

UNIVERSITY OF SZEGED
DOCTORAL SCHOOL OF EDUCATION

WIN PHYU THWE

**INVESTIGATING LIFELONG LEARNING COMPETENCIES OF
TEACHER TRAINERS IN MYANMAR**

DOCTORAL DISSERTATION SUMMARY

SUPERVISOR:

DR. HABIL ANIKÓ KÁLMÁN



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INTRODUCTION

Significance of this study

Reforms have been implemented across the board in Myanmar's educational system. Improving teacher quality has become crucial, and the Ministry of Education has organized programs for professional development with the assistance of regional and international organizations. The need for qualified teachers in Myanmar who have a teaching certificate, and evidence of subject area proficiency is one of the biggest difficulties facing teacher education. To be able to generate qualified teachers, it is also crucial to support teacher trainers' lifelong learning first.

In Myanmar, research has been conducted on teacher professional development (Borg et al., 2018; Htut et al., 2022; Keczer & Myint Lay, 2020; Thant Sin, 2021; Thwe, W. P., & Kálmán, 2022). In international research studies, professional development of teachers is viewed as a continuous process that underlies the lifelong learning concept. There are considerable related researches concerning lifelong learning in teacher education (Buza et al., 2010; Karataş et al., 2021; Matsumoto-Royo et al., 2022; Simmons & Walker, 2013; Yildiz-Durak et al., 2020). In this direction, we are interested in how we can transform professional development into lifelong learning in Myanmar. As of yet, neither a strategic plan nor scientific research can guide the stakeholders in Myanmar to implement lifelong learning. This research will explore the perceptions of teacher trainers on lifelong learning and their perceived level of lifelong learning competencies.

Toward this goal, a literature review of lifelong learning in educational settings was conducted. Research gaps identified in the literature review led to the overall research questions for this study, which are:

1. What are the perceptions of teacher trainers of the concept of lifelong learning?
2. Are there any significant differences in the lifelong learning competencies of teacher trainers according to their background factors?
3. What are the factors that promote or hinder the lifelong learning competencies of teacher trainers?
4. What learning strategies do teacher trainers use to improve their teacher competencies?
5. How can lifelong learning of teacher trainers influence their new learning community?

Methodology of the study

Of advanced mixed method, the explanatory sequential design (Creswell, 2012; Lund, 2012; Tashakkori et al., 1998) was chosen to investigate the lifelong learning competencies of teacher trainers in a new learning community because quantitative data in the first phase and qualitative data in the second phase will address the research questions better than either type individually.

In the quantitative part, we used three questionnaires: Lifelong Learning Questionnaire, Lifelong Learning Competencies Scale, Teachers' Learning Strategies Questionnaire and the background information about the teacher trainers. They are selected by the simple random sampling technique. Based on the quantitative findings and previous research, the data-gathering and analysis stages of a qualitative phase of study in which semi-structured interview were used to better understand the quantitative first phase results (Creswell, 2012). Purposive sampling was used to select teacher trainers for the interview.

In the data collection process, all the instruments were translated into the Burmese language. With regard to the ethical consideration, I disclosed the study's goal to participants, refrain from dishonest behavior, share information about the researcher's position with them, respect their feelings and opinions, and protect the confidentiality of their data during both stages of the study. Moreover, both instruments utilised in this research are approved by the Institutional Review Board of the Doctoral School of Education, University of Szeged.

LIFELONG LEARNING IN THE EDUCATIONAL SETTING: A SYSTEMATIC LITERATURE REVIEW

The results of this review showed that theoretical papers, such as reports, policy document, and lifelong learning concepts, were generally much more extensive than empirical studies. Despite attempts to formulate new lifelong learning theories and apply existing ones, researchers have yet to develop a strong theory of lifelong learning. This study's concept analysis identified lifelong learning skills; lifelong learning competencies; and formal, nonformal, and informal learning as the most salient concepts.

The review of empirical studies on lifelong learning identified three common trends. These studies examined the relationship between lifelong learning abilities, professional competencies, self-efficacy, and teaching-learning approaches. They also explored factors affecting lifelong learning, such as hierarchical effects, external barriers, and professional learning environments. Demographic factors like gender, age, and education level also influenced lifelong learning. The review identified research gaps in educational research, suggesting further exploration of lifelong learning through new learning communities, advanced techniques, learning styles, strategies, motivation, and educational technology.

With regard to research methods, this study identified only three studies that used mixed methods, indicating an inadequacy in the field. Our examination of instruments revealed different tools that were used to assess the three common research problems. Such an effort may require the application of different data analysis techniques, including content analysis, descriptive analysis, and inferential analysis.

The prior studies, as a result of our review, only interviewed lifelong learning specialists, young adults, and secondary teachers to address their research issues, such as concepts and policies. Indeed, the development of lifelong learning policies or conceptual frameworks would benefit from the involvement of teachers from basic education schools, teacher education institutions, and universities.

Several research problems associated with lifelong learning capabilities involved university students, students and teacher educators. In light of this, it is still important to examine the lifelong learning skills, competencies, and tendencies of all stakeholders in the educational setting. Considering the geographical context, more research must be conducted on the three research trends in lifelong learning in Asia as opposed to Europe. This will strengthen the generalizability of findings to specific target groups such as students, teachers, and teacher trainers in the specific area.

RESULTS AND DISCUSSION

THE LIFELONG LEARNING COMPETENCIES SCALE FOR TEACHER TRAINERS: CREATING AND VALIDATING THE INSTRUMENT IN THE MYANMAR CONTEXT

Reliability

Because the LLLCS has eight factors, the reliability results for each factor are high at the Cronbach's $\alpha = 0.88$ for Literacy competence, $\alpha = 0.88$ for Multilingual competence, $\alpha = 0.87$ for Mathematical competence and competence in science, $\alpha = 0.88$ for Digital competence, $\alpha = 0.87$ for LLC, $\alpha = 0.87$ for Citizenship competence, $\alpha = 0.88$ for Entrepreneurship competence and $\alpha = 0.87$ for Cultural awareness and expression competence, respectively. Consequently, the reliability of the LLLCS as a whole was high, $\alpha = 0.89$.

Validity

Face validity

The LLLCS developed by the researchers was translated into Burmese. Five teacher trainers at education degree colleges acted as representative test takers and rated the questionnaire. These testers reported that each of the items of this questionnaire was understandable, consistent with the teacher training and relevant to the title and purpose. Therefore, it was considered feasible to measure the lifelong learning competencies of teacher trainers with this questionnaire.

Content validity

After the literature review for lifelong learning and review of existing instruments in the field, this instrument was adopted in this study was based on the eight key competencies of the lifelong learning proposed and recommended by the European Commission (Council of the European Union, 2018; European Council, 2006).

Construct validity

Discriminant validity

In this study, the result for the KMO test was 0.89 and the result of the test of sphericity was $P < 0.01$, both indicating appropriateness for factor analysis.

The result of the CFA for LLLCS was obtained with these fit indices and fit measures (Satorra–Bentler chi-square = 381.014; $df = 296$; $p \leq 0.001$; robust CFI = 0.92; robust TLI = 0.91; robust RMSEA = 0.05; and robust SRMR = 0.06). Chi-square divided by the degrees of freedom was less than 5 ($X^2/df < 5$). Robust fit indices were used in our study as mean-adjusted chi-squared statistics (estimator MLM), which provided the correct calculation for the robust fit measures proposed by Brosseau-Liard et al. (2012).

Because discriminant validity is evaluated by the CFA in this study, the CFI and TLI values, which are both greater than 9, demonstrate strong model fit (Hu & Bentler, 1999). Additionally, the RMSEA, whose value is less than .05, shows the excellent model fit (Hu & Bentler, 1999). The scale's SRMR of .06 indicates a reasonable and acceptable model fit (Hu & Bentler, 1999). All the items in each factor have item loadings that are greater than 0.6. Awang (2014) found that the factor loading for each item should be greater than 0.5 for newly generated items and greater than 0.60 for adapted items based on the evident framework. However, special attention should be paid to the suggestions of Marsh et al. (2004), who argued that these model fit indices are only recommendations and should not be viewed as universal truths.

Convergent validity

The convergent validity of a measurement model was assessed by the AVE and CR and factor loading following the guidelines of Fornell and Larcker (1981) and Hair et al (1998). The values of AVE for all factors were less than 0.5, except for the literacy competencies construct, which had an AVE of 0.52 and the learning to learn competencies construct, which had an AVE of 0.57.

AVE evaluates the level of variance between a concept and measurement error, and values above 0.7 are regarded as extremely good, although a level of 0.5 is appropriate. In this study, the AVE values of all factors are less than 0.5, with the exception of two: literacy competence and learning to learn competence. Reliability measured by Cronbach's alpha is more biased than reliability measured by CR. Because of this, CR is also considered. CR levels greater than 0.7 are considered very good. However, if an AVE value is less than 0.5, but the CR is greater than 0.6, the construct's convergent validity is considered acceptable (Fornell & Larcker, 1981). Therefore, LLLCS has excellent convergent validity.

The measurement of construct validity indicates that the internal relationships between function as intended. First, it shows the strongest structural validity, as CFA supports the European framework's eight components of lifelong learning. CFA shows that the factors of LLLCS are literacy competence, multilingual competence, competence in mathematics and science, digital competence, learning to learn competence, citizenship competence, entrepreneurship competence and cultural competence. Second, construct validity can be considered to show the reliable and valid convergence with the assessment of both AVE and CR.

Overall, the findings show that the measure has strong reliability, face validity, content validity and construct validity. These findings indicate that our LLLCS, with eight components and 27 items, is appropriate for use in future research.

QUANTATIVE PHASE

THE REGRESSION MODELS FOR LIFELONG LEARNING COMPETENCIES FOR TEACHER TRAINERS

To predict the LLL competencies of the teacher trainers, all variables, including both personal (gender and age) and professional (education level, regions, and teaching experience) factors, perceptions of LLL, and learning strategies were treated as independent variables, while the LLL competencies are considered the dependent variable. This is our first model of lifelong learning competencies.

Equation 4. 1 First Regression Model for LLLC

$$\text{LLL competencies} = 103 + (0.46 * \text{perception on LLL}) + (0.22 * \text{learning strategies}) - (0.05 * \text{region}) \pm 0.121781$$

To develop the second model, personal factors, such as gender, age, perception of lifelong learning, and learning strategies were considered as independent variables.

Equation 4. 2 Second Regression Model for LLLC

$$\text{LLL competencies} = 93 + (0.46 * \text{perception on LLL}) + (0.22 * \text{learning strategies}) \pm 0.114392$$

For independent variables in the third model, professional factors (education level, region, and teaching experience), perception of lifelong learning, and learning strategies were considered.

Equation 4. 3 Third Regression Model for LLLC

$$\text{LLL competencies} = 108 + (0.46 * \text{perception on LLL}) + (0.22 * \text{learning strategies}) - (0.05 * \text{region}) - (0.01 * \text{experience}) \pm 0.102910 \quad (3)$$

The literature clearly shows a wide range the impact of personal and professional factors, perception of lifelong learning, and learning strategies in relation to LLL competencies. In general, all of our regression models indicated that perceptions regarding lifelong learning and learning strategies are significant predictors of lifelong learning competencies. All three of our regression models indicated that lifelong learning competencies are not related to the personal factors such as gender and age.

When professional factors are taken into account, lifelong learning competencies also depend on the region, according to our first and third models. In addition to region, the third model of this study includes teaching services as a factor that can predict lifelong learning competencies.

After assessing these three models, we compared using computing their VIFs and ANOVA analysis to determine the best model. The values of VIFs showed that there was no multicollinearity among the variables of any model. The ANOVA could not determine

the best model among the three. When the standard error of regression was also taken into account, the third model was shown to have the lowest error. These findings show the third model with region, teaching experience, perception of lifelong learning, and learning strategies may be the best regression model for predicting LLL competencies in teacher trainers. In other words, lifelong learning competencies are influenced by the region, teaching experience, perception on LLL, and learning strategies.

Using the third model, we discuss investigate possible possibilities that have been influenced by the context of the study, such that the relationship between region, year of teaching experience, and LLL competencies of teacher trainers are reciprocal factors. In certain regions, educational degree colleges have only been operating in the last few years and have inadequate facilities and resources, which may impact those who work there.

Our regression models indicate that it would be beneficial to provide teacher trainers with training activities to raise their awareness of lifelong learning. Our best regression model suggests that all of these strategies should be implemented with care, such that experienced service teacher trainers from all regions be incorporated. Higher lifelong learning competencies in teacher trainers provide superior opportunities for student teachers at education degree colleges to gain those competencies. These student teachers will certainly become basic education teachers, and they will need to produce young students with the updated competencies needed to continue to stay on top of the world's changing trends.

RELATIONS AMONG THE PERCEPTION OF LIFELONG LEARNING, LIFELONG LEARNING COMPETENCIES, AND LEARNIG STRATEGIES OF TEACHER TRAINERS IN MYANMAR

Teacher trainers are highly aware of the importance of lifelong learning and exhibit high levels of lifelong learning competencies. They also employ learning strategies to promote lifelong learning. They typically attained a high degree of competency in each of the lifelong learning competencies. They, in particular, have the highest degree of competency in learning how to learn but the lowest level in math and science.

This study also compared the three variables: lifelong learning perception, lifelong learning competencies and learning strategies, and each competency of lifelong learning competencies on the basis on their background factors. One of the findings illustrated that the three variables did not significantly different according to gender. In other words, gender is not vital in relation to three variables. Gender cannot affect each competency of the lifelong learning competencies as well.

The next finding is that no differences existed in terms of level of education and teaching tenure in relation to the three variables. Their differences in each dimension of lifelong learning competencies are not also statistically obvious in terms of education level. Except for citizenship competence, teacher trainers with over 15 years' experience in teaching have the lowest scores in seven lifelong learning competencies. On the other hand, only digital competence can statistically differ while other seven lifelong learning competencies were not significantly different according to their teaching services. In light of the outcomes of the current study, differences may exist among the three variables and each competency of lifelong learning competencies in terms of age and region of the education degree colleges. In addition, teacher trainers aged 41–50 years have obtained a better perception of lifelong learning, high perceived levels of competencies, and learning strategies compared with the other age groups. Teacher trainers aged 20–30 years also possess the same level of lifelong learning competencies as those who are older. However, they are not statistically significant. It is important to note that age does exert a significant influence on each lifelong learning competency, even though it may not exert the same amount of influence on developing lifelong learning competencies. Based on the ANOVA and the post-host tests, there are different

perceived levels in the literacy competence, digital competence and citizenship competence among the age groups. In particular, teacher trainers from the education degree colleges located in the upper regions of Myanmar exhibit high levels of awareness of lifelong learning and lifelong learning competencies and apply appropriate learning strategies better than those from the lower regions. In terms of regions where Education degree colleges situated, our study found that there are significant differences in multilingual competence, digital competence, learning to learn competence, entrepreneurship competence, citizenship competence and cultural awareness competence. Teacher trainers from the Education Degree Colleges in the upper regions of Myanmar performed better than those in the lower regions in those competencies related to lifelong learning. Meanwhile, there are no statistical differences between the regions in literacy competency or mathematical and science competency.

Our findings indicate that no competence in lifelong learning can differ based on background characteristics such as gender and education level. Multilingual competence, digital competence, learning to learn competence, citizenship competence, entrepreneurship competence, and cultural awareness competence can be different only by region of the education degree colleges, but literacy, mathematics, and science competence cannot differ. Literacy competence, digital competence and citizenship competence can differ by the age while teaching service can influence only on the digital competence.

QUALITATIVE PHASE

INFLUENCING FACTORS ON LIFELONG LEARNING COMPETENCIES OF TEACHER TRAINERS: A QUALITATIVE STUDY

Understanding on Lifelong Learning and Lifelong Learning Competencies

Teacher trainers found that everything is changing at an incredible rate in the modern time, and teaching is not an exception. Therefore, they understood lifelong learning to be keeping current with contemporary developments. Through reflection, everyone learns consciously and unconsciously throughout their lives and applies what they have learned and where they should apply it. The majority of their perceptions about lifelong learning come from their teaching profession.

All of the teacher trainers view that lifelong learning of a person can be measured by communicating with them and gauging their professional performance and attitude while only one teacher trainer respond that it is impossible to assess the lifelong learning of a person. It is supposed that none of them recognise that eight key competencies can be used to determine whether or not a person practices lifelong learning.

Then, they are explained about eight key competencies and asked to assess themselves which are their highest and lowest competencies. The figure 6.1 showed that their perceptions on highest and lowest competencies of lifelong learning.

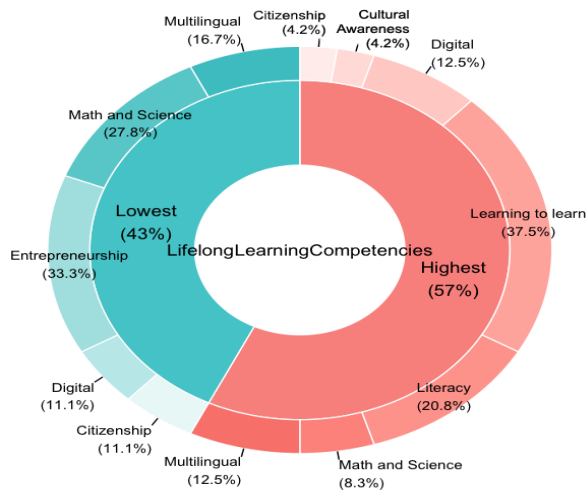


Figure 6. 1 Highest and lowest competencies of lifelong learning of teacher trainers
Factors that foster or hide each lifelong learning competency

Their opinions on the reason for their highest and lowest level in their various competencies were continually sought. Most of the teacher trainers believes that no gender, age, region of the Education Degree Colleges, education level and teaching service can make their lifelong learning competencies higher and lower.

In addition to the background factors listed above, other factors contributed to determining each competency of lifelong learning competencies. They revealed fostering factors by focusing on their highest competences, which include learning to learn, literacy, multilingual, and digital.

The factors that can limit their scientific and mathematical competency, as well as their entrepreneurial and multilingual competency, were additionally highlighted by the teacher trainers. The majority of them stated that their lower level in these abilities was caused by a lack of confidence, interest, awareness, and drive. Another consideration is that their competence levels may not be high if they do not believe they will have the opportunity to use these skills in their current position or if these competencies have no connection to the teaching profession.

New learning Community

All teacher trainers indicated that the global pandemic had drastically changed their learning community. However, their perspectives and experiences, particularly with regard to the lifelong learning competencies, diverge. Most of the teacher trainers claimed that their multilingual and digital competencies are improved after the pandemic.

They had extra time to get acquainted with new digital tools and software because the schools were closed so they could stay home and participate in the online training. The analysis of interview data revealed that learning community of the teacher trainers become new after the pandemic. Their lifelong learning capacities, particularly in the areas of digital competence and multilingual competence, are affected both favorably and unfavorably by this new learning community. Nevertheless, they still prefer in person learning.

Learning Strategies and Teaching Competencies

According to the findings of our quantitative studies, learning strategies of teacher trainers applied to improve teacher competencies are associated with their lifelong learning competencies. But it did not show that which specific learning strategies they are practicing. This interview data show that how and which learning strategies the teacher trainers use to

improve the teaching competencies. To gain teaching competencies, most of them used self-regulated learning strategies.

All the teacher trainers believed that teaching competencies are related with the lifelong learning competencies. Because they reflected that their competencies in lifelong learning are also improved while they are studying to improve teaching competencies. However, each competence improved vary individually. Some teacher trainers believed that literacy competence, multilingual competence and cultural awareness competence are significantly improved. They believed their literacy and multilingual skills were improving since they continue to learn in Burmese and use English text books and teacher manuals. Since the new curriculum is developed based on the diverse cultures, their cultural competence also becomes higher. On the other hand, as they learn to apply the new teaching method and create the teaching learning resources, they believe that their entrepreneurial competence is also obviously increased. When the new curriculum provides them a chance to apply their digital skills into their teaching practice, their digital competence is also sharpened. One of the teacher trainers feel that her student teachers are better than her in digital competence.

Influencing Factors on Lifelong Learning Competencies of Teacher Trainers

Two main themes emerged from all the responses of the teacher trainers, each of which highlighted the influencing factors on lifelong learning competencies. They are illustrated as table 6.1. These two themes revealing the effects of internal and external variables on teacher trainers' lifelong learning competencies provides useful data for improving each competence in the future.

Table 6. 1 Internal and external factors influencing on lifelong learning competencies

Internal factors	External factors
Confidence	Promotion
Interest	Chance to apply in the teaching
Self-regulated learning	Profession
Attitude and performance	First teacher
Intelligence	Family background
Awareness	Workload
Laziness	Time management
Loving profession	Previous job experience
Health	Opportunities to learn
Afraid	Training
Practice and Habits	Pre-and post-assessment
Genetics	Collaborative learning
Enthusiasm	New curriculum
	Challenges
	Supportive learning community
	Shortage of teacher trainers

In spite of the fact that our interview was designed to emphasize their professional competencies and development with lifelong learning competencies, a few teacher trainers expressed personal development as well.

CONCLUSION

General Limitations and Directions for future studies

The whole research has limitations that can be addressed in future research. Following is a list of the main limitations and recommended future studies of each study.

The literature review may have missed a number of empirical research because we only included open-access articles that were indexed in Scopus, WoS, or ProQuest. It did not mention in depth both the specifics of the research tools and the outcomes of prior empirical studies. Future lifelong learning systematic reviews and meta-analyses may incorporate content from other databases, examine research tools' background and psychometrics, and consider empirical analysis findings.

With a small sample of teacher trainers, the main instrument, LLLCS, was created. There should be more research done with more participants, including pre-service teachers and in-service teachers from all levels of the educational system. Despite being a reliable and acceptable tool, it contains generalized and translated items regarding lifelong learning competencies. With regard to the eight domains that the European Commission has adopted, a few changes must be taken into thought when translating LLLCS into different situations. Future LLLCS should be evaluated using additional validity measures, such as criteria concurrent validity, criterion predictive validity, and criterion postdictive validity.

Because there were few studies that looked at the lifelong learning competencies of teacher trainers, the results of the individual empirical studies conducted for this research were not well discussed or compared with participants from earlier studies. This may have led to some variations in interpretation between samples. Each empirical quantitative study considered only the relationships between three research variables. Future research will be able to look at how each competency of lifelong learning competencies is impacted by perceptions of lifelong learning and/or learning strategies.

Regression models, the formal analysis of this research, and other studies all produced contradictory results, therefore the qualitative study looked into additional variables that can support or undermine LLL abilities. The interview questions, however, cannot serve as a thorough interview protocol for the contexts abroad because they were created using the findings of earlier quantitative investigations. Due to the application of the purposive sampling approach, the impacting factors on the lifelong learning competencies are solely dependent on the opinions of the chosen respondents. Other internal and external factors that affect lifelong learning competencies might exist but were not discovered in this research. As therefore, this study recommends for further research into the potential influences on teacher trainers' competencies for lifelong learning in both Myanmar-specific and global contexts.

General Educational Implications

This study remains important to the Myanmar context, as well as to global contexts, despite the aforementioned limitations. A number of theoretical and methodological contributions have been made by this study.

Theoretical Implications

A theoretical contribution was made to the area of education science and lifelong learning through this study. The literature review for this study was the first systematic one to identify in educational research concepts, theories, trends, and research methods related to lifelong learning. Furthermore, this is the first study in Myanmar to examine the lifelong learning competencies of teacher trainers. Among the few studies on teacher education that use teacher trainers rather than student teachers, this is also one of the few studies involving teacher trainers.

In addition, it extends previous findings by demonstrating that lifelong learning competencies are associated with perceptions of lifelong learning and learning strategies. A feasible policy to implement lifelong learning competencies in Myanmar's formal and non-formal education sectors may be established with the contribution of this research.

Methodological Implications

The systematic literature review of this research is the first one which follows the PRISMA 2020 in the lifelong learning research area. The main instrument, the Lifelong

Learning Competency Scale (LLCS), is also the first research tool that is both theoretically standardised and complies with standardised psychometrics. LLCS is the initial step in developing an excellent instrument for lifelong learning research. This study indicates the necessity of designing tests to evaluate the levels of lifetime learning competencies, despite the fact that it is not a test that truly assesses lifelong learning competency.

It filled the knowledge gaps that were left by the paucity of empirical research in the Asian context. Additionally, it is one of the few empirical studies that employed mixed methods research. It is also one of the few studies that looked at each lifelong learning competency individually.

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