TEACHERS' CRITICAL THINKING DISPOSITIONS, SUPPORTS OF THE PRINCIPALS AND TEACHERS' PRACTICES IN PROMOTING PRIMARY STUDENTS' CRITICAL THINKING SKILLS

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Abstract

The main purpose of this study is to investigate the teachers' critical thinking disposition, supports of their principals and their teaching practices in promoting primary students' critical thinking skills. The specific objectives are 1) to examine the critical thinking dispositions among primary teachers, 2) to explore the level of the principals' supports, 3) to inspect the practices of teachers in promoting primary students' critical thinking skills, 4) to investigate the best predictors for teachers' practices in promoting primary students' critical thinking skills, and 5) to study the primary students' critical thinking skills. Both quantitative and qualitative research methods were used to collect the required data for this study. Three phases were conducted in this study. In phase I, quantitative study was conducted by using questionnaire survey method. In phase II, qualitative study on teacher's practices in teaching primary students' critical thinking skills was conducted by using observation method and interview method. As the phase III, primary students' critical thinking skills was assessed by using the questionnaire. Three hundreds and eighteen teachers who are teaching at the primary level participated in this study. The collected data were systematically analyzed by quantitative and qualitative data analysis method. The results revealed that the critical thinking dispositions of primary teachers in this study were high and the supports of the principals was enough. It was found that the principals' supports is the best predictor on teachers' practices on promoting primary students' critical thinking skills, teachers' critical thinking dispositions as the second predictor and teachers' qualification as the third predictor. The findings underscore the significant role that teachers' practices play in promoting critical thinking abilities among their students.

Keywords: critical thinking skills, critical thinking dispositions, practices

Introduction

The world is moving very fast to become a global village. So, there are many challenges because of changing environment in the society. According to Chang (2009), the human nature in a social content of the new century will be a multiple person, as technological person, economic person, social person, political person, cultural person and the learning person in a global village. To become such a multiple intelligence person, everyone must have critical thinking skills as it gives the right direction to think and work and assist in determining the relationship with other accurately.

According to Synder and Synder (2008), critical thinking is a learnable skill. Critical thinking should be developed, practiced and continually integrated into the curriculum. They suggested that instruction should focus on the application of content rather than the content itself. Besides, the quality of students in the future is determined by the role of teachers in today's schools. Khin Zaw (1993) noted that no educational system can ever be better than its teachers. One of the important roles of teacher is to promote the students' critical thinking skills. The practice of teaching and learning and encouraging the achievement of the necessary critical thinking skills of teachers in primary schools are associated with the development of students' critical thinking skills (Slameto, 2014).

Education reforms are now being actively implemented in Myanmar. The purpose of Myanmar's education is to develop human resources capable of meeting the challenges of the

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21st century. Therefore, all the educational activities emphasize on the developing 21st century skills. Critical Thinking is one of the 21st century skills and improving students' critical thinking skills is the salient factor in implementing education activities in Myanmar. Therefore, the practices of teacher are the major factor in implementing curriculum and which factors are influenced on their practices is important to study.

Purpose of the Study

The purpose of this study is to study the teachers' critical thinking disposition, principals' supports and their teaching practices for promoting primary students' critical thinking skills are as follows:

1. To investigate the critical thinking dispositions among primary teachers
2. To study the practices of teachers in promoting primary students' critical thinking skills
3. To study the levels of principals' supports in teaching critical thinking skills
4. To investigate the best predictors for teachers' practices in promoting primary students' critical thinking skills
5. To study the primary students' critical thinking skills

Definitions of Key Terms

Critical Thinking Skills – the ability of the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information gathered from, or generated by observation, experience, reflection, reasoning, or communication, as a guide to belief and action (Scriven & Paul, 1987)

Critical Thinking Dispositions- an attribute or habit of mind that is integrated into one's beliefs or actions to effectively solve problems and make decisions as a product of thinking (Fitriani, H. et al., 2018).

Review of Related Literature

The concept of critical thinking has been in existence for many years, based on the work of Socrates, "the unexamined life is not worth living" (Socrates, 470-399 BC). Critical thinking has been variously defined as "thinking that is the use of those cognitive skills (or) strategies that increase the probability of a desirable outcome and thinking that is purposeful, reasoned and goal directed: the kind of thinking involved in solving problems, formulating inferences, calculating likelihood, and making decisions when thinker is using skills that are thoughtful and effective for the particular context and type of thinking task (Halpen, 1996) and "thinking that is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and evaluating information gathered from, or generated by observation, experience, reflection, reasoning, or communication as a guide to belief and action" (Paul, R. & Elder, L.2006).

Critical Thinking Disposition

In 2000, Facione, and Giancarlo developed the California Critical Thinking Disposition Inventory (CCTDI). This is suitable for use with secondary students, college students and adults. In this inventory, there are seven sub-scales. These sub- scales are truth- seeking, critical thinking self–confidence, systematicity, analyticiy, maturity, open-mindedness and inquisitiveness.

Truth-seeking: Truth-seeking is the habit of always desiring the best possible understanding of any given situation.

Critical thinking self-confidence: The tendency to trust the use of reason and reflective thinking to solve problems is reasoning self-confidence. This habit can apply to individuals or to groups.

Systematicity: Systematicity is the tendency or habit of striving to approach problems in a disciplined, orderly, and systematic way.

Analyticity: Analyticity is the tendency to be alert to what happens next. This is the habit of striving to anticipate both the good and the bad potential consequences or outcomes of situations, choices, proposals, and plans.

Maturity of judgment: Cognitive maturity is the tendency to see problems as complex, rather than black and white. It is the habit of making a judgment in a timely way, not prematurely, and not with undue delay. It is the tendency of standing firm in one's judgment when there is reason to do so, but changing one's mind when that is the appropriate thing to do. It is prudence in making, suspending, or revising judgment. It is being aware that multiple solutions may be acceptable while appreciating the need to reach closure in certain circumstances even in the absence of complete knowledge.

Open-mindedness: Open-mindedness is the tendency to allow others to voice views with which one may not agree. Open-minded people act with tolerance toward the opinions of others, knowing that often we all hold beliefs which make sense only from our own perspectives.

Inquisitiveness: Inquisitiveness is intellectual curiosity. It is the tendency to want to know things, even if they are not immediately or obviously useful at the moment.

Charlotte Danielson's Framework for Teaching

Teaching is an incredibly complex profession. It requires teachers to maintain core skills and the necessary knowledge to help students succeed throughout their academic careers. Danielson created the framework to capture "good teaching" in all of its complexity. The broad framework was also intentionally designed to capture effective teaching at every grade level and across a wide range of student populations. The Danielson Framework include four domains. These are

- Planning and preparation
- Classroom environment
- Instruction and
- Professional responsibilities (Danielson, 2013).

Methodology

Research Method

Both quantitative and qualitative research methods were used to collect the required data for this study. There were three phases in this study. In phase I, critical thinking dispositions of teachers, principals' supports and teachers' practices in teaching students' critical thinking skills were studied by using questionnaire survey method. In phase II, qualitative study on teacher's practices in teaching primary students' critical thinking skills was conducted by using observation method, and teachers' critical thinking ability and dispositions, difficulties in teaching critical thinking skills and need for support in teaching primary students' critical thinking skills were studied by using interview method. In phase III, primary students' critical thinking was assessed.

Sampling

In phase I, the sample of the study included three hundred and eighteen teachers who teach in primary level from Thegon Township. In Thegon Township, there were 1300 teachers who teach in primary level. In order to get the required sample, the researcher selected the participants by using simple random sampling method. In phase II, the participant teachers were

selected by purposive sampling method. For observation study, nine teachers who were teaching upper primary level were chosen based on both mean value of teachers' practices and critical thinking dispositions such as low, average and high. For interview, twenty-five participants who have highest mean value of critical thinking dispositions were selected. In phase III, the researcher selected all students who were taught by teachers who participated in observation study. There were 83 students in this study.

Research Instrumentation

For quantitative study, two instruments were used in the proposed study. The first was the researcher- constructed questionnaire and the second was the California Critical Thinking Disposition Inventory. The four-part researcher constructed questionnaire consisted of (1) demographic sheet, (2) items for teachers' practices in teaching critical thinking skills and (3) principals' supports in teaching critical thinking skills and (4) four open-ended questions. For qualitative study, the observation checklists were consisted with four dimensions with 22 items to investigate teachers' teaching practices in classroom. The semi- structured interview form consists of 12 items to cover building critical thinking dispositions and 3 items to cover teaching critical thinking skills. It consisted of five dimensions: analysis, evaluation, inference, induction and deduction and critical thinking attitude. There were 5 items for each dimension and the number of total items for critical thinking skills was 25. There were 5 items for critical thinking attitude. Then, three phase of this research was conducted.

Data Analysis and Findings

Phase I: Quantitative Research Findings

Investigating Critical Thinking Dispositions of Primary Teachers

In this study, mean value interpretation of level was 1.00 to 2.66 (Weak), 2.67 to 4.33 (Moderate) and 4.34 to 6.00 (High) (Source: Fraenkel & Wallen, 2003).

Table 1 Mean and Standard Deviation for Critical Thinking Dispositions Inventory (CCTDI) Subscales for Primary Teachers (N=318)

No.	Variable	Mean	SD	Remark
1.	Critical Thinking Self- confidence	4.36	.60	High
2.	Inquisitiveness	4.37	.44	High
3.	Truth -seeking	3.75	.42	Moderate
4.	Systematicity	4.23	.41	Moderate
5.	Analyticity	4.57	.48	High
6.	Open- mindedness	4.19	.43	Moderate
7.	Maturity	4.39	.46	High
Critical Thinking Disposition		**4.17**	**.26**	**Moderate**

Scoring range for CCTDI: 1.00-2.66 = Weak , 2.67 – 4.33 = Moderate , 4.34 – 6.00= High

According to Table 1, critical thinking dispositions of primary teachers in this study was moderate level.

Table 2.Teachers' Critical Thinking Dispositions Grouped by Personal Factors (N=318)

		N	Mean Score	SD	*p*
Gender	Male	88	4.33	.56	n.s
	Female	230	4.37	.62	
Academic Qualification	Undergraduate	24	4.33	.64	n.s
	Graduate	294	4.36	.60	

		N	Mean Score	SD	*p*
Service	10 years and below	160	4.36	.64	n.s
	Above 10 years	158	4.36	.57	
Age	25-34 years	156	4.19	.26	n.s
	35-44 years	59	4.11	.27	
	45 and above years	103	4.18	.24	

Note: n.s= no significance

According to Table 2, there was no significantly difference in critical thinking dispositions according to personal factors (gender, academic qualification, service and age.

The Extent of Principals' Support in Teaching Primary Students' Critical Thinking Skills

To study the principals' support in promoting primary students' critical thinking skills, the researcher developed 3- point Likert scale questionnaire for principals' support with 7 items. The results will be showed the followings.

Table 3 Number and Percentage of Participant Teachers Showing the Level of Receiving Support of Principals (N= 318)

No.	Variable	Mean (SD)	Number of Teachers who		
			Receive a little support	Receive moderate support	Receive adequate support
1.	Supervising the inclusion of Bloom's taxonomy in setting learning goals	2.26 (0.56)	20 (6.3%)	193 (60.7%)	105 (33.0%)
2.	Giving advice in implementing teaching learning process to achieve the learning goals	2.38 (0.62)	24 (7.5%)	146 (45.9%)	148 (46.6%)
3.	Supporting teaching aids	2.61 (0.53)	7 (2.2%)	109 (34.3%)	202 (63.5%)
4.	Observing and providing the necessary guidance	2.39 (0.62)	23 (7.2%)	146 (45.9%)	149 (46.9%)
5.	Creating opportunities to support professional development	2.31 (0.69)	42 (13.2%)	134 (42.1%)	142 (44.7%)
6.	Appreciating teachers' performance	2.22 (0.73)	57 (17.9%)	133 (41.8%)	128 (40.3)
7.	Communicating with teachers well and intimating relationship with teachers	2.83 (0.44)	9 (2.8%)	35 (11.0%)	274 (86.2%)
Principals' Support		**2.43 (0.40)**	**5 (1.6%)**	**131 (41.2%)**	**182 (57.2%)**

Scoring range: 1.00-1.66 = little support;1.67-2.33= moderate support ;2.34-3.00 adequate support

According to the data presented in Table 3, teachers received adequate supports from principals.

The Extent of Teachers' Practices in Teaching Primary Students' Critical Thinking Skills

The questionnaire consisted of four dimensions: planning and preparation, the classroom environment, instruction and professional responsibilities. the total items for teachers' practices were 58. There items were five-point Likert scales (1= Never to 5=Always).

Table 4 Means and Standard Deviations and Percentages of Teachers' Practices in Teaching Primary Students' Critical Thinking Skills (N= 318)

No.	Variable	Mean	SD	Remark
1.	Planning and Preparation	4.35	0.49	Good
2.	Classroom Environment	4.19	0.48	Moderate
3.	Instruction	4.03	0.03	Moderate
4.	Professional Responsibilities	4.27	0.48	Good
Teachers' Practices		**4.21**	**0.36**	**Moderate**

Scoring range: 1.00 to 1.80 = not at all practiced 1.81 to 2.61= slightly practiced
2.62 to 3.42 = somewhat practiced 3.43 to 4.23 = moderately practiced
4.24 to 5.00 =good practiced

According to the Table 4, the participant teachers in this study moderately practiced in promoting primary students' critical thinking skills.

Table 5.Teachers' Practices in Promoting Primary Students Critical Thinking Skills Grouped by Personal Factors (Gender, Service, and Age) (N=318)

		N	Mean Score	SD	*p*
Gender	Male	88	4.19	.36	n.s
	Female	230	4.26	.35	
Service	10 years and below	160	4.25	.37	n.s
	Above 10 years	158	4.23	.35	
Age	25-34 years	156	4.25	.37	n.s
	35-44 years	59	4.19	.34	
	45 and above years	103	4.26	.35	

Note: n.s= no significance

According to Table 5, there was no significantly difference in teachers practices in promoting primary students critical thinking skills according to personal factors (gender, service and age).

Table 6. Independent Samples *t* Test Result Showing Mean Values of Teachers' Practices in Teaching Critical Thinking According to Qualification (N=318)

Variable	Qualification	N	Mean	SD	*t*	*df*	*p*
Teachers' Practices	Undergraduate	24	4.07	.37	-2.35	316	.015*
	Graduate	294	4.26	.35			

Note: **p < .05*

The result showed that there was significant difference between the overall practices of graduate teachers and that of undergraduate teachers.

Table 9. Independent Samples *t* Test Result Showing Mean Values of Teachers' Practices in Teaching Critical Thinking According to Level of Critical Thinking Dispositions (N=318)

Variable	LCTD	N	Mean	SD	*t*	*df*	*p*
Teachers' Practices	Moderate	229	4.05	.19	.377	316	.000***
	High	89	4.45	.12			

Note: ***$p < .001$ LCTD= Level of Critical Thinking Dispositions

The result showed that there was significant difference between the practices of teachers who are high level of critical thinking dispositions and moderate level of critical thinking dispositions.

Table 10 One-Way ANOVA Result Showing Mean Values of Teachers' Practices in Teaching Critical Thinking According to Level of Principals' Supports

Variable	LPS	N	Mean	SD	*F*	*p*
Teachers' Practices	Little	5	4.07	.31		
	Moderate	131	4.11	.24	7.04	0.001***
	Enough	182	4.22	.26		

Note: ****p* < *.001* LPS= Level of Principals' Supports

Table 11 Tukey HSD Result Showing Multiple Comparisons for Significantly Different Areas in Teachers' Practices in Promoting Primary Students' Critical Thinking Skills by Level of Principals' Supports (N=318)

Dependent Variable	(I) LPS	(J) LPS	Mean Difference (I-J)	*p*
Teachers' Practices	Enough	Moderate	.107	.001***

Note: ****p* < *.001* LPS= Level of Principals' Supports

According to Table 11, Tukey HSD indicates that the group of teachers who were got high supports from principal significantly differed with the group of teachers who were got somewhat degree supports.

The Potential Factors Affecting on Teachers' Practices in Promoting Primary Students' Critical Thinking Skills

Table 12 Mean, Standard Deviations, and Inter-correlations for Teachers' Practices in Promoting Primary Students' Critical Thinking Skills (N=318)

	Variables	M (SD)	1	2	3
	Teachers' Practices	4.21(.36)	.136*	.283***	.348***
1.	Qualification	1.92(.26)		.012	.021
2	Critical Thinking Dispositions	4.17(.40)		.	.180***
3	Principals' Support	2.43(.40)			

*** *p* <.05 , ***p* < .01, ****p* < .001**

Table 13 Simultaneous Multiple Regression Analysis for Predicting Teachers' Practices in Promoting Primary Students' Critical Thinking Skills (N= 318)

Variables	B	Std.Error	Beta	*p*
Qualification	1.97	.328	.13	.013*
Teachers' Critical Thinking Disposition	.311	.072	.23	.000***
Principals' Supports	.274	.047	.30	.000***
Constant	1.947	.328		

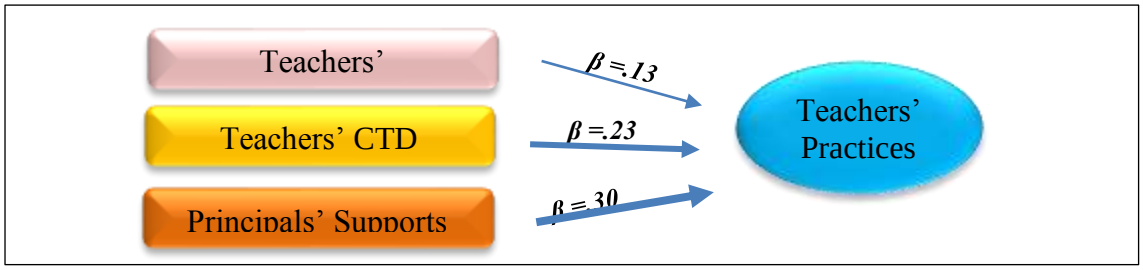
***R*= .43, R^2 = .19, F(3,316)= 23.88, **p* < .05, ****p* < .001**

The data presented in Table 4.65 shows that the beta coefficients, three variables such as teachers' critical thinking dispositions, qualification, and received principal's support significantly predicted on teachers' practices in promoting primary students' critical thinking skills. The adjected *R* squared value was 0.19 (*R*=.43). This indicates that 19% of the variance on teachers' practices in promoting primary students' critical thinking skills by the model, this is a medium effect according to Cohen (1992).

The Regression Equation is:

Teachers' Practices in Promoting Primary Students' Critical Thinking Skills **= *1.94*+1.97TQ+ 0.311 TCTD + 0.27PS**

According to the β weights, it was also concluded that the principals' support variable (β= .30, ***p <.001) appears to be the best predictor on teachers' practices in promoting primary students' critical thinking skills. Teachers' critical thinking dispositions (β= .23, ***p <.001) appears to be the second predictor and teachers' qualification (β= .13, *p < .05) appears to be the third predictor. (See figure 1).



= **Predicting on Teachers' Practices in Promoting Primary Students' Critical Thinking Skills (Statistically significant)**

Figure 1. Predictors Affecting on Teachers' Practices in Promoting Primary Students' Critical Thinking Skills

Table 14 Mean and Standard Deviations Showing the Primary Students' Critical Thinking Skills (N= 83)

Variable	Mean	SD	Achievement Level
Analysis	6.68	1.02	Moderate
Evaluation	6.44	1.02	Moderate
Inference	7.43	1.03	Moderate
Induction	6.56	.95	Moderate
Deduction	7.42	1.29	Moderate
Total Critical Thinking Skills	**6.91**	**1.06**	**Moderate**

Scoring range: < 5.85 = low 5.85- 7.97 = moderate > 7.97= high

According to the results, the level of the participant students' critical thinking skills was in moderate level.

Table 15 One-Way ANOVA Result Showing Mean Values of Students' Critical Thinking Skills by Teachers' Levels of Practices (N=83)

Variable	Group	N	Mean	SD	*F*	*p*
Students' Critical Thinking Skills	Group A	27	35.63	2.81	7.512	0.001**
	Group B	29	35.21	3.23		
	Group C	27	32.63	2.89		

Note: ***p < .001

Group A= group of teachers who had highest mean value in practices and critical thinking dispositions
Group B = group of teachers who had average mean value in practices and critical thinking dispositions
Group C= group of teachers who had lowest mean value in practices and critical thinking dispositions

Table 15 described that statistically significant difference was found students' critical thinking skills F (2,80) = 7.512, *** p < .001.

Table 16 One-Way ANOVA Result Showing Significantly Different Areas Students' Critical Thinking Skills by Teachers' Levels of Practices (N=83)

Variable		Sum of Squares	*df*	Mean Square	*F*	*p*
Students' Critical Thinking Skills	Between Groups	134.807	2	67.403	7.512	.001
	Within Groups	717.796	80	8.972		
	Total	852.602	82			

Table 17 Tukey HSD Result Showing Multiple Comparisons for Significantly Different Areas in Students' Critical Thinking Skills (N= 83)

Dependent Variable	(I) Level of Teachers' Practices	(J) Level of Teachers' Practices	Mean Difference (I-J)	*p*
Students' Critical Thinking Skills	Group C	Group A	-2.57*	.005
		Group B	-2.85*	.002

Note: ******p* **< .001

According to Table 17, Tukey HSD indicates that the practices of teachers who had the lowest mean value in teachers' practices significantly differed with that of the teachers who had average mean value in teachers' practices (***p* < .01, *d*=.80) and with that of the teachers who had the highest mean value in teachers' practices (***p* < .01, *d*= 0.90) in students' critical thinking skills.

Phase II: Qualitative Research Findings

Results of Open- ended Questions

Question 1. Describe your teaching methods used to teach critical thinking skills?

The response rate for this question was 76.41% (n= 243). With regard to this question, the following methods were taught by the participant teachers; practical method (51.85%), inductive approach method (31.68%), problem solving method (22.22%), storytelling method (21.81%), role-playing method (19.34%), cooperative learning method (19.34%),
Inquiry learning method (16.46%), brainstorming method (6.99%), debate (0.82%) and think-pair-share method (0.82%).

Questions 2 Describe the difficulties you encountered in promoting primary students' critical thinking skills?

The response rate for this question was 76.41% (n= 243). They said that there was no sufficient time for curriculum implementation ***concerning the curriculum*** (n=54, 22.5%), they said that they have insufficient teaching aids and there was no partition among classroom (n=11, 4.58%) concerning the ***physical aspects of classroom environment***. The difficulties teacher encountered with students are that students lack the courage to express their opinions (16.25%), in group discussion, some children may be uncooperative and uninterested (10.42%), students have limited vocabulary and general knowledge (9.58%) and they cannot reflect themselves and

build their own ideas well (2.92%). Some teachers (12.08%) have difficulties when students ask unexpected questions and answers and they cannot discuss well (9.58%).

Question 3. What support do teachers need to improve the teaching of critical thinking skills to primary school children?

The response rate for this question was 77.04% (n= 245). With regard to this question, the participant teachers need supports with ***facilities and equipment***; lesson-related teaching aids that were difficult to obtain (44.89%), providing books of philosophy that improve teachers' thinking and Quiz books (21.63%), provision of recording equipment, Video and Computers (14.28%), story books and comic books concerning moral and civic (4.89%). ***Relation with teachers***, they expected to get adequacy of teaching staff (25.32%), and conducting workshops on curriculum content and teaching methods (19.59%). They expected support form principal such as they want the principal to supervise lesson preparation, classroom instruction, and the use of teaching aids (6.12%), recognizing the teacher's efforts (4.08%), make a program that provides habit of reading for both teacher and student (1.22%), cooperating with parents and teachers (12.34%).

Results of Observation

The observation checklist was used to conduct classroom observations on teaching in promoting primary students' critical thinking skills. Teaching of every 9 selected teachers was observed at least 2 or 3 periods. These teachers were divided into three groups based on both mean values of teachers' practices and critical thinking dispositions such as high (Group A), average (Group B) and low (Group C). In observation study, concerning with ***Planning and Preparation***, the researcher found that teachers in group (A) read the teacher guide and prepared the lesson with clear expectations, with descriptors for each level of performance and describe the procedures clearly. They also prepared the questions for formative or summative assessment. It was also founded that some activities and questions represented high- order thinking. Concerning with ***Classroom Environment,*** they all established warm and respectful learning environment and they were confidence in language and behaviours. In teaching learning process, concerning ***Instruction***, they used equal control of teacher and students. They also listen actively to students' response and they gave equal opportunities for all students. It was also founded that they provided positive and constructive feedback to students' response. The researcher also found that the group of teachers who have highest mean in teaching practices and critical thinking dispositions used the following teaching-methods, story- telling method, questioning method, discussion method, inductive approach, demonstration method, observation method, practical method, brain-storming method and inquiry- based Learning method. It was also found that they asked the questions with correct and imaginative use of language and the questions concerning with facts, comparison, generalization, self- reflection, open-ended questions. They also asked not only all students but also each student. When they asked the open-ended questions, they gave enough time to think students and gave constructive feedback. It was found that they all praised students who provide unexpected answers.

The researcher found that teachers in group B read the teacher guide and prepared the lesson. They describe the procedure clearly and expressed the questions for formative assessment (concerning with ***Planning and Preparation***). It was also found that 1 out of 3 teachers used equal control of teacher and students but others use teachers' control and 2 out of 3 teachers listened actively student' response. Only 1 out of 3 teachers provided positive and constructive feedback to students' response. All teachers established warm and respectful learning environment and 2 out of teachers and their students were confidence in language and behaviours (***Classroom Environment***). It was also found that they used the following methods; lecture

method, questioning method, discussion method, brain-storming method, practical method and demonstration method. It was also found that they asked the questions concerning with facts, comparison, and generalization. They also asked open-ended questions and they asked questions to both all students and each student. One of the teachers gave time to answers students and gave feedback **(*Instruction*).**

The researcher found that teachers in group C read the teacher guide and do not prepare but teach with the instruction of teacher guide ***(Planning and Preparation***). It was also found that all teachers used teachers' control and 1 out of 3 teachers listened actively students' response but all teachers encouraged students to participate (***Classroom Environment***). They used the following teaching methods; lecture method, questioning method demonstration method. The researcher also founded that most asked the questions concerning with facts, comparison, and generalization and they asked to all students (***Instruction***).

Overall Findings of Teacher Interviews

The key themes that emerged of collected data from interview were; critical thinking dispositions, critical thinking abilities, attitude towards their profession, difficulties in teaching critical thinking skills and supports from administration.

Teachers said with ***critical thinking dispositions*** that they can critically think moderately. 5 out of 25 teachers said that if a teacher teaches students critical thinking skills, he must be a critical thinker. Fourteen of the participant teachers believed that they have a reasonable amount of confidence and they prepare the lesson when they teach students because they can teach with confidence. Teachers said that attending training and supervising principals can improve their confidence in teaching. Five out of twenty-five teachers described that they like learning new things and they study how the knowledge gained apply in real life. 14 out of 25 teachers described that if they read and accepted the news, they search for the source of the news. 40% of the teachers stated that when they decide what is right or wrong, they did not judge by own opinion and they considered different perspectives from different point of views. Seven out of 25 said that when they have a lot of work to do, they focused on the most important thing and allocated time systematically. 56% of the participants believed that working together was more effective than working alone. They had desired to do collective teaching activities.

It was founded that teachers have some ***critical thinking abilities***. Eleven out of twenty-five teachers stated that they keep records of daily activities and they always reflected their actions. 20% of the participant teachers said that they conclude the events based on relevant data and facts gathered. It was found that they acknowledged because of their parents' teaching and life experience, their ability to think would develop. 15 out of 25 teachers said that before doing a task, they were imaginative and they set plan well and think about alternatives. Ten of the participant teachers stated that they evaluate something according to its usefulness. It was also found concerning with ***attitude towards profession*** that all the participants were satisfied with their profession and they loved and appreciated teaching. They also loved their children.

Teachers also expressed ***their difficulties in teaching critical thinking skills***. Ten of the participants said that there is no sufficient time to implement the curriculum. They also have difficulties in teaching arts (performing and virtual). 7 out of 25 teachers said that they have difficulties in teaching because there are no sufficient teachers in their school. They explained that if they teach students thinking skills, they prepared lesson well and gave time students to give their opinion. Because of no sufficient teachers, they had to teach two or more classes simultaneously. And so, they did not prepare the lessons well. Some teachers said that they have not enough ability to teach students' thinking skills and it was found that they had desired to

attend effective training. Eleven out of 25 described that some students did not have basic knowledge and skills in reading, writing, and computing. Ten participants said that some students did not have courage to express their opinions. 9 out of 25 stated that there is no TV and Video to use in their teaching in their school.

18 out of 25 teachers acknowledged with ***supports*** that their principal supervised and gave advice their teaching and they said that teaching and helping of their principal was very valuable for them. All participants described that they want the Ministry to provide a separate classroom for each class. Six participants suggested that workshops for effective teaching would be planed for the teachers and when it was implemented, TEO or DTEO and the experience teachers supervised.

Conclusion and Discussion

A critical thinking disposition was defined as 'the personal traits, habits of mind, attitudes or affective dispositions which seem to characterize good critical thinkers' (Facione,1990). In this study, the critical thinking dispositions of primary teachers were explored by the CCTDI. The results indicated that the critical thinking dispositions of primary teachers in this study were moderate levels. The findings were similar to the results of the study by by Demirhan and Koklukaya (2014) found that the critical thinking dispositions of prospective science teachers' were in general at medium level.

The critical thinking dispositions of primary teachers were studied with personal data. By the finding, critical thinking dispositions of the primary teachers did not differ according to gender. This finding was similar with the finding of Karagol and Bekmezci (2015) in which critical thinking dispositions of teachers do not differ according to gender. The finding indicated that there was significant difference in critical thinking dispositions of the primary teachers depending on their academic qualification. This result match with the finding in which Onwuegbuzie (2001) stated that students' critical thinking skills are directly related to level of education. The findings indicated that there were also no significant differences in teachers' critical thinking dispositions according to service. The results of the findings were not similar to the results of the study by Sulaiman et al. (2017) who have found that critical thinking disposition of novice teachers are significantly higher than experienced teachers according to teaching experience. In addition, the results of the finding supported that age is not a significant predictor for critical thinking dispositions (Rodriquez, 2001). To enhance the critical thinking disposition in teachers, workshops and courses can be conducted on a regular basis to foster critical thinking disposition so that they often apply these skills in their daily life (Sulaiman et al., 2017).

Most quantitative studies concluded that principals exert indirect influence on student achievement through teachers and school culture; in essence, principals established conditions (eg. Professional learning opportunities, teaming) so that teacher make the direct effort toward improving student outcomes (Waters & Mc Nulty,2005 as cited in Printy 2008). In this research, the extent of principals' support in teaching to promote primary students' critical thinking skills was explored. The results of quantitative study showed that primary teachers received adequate support from their principal.Teachers and administrators continually strive to improve instruction effectiveness (Cotton, 1989). The observation also revealed that it was found that the lesson plan of group A teacher included in the instructional objectives that described higher order cognitive skills such as hypothesizing, analyzing, and evaluating skills. Although teaching guide had lesson plans for each content in the textbook, they created their own lesson plans using teaching guide.

They said that their principal instructed them to plan lesson by themselves and supervised their lesson preparation and gave advice and suggestion. Steps for critical thinking teaching includes five steps: (1) determining learning objectives, (2) teaching through questioning, (3) practicing before assessing, (4) reviewing, refining, and improving, and (5) providing feedback and assessment of learning. A lesson plan should reflect these five steps (Norwanto, 2011). In contrast, group C teachers did not prepare lesson plan and they used teacher guide only. It can be summarized that supervising the principal in teachers' lesson preparation is important in teaching critical thinking skills.

In interview study, the group A teachers answered that they sometimes used real object as teaching aids because the principal provided the resources and materials necessary. Teachers can secure relevant resources essential to teaching thinking skills. School libraries should be promoted into resource centers and made available any time for primary teachers and students (Dr San San Hla, 2008). In observation study, most of school did not have school library and a classroom library. In interview study, teachers answered that they had desire to read extensive text related to the lesson but there was no sufficient book for both teacher and students in their schools. Every school should have a library because it plays a great role in the life of students by serving as the store house of knowledge (Cyrille, 2019 as cited in Pearson & Reddy, 2021). The teachers also said that they imitated their principal' teaching styles and their principals asked to think about the ideas and encouraged to reflect on thinking practices in meeting or in informal conversation. It was also found that the principals of group A teachers encouraged teachers' collaboration in performing school activities and professional development activities and they also recognized teachers' performance and the principals collaborated with teachers in teaching learning process and in implementing school activities. Principle of collaborative leadership styles established professional learning community between teachers (Howard, 2020). Thus, this finding supported the assumption made by Sandra Love (2019) in which principals support teachers in developing a thinking culture across the campus to improve their thinking capacity, leading to increased productivity.

In this research, the practices of teachers in promoting primary students' critical thinking skills were also investigated. Finding indicated that primary teachers moderately practiced in promoting primary students' critical thinking skills. Because teaching is an extremely complex activity, Danielson's framework was useful in laying out the various areas of competence in which professional teachers need to develop expertise. The complex activity of teaching clustered into four domains; (1) planning and preparation, (2) the classroom environment, (3) instruction, and (4) professional responsibilities.

In this research, the critical thinking skills of the primary students were also investigated. Finding indicated that primary students were moderate level in critical thinking skills. Primary students participated in this study were also moderate level in analysis, evaluation inference, induction and deduction dimensions of critical thinking skills. As a result of students' attitudes to critical thinking, some students were not easily confused difficult problem and they can explain well what they are doing. According to Beyer (1995), critical thinker are tolerating ambiguity and respect clarity and precision. Therefore, some students have critical thinking attitude. According to quantitative research, most of students did not desire to argue with other when their answer was correct. It was needed to improve their fair-mindedness because critical thinkers assess all viewpoints with the same standards and do not base their judgments on personal or group bias or prejudice (Wilkinson, 2012). It was also found that most of students did not want to change their mind after they had made decision. To improve students' decision-making skill, teachers need to

promote student's critical thinking because decision making is the process that leads to actionable conclusions, critical thinking is the element that defines whether the choice in sound (Discover Business, 2022). The factors that provide primary teachers to improve in teaching students' critical thinking skills were academic qualification, teachers' critical thinking dispositions and obtaining from principal support. The finding also indicated that the more teacher practiced in teaching critical thinking skills, the more they promote students' critical thinking skills. This finding supported that the assumptions by Snyder and Synder (2008) in which critical thinking is a learning skill that requires relevant instruction and practices. The factors that provide primary teachers to improve in teaching students' critical thinking skills were academic qualification, teachers' critical thinking dispositions and obtaining from principal support. The finding also indicated that teachers' practice can promote students' critical thinking skills. This finding supported that the assumptions by Snyder and Synder (2008) in which critical thinking is a learning skill that requires relevant instruction and practices.

Suggestion

Based on the findings and the review of relevant literature, the following suggestions were drawn to improve teachers' practices in promoting primary students' critical thinking skills. In order to teach students' critical thinking skills, teachers need to understand the concept and foundations of critical thinking and should be provided teachers to understand critical thinking. Primary teachers should understand cognitive development of children and cognitive psychology well. Primary teachers should be confidence in their reasoning processes. Primary teachers need to desire to seek the truth and courage to overcome the difficulties in every situation and should have information management skills. Primary teachers should have the ability to consider the consequences of their behaviour and reflect their actions and also should be a model as a critical thinker for their students. Principals should supervise lesson planning of teachers whether their preparation is consistent with the purpose of education and can be implemented practically or not and teachers' implementing the curriculum. Principals should provide material support and advice teachers in making teaching learning materials and should create school-based professional learning community. Principals should encourage teachers to ask open-ended question and to provide time for students to think and to use brainstorming method, problem-solving method, discussion method, modeling as a critical thinker, story-telling method to encourage students think critically. Principals should organize debate competitions in their school. Primary school principals and teachers should be provided training workshop concerning with nature of critical thinking and teaching method for improving students' critical thinking skills. The empower concerning with using ICT of principals and teachers should be improved. Classrooms should be the separate spatial classroom. There should be a school library or a classroom library which has sufficient books for teachers and students in primary school. Teacher-classroom ratio should be considered to promote students' critical thinking skills. Teacher educators need to be model as a critical thinker and to use the method of teaching and assessment that can improve students' critical thinking. The teacher education program that supports critical thinking should be provided to teachers based on needs of teachers. Primary teachers should have training to use and foster critical thinking in their teaching learning process and cooperate with parents for their students' thinking skills.

Limitations of the Study

This study is geographically limited to Thegon Township, Bago Region. The participants of this research are three hundred and eighteen teachers who taught in primary level for quantitative study. Based on the results of quantitative study, nine teachers were selected for

observation study and twenty- five teachers were selected for interview. Eighteen- three students were selected to test critical thinking skills.

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