TEACHERS' LIFELONG LEARNING COMPETENCIES AND FORMATIVE ASSESSMENT PRACTICES

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Abstract

The main purpose of this study is to investigate the effect of lifelong learning competencies on formative assessment practices among teachers. The quantitative research design and descriptive survey method were used in this study. A total of 434 teachers from Yangon, Tanintharyi and Magway Regions participated in this study. The participants were selected by using random sampling technique. As the research instruments, teachers' lifelong learning competencies (LLLCs) questionnaire (Hursen, 2011) and teachers' formative assessment practices (FAP) questionnaire (DeVellis, 2012) were used. According to the result of descriptive statistics, it can be said that teachers' lifelong learning competencies and teachers' formative assessment practices in this study were satisfactory. Next, the results of ANOVA revealed that there were significant differences in teachers' lifelong learning competencies by educational qualification but not found in teaching experience, age and designation. Furthermore, there were also significant differences in teachers' formative assessment practices (FAP) by teaching experience, age, but not found in education qualification and designation. According to multiple regression analyses, approximately 60% of the variance in formative assessment practices can be explained by lifelong learning competencies. Therefore, the findings of this study will be benefitted for teachers, teacher educators, principals, policymakers and administrators to have a deeper understanding of the effect of teachers' lifelong learning competencies on formative assessment practices while considering how to improve productivity and education systems.

Keywords: Lifelong learning, Lifelong learning competencies, Formative assessment

Introduction

Every individual has different education needs towards either in his/her areas of interests, professional or intellectual development or different needs in his/her life cycle from birth to death. In addition to this, the concept of education with the changing and developing world is putting forward a necessity named as lifelong learning. Lifelong learning approach is a process containing a fast change for the individual and in profession and technical processes, it adds competencies to the individual in different areas during the life cycle. Holmes (2002) has pointed out that lifelong learning is a discipline and an approach, it contains individual development processes plan. According to Crowther. et al., (2004), a lifelong learning individual has a continuous aspiration for learning and the responsibility for his/her own learning. The individual should be equipped with the basic information and skills in order to better understand and should be able to render the learning process. Without these skills, either the possibility of learning decreases; or one can learn less with more effort (Conford, 2002).

Teachers were tasked with a lot of training and other forms of professional development to get the lifelong learning competencies, which also included advancing skills in using formative assessment (Osmani, 2011). In most cases, teachers were trained and have positive attitudes, and not only towards formative assessment but also towards other innovations. Besides, formative assessment allows students to practice skills or test knowledge without the pressures associated with grades. Formative assessment with appropriate feedback is the most powerful moderator in

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the enhancement of achievement (Hattie & Temperly, 2007). The formative assessment that would help students to progress in lifelong learning as independent of teachers (Bell & Cowie, 2001).

To sum up, within the last few years of the twenty first century, the renewed interest in formative assessment has been matched with curricular reforms as well as the development of cognitive psychology (Clarke, 2001). Formative assessment helps teachers identify the current state of learners' knowledge and skills; make changes in instruction so that students meet with success; create appropriate lessons, activities, and groupings; and inform students about their progress to help them set goals (Ainsworth & Viegut, 2006, p. 23). According to the Myanmar Educational Law (2014), the basic education curriculums have been gradually changed one or more grades starting from 2016-2017 Academic Year. Therefore, the teachers should be trained to apply various assessments including formative assessment instead of using the traditional assessment method. In other words, as the teachers are studying as lifelong learners, they need to fulfill the knowledge, skill and attitudes of formative assessment practices.

Purpose of the Study

The main aim of the study is to investigate the effect of lifelong learning competencies (LLLCs) on formative assessment practices (FAP) among teachers.

The Specific Objectives

1. To determine the differences in competencies of teachers towards the lifelong learning competencies (LLCs) with regard to region, educational qualification, teaching experience, and age.
2. To study the differences of teachers' formative assessment practices (FAP) with to region, educational qualification, teaching experience, and age.
3. To explore the relationship between teachers' lifelong learning competencies (LLCs) and formative assessment practices (FAP).
4. To examine whether teachers' lifelong learning competencies (LLCs) predict formative assessment practices (FAP).

Definitions of Key Terms

Lifelong learning. Lifelong learning, is defined as all of the activities of learning from birth to death, which can be formal, pervasive and informal lifelong learning and has a comprehensive and visionary structure (Preece, 2013).

Lifelong learning competencies. Lifelong learning competencies (LLC)**,** is called in the combined trio of attitudes, skills and information (Hursen, 2011).

Formative assessment. Formative assessment, is a planned process in which assessment-elicited evidence of students' status is used by teachers to adjust their ongoing instructional procedures or by students to adjust their current learning tactics (Popham, 2008).

Review of Related Literature

In twenty-first century, those individuals who do not practice lifelong learning will not find work; those organizations which do not become learning organizations will not survive. The development of companies, schools, colleges and universities will be essential rather than desirable, if they are to survive; that the challenge for individuals is to achieve and maintain their

own employability through lifelong learning, that is the key to successful learning is motivation, which will not be achieved by means of tight centralized control; educational effectiveness outlines a conceptual framework with teachers at its center; there is a positive correlation between the results of students and teacher quality, which is greatly affected by teachers' ability to pursue lifelong learning (Caena, 2011). So pursuing lifelong learning is one of the active efforts to master the theory of teaching and learning.

Formative assessment is well believed to be productive in optimizing teaching practice in ways that support student learning. In order to be successful with formative assessment, teachers need an understanding of how students learn, a strong foundation in whatever content domains they are teaching, and knowledge of how students develop in those domains (learning trajectories), as well as familiarity with the appropriate academic standards and how to map them to learning goals and performance criteria (Heritage, 2010). Lifelong learning competencies on formative assessment is situated in this bigger context, and to be effective it needs to raise educators' awareness of the importance of this context and sometimes, perhaps often, build needed expertise in all of those areas. For this reason, those conducting lifelong learning competencies (LLC) need considerable expertise in all the areas in which teachers need the relevant professional knowledge.

Method

Sampling

The participants of this study were teachers from Yangon, Tanintharyi and Magway Regions in Myanmar. The number of participants was 434 teachers. The sample was chosen by using random sampling technique.

Research Method.

The design and method used in this study were quantitative research design and descriptive survey method

Research Instrumentation

Lifelong learning competencies questionnaire. The key instrument used to measure the lifelong learning competencies of teachers. was Lifelong Learning Competencies (LLLCs) questionnaire developed by Hursen (2011). LLLCs was composed of six subscales with 47 items. The scales of items in the questionnaire were five-point Likert-scales. The internal consistency was 0.941 for the whole scale.

The formative assessment practices questionnaire. The instrument used to measure formative assessment practices of teachers was developed by DeVellis (2012). The instrument used to measure formative assessment practices of teachers was composed of seven subscales involving of 40 items. The scales of items in the questionnaire were also five-point Likert-scales. The internal consistency for the whole scale was 0.922.

Data Collection.

As the establishment of the rapport with the participants, it took a few seconds to explain the purpose and importance of their participation and assurance of confidentiality of their responses Then, the questionnaires were distributed and the participants were asked to complete all items in the questionnaires. On average, the participants spent about thirty minutes to

complete all items. All of the participants' responses were gathered by survey method during September, 2021.

Data Analysis and Findings

An Analysis of Teachers' Lifelong Learning Competencies

As shown in Table 1, the mean and standard deviation of teachers' lifelong learning competencies were 184 (78.29%) and 15.77 respectively. Since, it can be seen that teachers' lifelong learning competencies was satisfactory in this study because the mean percentage of teachers' lifelong learning competencies was 78.29 and their mean values are higher than theorical mean values.

Next, among the six subscales, the mean score of self-management competencies of teacher was the highest and that of competencies of decision-making was the lowest. Hence, it can be interpreted that though the teachers have the high ability of management and control in the situation which they faced every day, they have less opportunity for decision making.

Table 1 Descriptive Statistics of Teachers' Lifelong Learning Competencies

Subscales	*N*	Mean	Mean%	*SD*
Self-management Competencies	434	43.60	79.27%	4.02
Competencies of Learning how to Learn	434	47.42	79.03%	4.80
Competencies of Initiative and Entrepreneurship	434	39.42	78.84%	3.61
Competencies of Acquiring Information	434	22.70	75.67%	3.18
Digital Competencies	434	23.43	78.10%	3.12
Competencies of Decision-making	434	7.42	74.20%	1.27
Total Lifelong Learning Competencies	434	184	78.29%	15.77

Comparison of Teachers' Lifelong Learning Competencies by Region

Although there were six subscales in lifelong learning competencies, only the significance results of subscales in ANOVA were shown in table 2. ANOVA results show that there were significant differences in competencies of acquiring information, digital competencies, competencies of decision-making (see Table 2).

Table 2 ANOVA Results of Each Subscale and Total Lifelong Learning Competencies by Region

Subscales	Region	*N*	Mean	*SD*	*F*	*p*
Competencies of Acquiring Information	Yangon	158	23.31	3.84	6.65**	0.001
	Tanintharyi	102	22.84	3.12		
	Magway	174	22.06	3.61		
Digital Competencies	Yangon	158	24.01	3.15	7.39**	0.001
	Tanintharyi	102	23.7	3.59		
	Magway	174	22.75	2.83		
Competencies of	Yangon	158	7.49	3.18	4.56*	0.011

Subscales	Region	*N*	Mean	*SD*	*F*	*p*
Decision-making	Tanintharyi	102	7.10	3.30		
	Magway	174	7.53	3.64		
Total Lifelong Learning Competencies	Yangon	158	185.53	2.42	1.86	0.190
	Tanintharyi	102	184.35	3.11		
	Magway	174	182.40	1.17		

Note. * Mean difference is significant at the 0.05 level.
** Mean difference is significant at the 0.001 level.

The result of Tukey HSD multiple comparison indicated that competencies of acquiring information of teacher from Yangon region was higher than that of teachers from Magway region. In digital competencies, teachers from Yangon and Tanintharyi regions were higher than that of Magway region. In competencies of decision-making, teachers from Yangon and Magway regions were higher than those of the teachers from Tanintharyi region (see Table 3).

Table 3 The Result of Tukey HSD Multiple Comparisons for Teachers' Lifelong Learning Competencies by Region

Subscales	Regions (I)	Regions(J)	Mean Difference (I-J)	*P*
Competencies of Acquiring Information	Magway	Yangon	-1.25***	0.000
Digital Competencies	Magway	Yangon	-1.25***	0.000
		Tanintharyi	-.94*	0.040
Competencies of Decision-making	Tanintharyi	Yangon	-.40*	0.030
		Magway	-.47**	0.010

Note. * Mean difference is significant at the 0.05 level.
** Mean difference is significant at the 0.05 level.
*** Mean difference is significant at the 0.01 level.

Comparison of Teachers' Lifelong Learning Competencies by Educational Qualification

Although there were six subscales in lifelong learning competencies, only the significance results of subscales in ANOVA were shown in table 4. ANOVA results show that there were significant differences in competencies of acquiring information, digital competencies and total lifelong learning competencies by educational qualification. (see Table 4).

Table 4 ANOVA Results of Each Subscale and Total Lifelong Learning Competencies by Educational Qualification

Subscales	Educational Qualification	*N*	Mean	*SD*	*F*	*p*
Competencies of Acquiring Information	BA/BSc	282	22.28	3.19	9.89***	0.000
	BEd	127	23.21	2.96		
	Master	25	24.80	3.09		

Subscales	Educational Qualification	*N*	Mean	*SD*	*F*	*p*
Digital Competencies	BA/BSc	282	22.81	2.86	21.79***	0.000
	BEd	127	24.28	3.18		
	Master	25	26.16	3.06		
Total Lifelong Learning Competencies	BA/BSc	282	182.95	15.38	4.45*	0.012
	BEd	127	184.93	16.58		
	Master	25	192.56	17.86		

Note. *Mean difference is significant at the 0.05 level.
*** Mean difference is significant at the 0.001 level.

The result of Tukey HSD multiple comparison indicated that competencies of acquiring information and digital competencies of BEd teachers and Master teachers are higher than that of BA/BSc teachers. Besides, in total of lifelong learning competencies, Master teachers are higher than BA/BSc teachers (see Table 5).

Table 5 The Results of Tukey HSD Multiple Comparison for Teachers' Formative Assessment Practices by Educational Qualification

Subscales	Educational Qualification(I)	Educational Qualifications(I)	Mean Difference (I-J)	*p*
Competencies of Acquiring Information	BEd	BA/BSc	.93*	0.015
	Master	BA/BSc	2.52***	0.000
Digital Competencies	BEd	BA/BSc	1.47***	0.000
	Master	BA/BSc	3.35***	0.000
		BEd	1.88*	0.010
Total Lifelong Learning Competencies	Master	BA/BSc	9.61*	0.010

Note. * Mean difference is significant at the 0.05 level.
*** Mean difference is significant at the 0.001 level.

Comparison of Teachers' Lifelong Learning Competencies by Teaching Experience

Although there were six subscales in lifelong learning competencies, only the significance results of subscales in ANOVA were shown in table. ANOVA show that there were significant differences in self-management competencies, competencies of initiative and entrepreneurship, competencies of acquiring information, digital competencies and Competencies of Decision-making among teachers' lifelong learning competencies by teaching experience (see Table 6).

Table 6 ANOVA Results of Teachers' Lifelong Learning Competencies by Teaching Experience

Subscales	Teaching Experience	*N*	Mean	*SD*	*F*	*p*
Self-management Competencies	1-11	191	42.84	4.32	7.26***	0.000
	12-21	131	43.87	3.47		
	22 & above	112	44.58	3.87		
Competencies of Initiative and Entrepreneurship	1-11	191	38.83	3.85	6.05**	0.003
	12-21	131	39.53	3.18		
	22 & above	112	40.29	3.52		
Competencies of Acquiring Information	1-11	191	23.01	3.27	2.89*	0.050
	12-21	131	22.76	2.86		
	22 & above	112	22.11	3.32		
Digital Competencies	1-11	191	23.96	3.23	8.26***	0.000
	12-21	131	23.47	2.56		
	22 & above	112	22.48	3.32		
Competencies of Decision-making	1-11	191	7.24	1.34	3.88*	0.021
	12-21	131	7.52	1.12		
	22 & above	112	7.61	1.15		
Total Lifelong Learning Competencies	1-11	191	182.92	16.67	0.90	0.447
	12-21	131	184.67	14.67		
	22 & above	112	185.04	16.38		

Note. * Mean difference is significant at the 0.05 level.
**Mean difference is significant at the 0.01 level.
*** Mean difference is significant at the 0.001 level.

The result of Tukey HSD multiple comparison indicated that in self-management competencies, competencies of initiative and entrepreneurism and competencies of decision-making, teachers with teaching experiences of 22 years and above were higher than those of 1 to11 years.

Besides, in digital competencies and competencies of acquiring information, teachers with teaching experiences of 1 to 11 years were higher than that of 22 years and above. It can be interpreted that teachers with teaching experiences of 1 to11 years and 12 to 21 years have better digital competencies than that of 22 years and above (see Table 7).

Table 7 The Results of Tukey HSD Multiple Comparison for Teachers' Lifelong Learning Competencies by Teaching Experience

Subscales	Teaching Experiences(I)	Teaching Experiences(J)	Mean Difference (I-J)	*p*
Self-management Competencies	22 & Above	1-11	1.74***	0.000
Competencies of Initiative and Entrepreneurism	22 & Above	1-11	1.47***	0.000
Competencies of Acquiring Information	1-11	22 & Above	0.90*	0.045
Digital Competencies	1-11	22 & Above	1.48***	0.000
	12-21	22 & Above	0.98*	0.035
Total Competencies of Decision-making	22 & Above	1-11	0.37*	0.030

Note. * Mean difference is significant at the 0.05 level.
*** Mean difference is significant at the 0.001 level.

Comparison of Teachers' Lifelong Learning Competencies by Age

Although there were six subscales in lifelong learning competencies, only the significance results of subscales in ANOVA were shown in table 8. ANOVA result show that there were significant differences in all subscales (self-management competencies, competencies of learning how to learn, competencies of initiative and entrepreneurship, competencies of acquiring information, digital competencies and competencies of decision-making) but not in total lifelong learning competencies among teachers by age (see Table 8).

Table 8 ANOVA Results of Each Subscale and Teachers' Lifelong Learning Competencies by Age

Subscales	Age (Year)	*N*	Mean	*SD*	*F*	*p*
Self-management Competencies	20-31	147	42.82	4.22	6.93***	0.000
	32-41	135	43.42	3.84		
	42 & Above	152	44.51	3.82		
Competencies of Learning how to Learn	20-31	147	46.93	4.40	4.26*	0.031
	32-41	135	47.13	4.42		
	42 & Above	152	48.15	4.01		
Competencies of Initiative and Entrepreneurship	20-31	147	38.76	3.69	5.61**	0.004
	32-41	135	39.32	3.63		
	42 & Above	152	40.14	3.39		

Competencies of Acquiring Information	20-31	147	23.37	2.84	5.14**	0.006
	32-41	135	22.47	3.38		
	42 & Above	152	22.26	3.24		
Digital Competencies	20-31	147	24.39	3.07	12.57***	0.000
	32-41	135	23.25	2.85		
	42 & Above	152	22.66	3.16		
Competencies of Decision-making	20-31	147	7.18	1.25	4.43*	0.013
	32-41	135	7.50	1.28		
	42 & Above	152	7.58	1.15		
Total Lifelong Learning Competencies	20-31	147	183.48	14.99	1.00	0.446
	32-41	135	183.10	16.60		
	42 & Above	152	185.55	16.44		

Note. * Mean difference is significant at the 0.05 level.
** Mean difference is significant at the 0.01 level.
*** Mean difference is significant at the 0.001 level.

The result of Tukey HSD multiple comparison indicated that teachers with 42 and above age groups were higher in self-management competencies, competencies of learning how to learn, competencies of initiative and entrepreneurship and competencies of decision-making than the other age groups. Teachers with 20 to 31 age groups were supposed to have more strength in competencies of acquiring information and digital competencies than teachers with 32 to 41 and 42 and above age groups (see Table 9).

Table 9 The Results of Tukey HSD Multiple Comparison for Teachers' Lifelong Learning Competencies by Age

Subscales	**Age (I)**	**Age (J)**	**Mean Difference (I-J)**	***p***
Self-management Competencies	32-41	42 & Above	-1.68***	0.000
Competencies of Learning how to Learn	20-31	42 & Above	-1.21*	0.037
Competencies of Initiative and Entrepreneurship	20-31	42 & Above	-1.38**	0.003
Digital Competencies	20-31	32-41	1.14**	0.005
		42 & Above	1.74***	0.000
Competencies of Decision-making	20-31	42 & Above	-0.40*	0.013

Note. * Mean difference is significant at the 0.05 level.
** Mean difference is significant at the 0.01 level.
*** Mean difference is significant at the 0.001 level.

An Analysis of Teachers' Formative Assessment Practices

Table 10 Descriptive Analysis of Each Subscale and Teachers' Formative Assessment Practices from Selected Region

Subscales	*N*	Mean	Mean%	*SD*
The Affective Attitude (AAT)	434	29.30	83.71%	2.62
Instrumental Attitude (IAT)	434	41.34	82.68%	3.78
Subjective Norm (SNO)	434	15.59	77.80%	1.82
Controllability (CON)	434	22.60	75.33%	3.00
Self-efficacy (SEF)	434	24.21	80.70%	2.39
Intention (INT)	434	20.13	80.51%	2.37
Behaviour (BEH)	434	7.51	75.00%	1.69
Total Formative Assessment Practices	434	160.69	80.74%	12.83

As shown in Table 10, the mean and standard deviation of teachers' formative assessment practices were 160.69 and 12.834 respectively. since, it can be seen that teachers' formative assessment practices was satisfactory in this study because the mean percentage of teachers' lifelong learning competencies was 80.74 and their mean values are higher than the mid-point.

Next, among the seven subscales, the mean percentage of the affective attitude (AAT) was the highest and that of behaviour (BEH) was the lowest. Hence, it can be interpreted that teachers in this study were willing to raise students' interest in learning and offer an actuate appraisal of students' performance and decrease the implementation of formative assessment.

Comparison of Teachers' Formative Assessment Practices by Region

ANOVA results showed that there were significant differences in subscales of the affective attitude (AAT), instrumental attitude (IAT) and controllability (CON). Therefore, only three subscales were indicated in Table 11 although there were seven subscales in formative assessment.

Table 11 ANOVA Results of Each Subscale and Teachers' Formative Assessment Practices by Region

Subscales	Regions	N	Mean ($\bar{x}$)	*SD*	*F*	*p*
The Affective Attitude (AAT)	Yangon	158	29.18	2.59	11.20***	0.000
	Tanintharyi	102	30.31	2.82		
	Magway	174	28.82	2.36		
Instrumental Attitude (IAT)	Yangon	158	41.13	3.61	3.32*	0.037
	Tanintharyi	102	42.18	4.29		

Subscales	Regions	N	Mean ($\bar{x}$)	*SD*	*F*	*p*
	Magway	174	41.05	3.55		
Controllability (CON)	Yangon	158	22.66	2.84	3.51*	0.031
	Tanintharyi	102	21.95	3.99		
	Magway	174	22.93	2.37		
Total Formative Assessment Practices	Yangon	158	160.6	12.58	0.75	0.471
	Tanintharyi	102	161.97	16.12		
	Magway	174	160.01	10.75		

Note. * Mean difference is significant at the 0.05 level.
*** Mean difference is significant at the 0.001 level.

The results of Tukey HSD multiple comparison indicated that Tanintharyi teachers was higher than Magway and Yangon teachers in the affective attitude (AAT). Magway teachers are lower than Tanintharyi teachers in instrumental attitude (IAT). Tanintharyi teachers were lower than Magway teachers in controllability (CON) (see Table 12).

Table 12 The Results of Tukey HSD Multiple Comparison for Teachers' Formative Assessment Practices by Region

Subscales	Regions(I)	Regions(J)	Mean Difference (I-J)	*p*
The Affective Attitude (AAT)	Yangon	Tanintharyi	-1.13**	0.002
	Magway	Tanintharyi	-1.49***	0.000
Instrumental Attitude (IAT)	Magway	Tanintharyi	-1.13*	0.043
Controllability (CON)	Tanintharyi	Magway	-.98*	0.024

Note. * Mean difference is significant at the 0.05 level.
** Mean difference is significant at the 0.01 level.
*** Mean difference is significant at the 0.001 level.

Comparison of Teachers' Formative Assessment Practices by Educational Qualification

Although there were seven subscales in formative assessment practices, ANOVA results showed that there were only significant differences in two subscales of self-efficacy (SEF) and behaviour (BEH) (see Table 13).

Table 13 ANOVA Results of Each Subscale and Teachers' Formative Assessment Practices by Educational Qualification

Subscales	Educational Qualifications	*N*	Mean	*SD*	*F*	*p*
Self-efficacy (SEF)	BA/BSc	282	23.99	2.48	3.95*	0.020
	BEd	127	24.52	2.08		
	Master	25	25.08	2.41		

Subscales	Educational Qualifications	*N*	Mean	*SD*	*F*	*p*
Behaviour (BEH)	BA/BSc	282	7.62	1.73	4.03*	0.018
	BEd	127	7.17	1.67		
	Master	25	7.96	1.14		
Total Formative Assessment Practices	BA/BSc	282	160.46	12.25	0.19	0.82
	BEd	127	160.94	13.56		
	Master	25	161.96	15.69		

Note. * Mean difference is significant at the 0.05 level.

The result of Tukey HSD multiple comparison indicated that BA/BSc teachers were significantly higher than that of BEd teachers in the affective attitude (AAT) in this study. It can be seen that teachers who holds BA/BSc were more likely to facilitate the formative assessment than BEd teachers in behaviour (BEH) (see Table 14).

Table 14 The Results of Tukey HSD Multiple Comparison for Formative Assessment Practices by Educational Qualification

Subscales	Educational Qualification (I)	Educational Qualification (J)	Mean Difference (I-J)	*p*
Behaviour (BEH)	BA/BSc	BEd	.45*	0.036

Note.* Mean difference is significant at the 0.05 level.

Comparison of Teachers' Formative Assessment Practices by Teaching Experience

Among seven subscales in formative assessment practices, ANOVA results showed that there were only significant differences in subscales of subjective norm (SNO), controllability (CON) and total formative assessment practices (see Table 15).

Table 15 ANOVA Results of Each Subscale and Total Formative Assessment Practices by Teaching Experience

Subscales	Teaching Experience	*N*	Mean	*SD*	*F*	*p*
Subjective Norm (SNO)	1-11	191	15.23	1.94	8.05***	0.000
	12-21	131	15.72	1.72		
	22 & above	112	16.07	1.57		
Controllability (CON)	1-11	191	22.03	3.14	8.05***	0.000
	12-21	131	22.73	2.88		
	22 & above	112	23.43	2.71		
Total Formative	1-11	191	159.12	13.32	3.74*	0.025

Subscales	Teaching Experience	*N*	Mean	*SD*	*F*	*p*
Assessment Practices	12-21	131	160.76	12.37		
	22 & above	112	163.27	12.18		

Note. * Mean difference is significant at the 0.05 level.
*** Mean difference is significant at the 0.001 level.

The results of Tukey HSD multiple comparison indicated that in subjective norm (SNO), controllability (CON) and the total of formative assessment practices teachers with teaching experiences of 22 years and above were higher than that of teaching experiences with 1 to11 years. Besides, in subjective norms, teachers with teaching experiences of 12 to 21 years was higher than that of 1 to 11 years (see Table 16).

Table 16 The Results of Tukey HSD Multiple Comparison for Formative Assessment Practices by Teaching Experiences

Subscales	Teaching Experiences (I)	Teaching Experiences (J)	Mean Difference (I-J)	*p*
Subjective Norm (SNO)	12-21	1-11	0.48*	0.044
	22 & Above	1-11	0.84***	0.000
Controllability (CON)	22 & Above	1-11	1.39***	0.000
Total Formative Assessment Practices	22 & Above	1-11	4.15*	0.018

Note. * Mean difference is significant at the 0.05 level.
*** Mean difference is significant at the 0.001 level.

Comparison of Teachers' Formative Assessment Practices by Age

Moreover, out of seven subscales in formative assessment practices, ANOVA results showed that there were only significant differences in subscales of subjective norm (SNO), controllability (CON) and total formative assessment practices (see Table 17).

Table 17 ANOVA Results of Each Subscale and Teachers' Formative Assessment Practices by Age

Subscales	Age (Years)	*N*	Mean	*SD*	*F*	*p*
Subjective Norm (SNO)	20-31	147	15.31	1.89	6.43**	0.002
	32-41	135	15.45	1.85		
	42 & Above	152	16.01	1.62		
Controllability (CON)	20-31	147	21.91	3.05	7.36***	0.000
	32-41	135	22.65	2.97		
	42 & Above	152	23.22	2.85		
Total Formative Assessment Practices	20-31	147	159.18	12.61	3.19*	0.042
	32-41	135	160	13.67		
	42 & Above	152	162.75	12.06		

Note. * Mean difference is significant at the 0.05 level.
* Mean difference is significant at the 0.01 level.
*** Mean difference is significant at the 0.001 level.

The result of Tukey HSD multiple comparison indicated that teachers with 42 and above age groups were better higher than those of 20 to 31years in subjective norm (SNO), controllability (CON), total formative assessment practices (FAP) (see Table 18).

Table 18 The Results of Tukey HSD Multiple Comparison for Teachers' Formative Assessment Practices by Age

Subscales	Age (I)	Age (J)	Mean Difference (I-J)	*p*
Subjective Norm (SNO)	20-31	42 & Above	-.70**	0.002
	32-41	42 & Above	-.55*	0.025
Controllability (CON)	20-31	42 & Above	-1.31***	0.000
Total Formative Assessment Practices (FAP)	20-31	42 & Above	-3.56*	0.043

Note. * Mean difference is significant at the 0.05 level.
* Mean difference is significant at the 0.01 level.
*** Mean difference is significant at the 0.001 level.

The Relationship between Teachers' Lifelong Learning Competencies and Formative Assessment Practices

In order to explore the relationship between teachers' lifelong learning competencies and formative assessment practices, the Pearson Product-Moment correlation coefficient was computed. The results were shown in Table 19.

Table 19 Correlation between Teachers' Lifelong Learning Competencies and Formative Assessment Practices

Subscales	Formative Assessment Practices
Teachers' Lifelong Learning Competencies Pearson Correlation	.749***
Sig (two-tailed)	0.000
N	434

Note. *** Correlation is significant at the 0.001 level. (2- tailed).

According to the results, teachers' lifelong learning competencies and formative assessment practices were significantly and positively correlated (r = 0.749). This means that the more lifelong learning competencies teachers have, the more formative assessment practices they apply.

Multiple Regression Analysis of Teachers' Lifelong Learning Competencies on Formative Assessment Practices

To investigate the predicative contributions of variables of teachers' lifelong learning competencies to formative assessment practices of teachers, the multiple regression analysis was conducted. The result was shown in the Table 20.

In addition, to find out how well teachers' lifelong learning competencies predict their formative assessment practices, simultaneously multiple regression was computed. Therefore, self-management competencies, competencies of learning how to learn, competencies of initiative and entrepreneurship and competencies of decisions-making were significant predictors of formative assessment practices of teachers (t = 8.55, p < 0.001). Adjusted R square value was 0.60; it indicated that approximately 60% of the variance in lifelong learning competencies could be explained by teachers' formative assessment practices.

Table 20 Multiple Regression Analysis Teachers' Lifelong Learning Competencies on Formative Assessment Practices (FAP)

Subscales	B	β	*t*	*R*	R^2	Adjusted R^2	*F*
(Constant)	42.62		8.55***	0.78	0.61	0.60	110.23
SMC	0.74	0.23	5.30***				
CLL	0.37	0.14	2.93**				
CIE	1.33	0.37	7.39***				
CAI	-0.16	-0.04	-0.69				
DC	0.39	0.09	1.86				
CDM	1.43	0.14	3.39***				

Note. ** Mean difference is significant at the 0.01 level.
*** Mean difference is significant at the 0.001 level.
SMC = Self-management Competencies, CLL = Competencies of Learning how to Learn, DC = Digital Competencies, CIE = Competencies of Initiative and Entrepreneurship, CDM = Competencies of Decisions-making, CAI = Competencies of Acquiring Information

The Model Equation

Formative Assessment Practices = 42.62 + 0.74SMC + 0.37CLL + 1.33CIE + 1.43CDM

SMC=Self-management Competencies, CLL=Competencies of Learning how to Learn, CIE=Competencies of Initiative and Entrepreneurship, CDM=Competencies of Decision-making.

Based on the findings of multiple regression analysis, a model diagram can be drawn as follows.

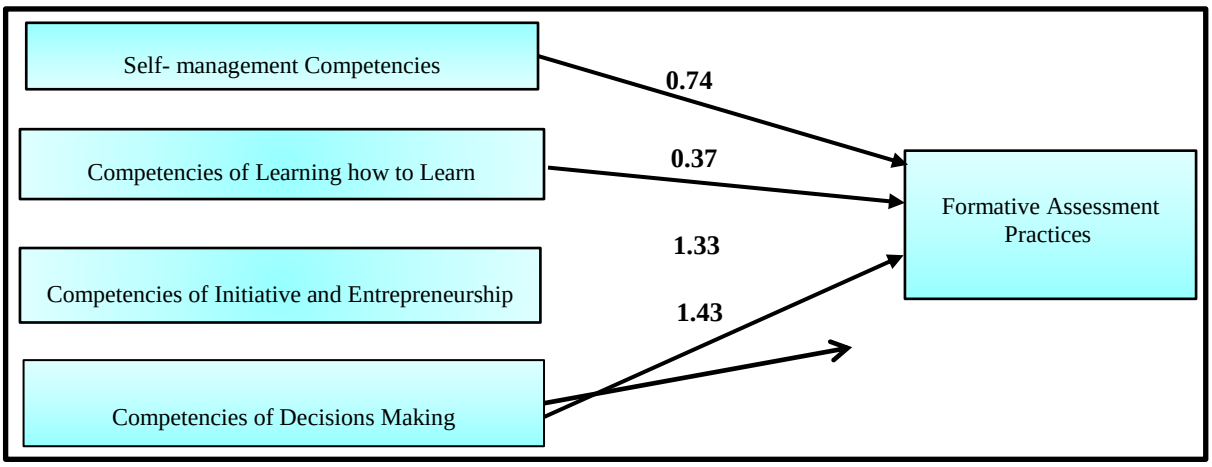

Figure 1 Summary Models of Subscales Influencing Lifelong Learning Competencies on Formative Assessment Practices

Discussion

Findings reveal that teachers' lifelong learning competencies was satisfactory in this study because the mean percentage of teachers' lifelong learning competencies was 74.53%. From all factors of teachers' lifelong learning competencies, the mean percentage of "self-management competencies" of teacher was highest and that of "competencies of learning how to learn" was lowest among factors. It would be said that the teachers would be able to take decisions by oneself for professional development, and would undertake personal responsibilities at team work (Hursen, 2011). This finding is consistent with the previous study of Hursen (2011) that competencies perception of the teachers towards lifelong approach is on a high level. It also indicated that the teachers would be more competent in self-management and would need to make the competencies of learning how to learn.

According to regions, the result of ANOVA indicated that competencies of acquiring information of teacher from Yangon region was higher than that of teachers from Magway region. In digital competencies, teachers from Yangon and Tanintharyi regions were higher than that of Magway region. In competencies of decision-making, teachers from Yangon and Magway regions were higher than those of the teachers from Tanintharyi region.

According to education qualification, the result of ANOVA indicated that teachers who holds BEd and Master degree would be better than those BA/BSc in competencies of acquiring information, and digital competencies. Besides, teachers who hold Master degree are better than those BA/BSc teachers in competencies of acquiring information, and digital competencies. Therefore, it may be seen that teachers who hold master degree would be better in competencies of acquiring of information, digital competencies and lifelong learning competencies than BA/BSc degree holders in this study.

Regarding teaching experiences, the result revealed that the teachers with teaching experience 22 years and above were significantly higher than the teachers with teaching experience 1 to 11 years in self-management competencies, competencies of initiative and entrepreneurism, competencies of decision-making whereas the teachers with teaching experience 1 to 11 years were significantly higher than the teachers with teaching experience 22 years and above in competencies of acquiring information and digital competencies. Besides, the teachers having teaching experience 22 years and 21 were significantly higher than the teachers with teaching experience 22 years and above in digital competencies. It can be interpreted that the matured and experienced teachers had the ability of lifelong learning competencies than any other inexperienced teachers because the experienced teachers have attended continuous professional development, workshop, varieties of courses and training. However, the experienced teachers have the limited knowledge in digital competencies and acquiring information. The experienced teachers with teaching experience 22 years and above might have the several valuable knowledges, attending a variety of training and workshop according to the increasing teaching experiences. This finding was consistent with Demir-Basaran, and Sesli (2019).

Regarding age, the result revealed that teachers with age group of 42 years and above were significantly higher than that of 32 to 41 years in self-management competencies and teachers with age group of 42 years and above were significantly differed from that of 20 to 31 years age group both in competencies of learning how to learn and in competencies of initiative and entrepreneurship. Teachers with 20 to 31years age groups are supposed to have more

strength and more active in competencies of acquiring information and digital competencies than teachers with 32 to 41 years age groups and 42 years and above age groups. It can be interpreted that the elder teachers had the ability in lifelong learning competencies than any other younger teachers because the elder teachers' trainees with lifelong leaning competencies and knowledge that they need during the whole professional period to become self-learners.

Finding revealed that teachers' formative assessment practices was satisfactory in this study because the mean percentage of formative assessment practices was 80.74%. It was seen that the mean score of instrumental attitudes (IAT) was the highest, and behaviour (BEH) was the lowest one. It may be seen that teachers in this study are willing to raise students' interest in learning and offer an actuate appraisal of student's performance and decrease the implementation of formative assessment.

According to regions, it was found that teachers from Tanintharyi were higher than from those from Yangon and Magway in the affective attitude (AAT); teachers from Tanintharyi were higher in instrumental attitude (IAT) than those from Magway teachers. In controllability (CON), Tanintharyi teachers were significantly higher than that of Magway teachers. It can be seen that teachers from Magway would be more willing to decide more frequent of implementing formative assessment than teachers from Tanintharyi teachers.

The result of ANOVA indicated that teachers whose teaching experience is 12 to 21 years and 22 years and above were higher than that of 1 to 11 in subjective norm (SNO) whereas teachers whose teaching experienced is 22 years and above were significantly higher than that of 1 to 11 years in controllability (CON). It can be interpreted that the teachers whose teaching experienced is 22 and above might have the several valuable knowledge, attending a variety of training and workshop according to the increasing teaching experiences. This result is consistent with the finding of Alotaibi (2019) that younger teacher less agrees than elder teachers. Besides, this result was consistent with Sach (2012) and Cpr.indiana.edu (2018) while comparing with overall of formative assessment practices.

Cpr.indiana.edu. (2018). Relationship between Faculty Perceptions of Institutional Participation in Assessment and Faculty Practices of Assessment-Related Activities. Retrieved from http://cpr.indiana.edu/uploads/AERA11-Paper-FacultyAssessment-FINAL.pdf In this study, teachers' lifelong learning competencies and formative assessment practices are significantly and positively correlated. It can be interpreted that the more teachers' lifelong learning competencies gets, the more formative assessment practices they have. In a previous study, having a good level of CPD (LLLCs) involvement help the teachers to conduct the FAP (Widiastuti, 2020).

According to age, the result revealed that older teachers (42 years and above age group) would be more adoption, perception in the implementation of formative assessment practices than younger teachers (20 to 31 years and 32 to 41 years age groups). Teachers of elderly ages would perceive more difficulties in formative assessment practices in comparisons to younger teachers (Lampert, 2003; Furtak et al., 2016). This result is inconsistent with Verberg et al., (2016).

Moreover, regression analysis revealed that four subscales of teachers' lifelong learning competencies such as self- management competencies and competencies of learning how to learn, competencies of initiative and entrepreneurship, competencies of teachers in this study predict formative assessment practices. This study indicated that approximately 60% of the

variance in formative assessment practices could be explained by the factors of teachers' lifelong learning competencies.

Limitations, Suggestions and Future Research

Participants in this study only from three regions in Myanmar, it can have some limitations to generalize this finding. If the broader selection for sample could be made, the results might be more representative. Because of descriptive survey with self-report measurements, to know the teachers' LLLCs and FAP accurately, interview question is needed to carry out to understand more deeply. Future research is required to investigate studies of the perception, adoption and knowledge of formative assessment practices, other related variables such as student achievement, knowledge of formative assessments, and job satisfaction of teachers. So, research studies with a larger sample size from different states and regions should be conducted to be more reliable, generalized, and more valid data.

Conclusion

The lifelong learning must have a structure containing democratic principles and human rights. The creation of lifelong learning activities and continuing this activity in a healthy way must always be maintained during all processes of education and teaching. The lifelong learning approach must take multidirectional learning opportunity into the center. The lifelong learning approach must encourage the individuals in the fields of their talents and must include the family into the education process and provide flexible structure. Besides, it has a great importance to recognize the lifelong learning abilities for the continuity of education activities. Therefore, lifelong learning competencies among teachers are essential for enhancing that their formative assessment practices.

While formative assessment may have an important effect on the students' attitudes and their achievements, the research results indicate that attitudes and actions in the classroom influence the teachers' changing process, and are thus considered very important in understanding the classroom practices that help the teachers develop the critical thinking and aim at changing the practices within the process. Formative assessment result is an important attribute of effective instruction. It is also a critical component of teaching, and appropriate manner. If the teachers who have limited assessment literacy skills in the teaching and learning process, it is more likely to be harm than good to the students. Accordingly, teachers do need the proper training in assessment issues that will allow them to perform their careers in the best way. Sound assessment practices are not a skill that one typically acquires without support in the form of solid training at training centers and subsequent professional development sessions.

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