawing with tribal lifestyle contents customized by the mother tongue language)
4	Information Technology <ul style="list-style-type: none"> - Fundamentals of ICT (especially information system) - “Must-know” applications for professional work - How to create creative media based on local wisdom
5	Creative Economy by Ethnic Group <ul style="list-style-type: none"> - Alternative solution: independent creative economy - Learning from your idol/role model - Experience sharing

ii. **Functional literacy to access more online channels: marketing and advertising of community products for better income generation.**

ICT solutions are used to train ethnic girls and women to develop their own ideas and use readily existing resources to expand their market. ICT has been used as a tool to integrate local wisdom, creativity, mother tongue use, and their own resource management.

- **Transition from physical shops to e-shops**, which are created through their own creativity and existing resources, as shown in Table 5.

Table 5. Example of e-shop or online marketing created by the ethnic girls and women

Name of e-Shop	e-Shop Banner and Identity	Link of e-Shop
Phasintormua Chao Lau By Lua Tribe (Indigenous handmade textile)		https://www.facebook.com/kunthongc/

- **Transition from written and oral mother tongue to digital storytelling** through their own creativity and existing local wisdom and resources.

Storytelling combines and integrates all of the following aspects: local wisdom, mother tongue, tribal lifestyle, identity and pride. ICT is then used as a tool to transfer the storytelling from analogue to online or digital channels, which aims to make the storytelling more visible and sustainable.

5. Discussion

5.1 Contexts of the ethnic girls and women in Nan Province, northern Thailand

Socio-economically, the ethnic girls and women are generally mountainous farmers. The average marriage age is 15-20 years, and they generally gain primary education from nearby local schools and if permitted by their families, they may continue to obtain high school education from non-formal means accessible in their community.

In terms of functional literacy, most of the ethnic girls and women show interest in participating in the functional literacy project to improve their living conditions as a whole, evidenced by the following statements: “I need better chances in life by improving occupational skills”, and “If I can get better education, I want to be a nurse, or open my own shop selling handmade silver items.”

In terms of language literacy, Thai language is considered essential, evidenced by this statement: “Thai language is a must because if we can use it, it would be easier for us to trade, negotiate, and coordinate with others”.

Finally, in terms of ICT literacy, the following statements demonstrate their use and understanding of modern applications: “The smartphone is everything to us now, because we can communicate more freely than before because the device has become more affordable and accessible”, “Social media tools like Facebook, Line and YouTube are very important to us because we can also learn Thai language using them too”, and “Being able to use the smartphone to access urgent or important news really adds value to me. My husband and other family members listen to me more and even ask me to search for more information, so I am so happy and feel empowered”.

5.2 Contexts of mother tongue language facilitated by open education and ICT

All ethnic groups use their mother tongue languages to pass down local wisdom, heritage, and crafts based on their own creativity and readiness. However, the storytelling analysis found that the ethnic families continue to be more male-dominated, although gender balance seems to be improving.

Using open education and ICT, a functional literacy curriculum that serves the priorities and demands of ethnic girls and women should emphasise gender sensitisation, identity awareness, mother tongue use, and creative economy. In terms of functional literacy itself, open education and ICT can give them better access to more online channels to promote their products as well as generate better income, which can be very effective and quickly learnt by the ethnic girls and women. They can use ICT to develop their own ideas and use existing resources to expand their market. They can use ICT to transfer sales of their products from physical to e-shops based on their own creativity and existing resources. They can also use ICT to pass down their written and oral mother tongue-based storytelling to digital channels to preserve and promote their ethnic characteristics, including in these following aspects: local wisdom, mother tongue, tribal lifestyle, identity and pride.

6. Conclusion

The ethnic girls and women in Nan Province, northern Thailand are socio-economically mountainous farmers with the average marriage age of 15-20 years. Most of them manage to obtain primary education.

Functional literacy is considered important to earn a better living; while in terms of language literacy, Thai language is considered a must. In terms of ICT literacy, the smartphone is considered a fundamental all-purpose tool. In the context of gender parity, gender-related priorities and demands are mostly uneven in all dimensions, but this can be improved if the girls and women gain better access to further develop their functional literacy. The top three demands under functional literacy are smart farming, nutrition, and Thai language, respectively.

In terms of mother tongue language use facilitated by open education and ICT, mother tongue languages are still being used to pass down local wisdom, heritage, and crafts based on their own creativity and readiness while a functional literacy curriculum using open education and ICT should emphasise identity awareness, mother tongue use, and creative economy. Functional literacy will give these girls and women access to more online channels to market their products, as most of them can use ICT effectively to develop their own ideas and use existing resources to earn better income. They can use ICT to transfer the sales of their products from physical to online platforms based on their own creativity and existing resources. They can also use ICT to pass down written and oral mother-tongue storytelling to digital channels to preserve and promote their ethnic characteristics, including in these following aspects: local wisdom, mother tongue, tribal lifestyle, identity and pride.

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