



Self-esteem of Ethnic Students: Developing Measurement Model and Testing Measurement Invariance

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Abstract

The self-esteem of each individual affects a person's behavior, and it is important for daily living. The objectives of this study were (1) to investigate the fit of the self-esteem measurement model for ethnic students to the empirical data, (2) to test the measurement invariance of the self-esteem measurement model across diverse ethnic groups of students and (3) to compare the extent of self-esteem of ethnic students across their backgrounds. The participants were 688 ethnic high school students who were studying in the second semester of the academic year 2018 in four provinces. The instrument of this study was the 5-rating scale questionnaire with Cronbach's alpha reliability coefficients ranged from 0.90 to 0.95. Data analysis was done by descriptive statistics, inferential statistics and structural equation modeling.

The results revealed that (1) the theoretical measurement model fitted the empirical data with acceptable fit indices ($p = 0.14$, CFI = 0.99, RMSEA = 0.04, SRMR = 0.01). (2) the measurement model of the self-esteem was for different groups of ethnic students, was invariant in terms of measurement error and (3) the comparison of the self-esteem levels of ethnic students across backgrounds indicated that the scales of satisfaction of self-ability, family and society had statistical significance at the level of .05.

Introduction

Youths are important generation. The educational institutes play an important role in providing education and training to youths to develop them in terms of knowledge and life skills so that they can live their own life and help drive the nation. Most importantly, they should be developed to secure self-esteem and belief in their knowledge and abilities to live in current society that is changing rapidly. Self-esteem is the main factor

in the individual's behavior, and it is effective in developing abilities and behaviors. Moreover, according to the five-tier model of human needs, self-esteem is at level 4 that can refer to the psychological need for pride from own-self and others. (Groen & Hyland-Russel, 2010; Hoban & Hoban, 2004; Maslow, 1970) For this reason, the educational institutes should develop their learners to realize their own-worth when studying in the foundation years.

The variable of self-esteem has been studied and developed continuously, whether it be humanities, social science, or education, because it is a variable that affects the individual's behaviors directly and indirectly. It also influences other psychological variables. Psychologically, self-esteem is agreed to be the main factor that affects children's emotions, society and learning. Self-esteem is valuable because it basically works as a mean of how to see life, how to adjust the status in society and emotion. People can be proud of themselves when they know how to accept their own selves by acknowledging the meaning what they are, in accordance with how they see themselves in an ideal or according to the way that they expect to be, concerning feelings, points of view, belief in their own identity and value and self-faith. Acknowledging the relationship with other people can help them to be proud of themselves. When people think they realize the truth equally or closely to themselves in an ideal, the more they have self-esteem. In other words, self-esteem is a difference between the variance of a person's real character and the character that they expect to be. Furthermore, different events or situations that happen in life have an influence on self-esteem. It can be explained that if the situation leads to achievement, it helps promote more self-esteem. On the contrary, the situation that leads to failure can stimulate feelings of incompetence or ineffectiveness. Consequently, it lowers the self-esteem of individuals. The character of a person that is gradually developed comes from the combination of thoughts, beliefs and experience. (Roger, 1951) This combination makes individuals have self-imagination and self-concept. They evaluate self-conception by judging from the accomplishment and the abilities according to their personal value. Eventually, self-esteem can be developed.

Self-esteem is a positive feeling the persons have toward themselves. People can respect and accept their own importance and abilities and try to use them to achieve their goals. Self-esteem allows people to have self-respect, self-faith as well as have respect to others. They can live their life with clear goals. It is considered that when comparing real selves with the one in an ideal, people can realize their self-esteem. People who see themselves contradict their real selves likely have low self-esteem. People who have thoughts in parallel with their ideal, they have high self-esteem.

People who have high self-esteem acknowledge their own selves with actual reality. They believe in their thoughts and are able to give clear reasons to support

their decision, confident in their own actions, or decisions they have made. They are brave to think and express their ideas appropriately, having creative ideas and determination to achieve life goals. They have a responsibility not only for themselves but also for other people, have stable mental health and always be optimistic. They are able to maintain good relationships with others. Therefore, people who have high self-esteem can live a happy life, having less worry. They tend to be successful in life. Self-esteem works as a mental immune system in helping people to have energy when facing troubles, rendering energy to eliminate all badness in life. The factor to help people realize their own self-esteem is the opportunity to use their own ability to take care of themselves and to provide assistance to others, and then they receive some trustworthiness, importance and faith in return, most importantly the success of what they expect

Self-esteem is important for humans because it is the basic psychological need which helps humans live with pride. It can indicate the quality of life. Pride of own selves is the most important to create quality behaviors. People with pride are happy. They don't get stress or worry too easily. They are confident and realize that they have value and ability. These people are not shy about disclosing their own identity. They also have a feeling of high security, so criticism from other people cannot harm them, even though they use less self-protection strategy. They don't feel they are more inferior than others. They are confident in expressing ideas, likewise accepting the ideas of others. People with self-esteem are creative and active. They try hard to face all the problems and live their lives reasonably. They easily accept the difference between the individual and tend to be proud of themselves and usually be successful in life. Moreover, they know how to communicate properly and always begin their relationship with others. They have good mental and physical health. (Coopersmith, 1981; Jaengaksorn, 2018; Podesta, 2001)

Self-esteem affects human behaviors. As to say, a person who has high self-esteem is confident in expression, likely to be happy in his way of life, confident to speak, and makes a decision. On the other hand, a person with low self-esteem always encounters some problems in life, especially when living in a diverse society. This person is not courageous to express his thoughts and behavior, having a feeling of an inferiority complex and lower self-evaluation comparing to others. This is considered a crucial problem of existence in

society. (Neustadt, Chamorro-Premuzic & Furnham 2006), The principle of self-esteem development for youths is to create activities that can promote their self-decision as well as encourage them to create real achievement. The activities should involve the discussion, alternative choices and reflection of their thoughts about each decision they have made. Activities should provide encouragement when they feel despairing and regularly give them motivation. (Department of Mental Health, 2000; Katz, 1993) It is suggested that self-esteem is the major factor of various behaviors of individuals. It also affects the abilities to face depression, all worry and how to handle all problems in life.

The present society consists of diverse members, particularly the northern part of Thailand, where there are many ethnic groups living in the school areas of Chiang Mai, Chiang Rai, Lamphun and Mae Hong Son. Consequently, each school of these areas has students who are from various ethnic backgrounds, having their own identity and culture, including Shan, Lua, Lawa, Karen, Pga K'nyau, Paluang, Dara-ang, Yang, Akka, Lahu, Hmong, Lisu, Kachin as well as Burmese, Laos, and Cambodian who migrated to work in Thailand. These groups are judged by other students that they are the minority, and they are mocked among students. Some of them have been looked down on and bullied. Due to these reasons, ethnic students lack an opportunity to express their potentials in full effort. Most of them are not confident in their conduct and social life. These problems reduce human's value and equality. Besides, it reflects that the ethnic group students may be seen as low self-esteem.

Previous researches haven't directly shown the studies about the scales of self-esteem of ethnic people who have a special identity. Therefore, it is a good opportunity to conduct the study about the level of their self-esteem, particularly with the students at high school level who are teenage and found themselves busy preparing for university admission, where the learning is so much different from the schools. The obtained results will be used as fundamental data for developing the self-esteem of ethnic students. Moreover, the data can be used for setting a plan to adjust behaviors and to encourage self-esteem among youth who will play an important role in developing community, society, and the country. This study aims to develop the measurement model to use as an instrument to measure the states of self-ability awareness of ethnic students and to test the measurement invariance in order to have a measurement

model that can be used with students from various tribes whether they are different from each other or not with the purpose of developing them to be beneficially used in the future.

Objectives

1. To investigate the fit of the self-esteem measurement model for ethnic students to the empirical data.

2. To test the measurement invariance of the self-esteem measurement model across diverse ethnic groups of students.

3. To compare the extent of self-esteem of ethnic students across their backgrounds.

Research Scope

The populations of this research were high school students who were studying in Chiang Mai, Chiang Rai, Lamphun, and Mae Hong Son provinces, which are provinces with largest number of ethnic students. The ethnic students were divided into 3 groups according to their resemble backgrounds: Plane land group (Shan), Hill tribe group (Karen, Hmong, Akka, Lahu) (The Princess Maha Chakri Sirindhorn Anthropology Centre, 2018), and Displaced person/migrants/moved with family (Burmese, Laos, Cambodian). The high school students were chosen because they were at the stage of life with a full of worry about their self-personality, usually compare themselves with others. Some of them are doubtful about their own backgrounds. Most importantly, it was a transition period for students at this educational level to be under pressure in preparing themselves for university admission, where they might come across various societies that are different from what they have. Therefore, the information obtained from this study would be beneficial for planning to develop students' pride.

Conceptual Framework

The framework of this research is derived from related literature, suggesting that self-esteem consisted of 3 elements, including (1) self-ability satisfaction, (2) Self-family satisfaction and (3) Society satisfaction. (Abraham, 2008; CooperSmite, 1981; Jaengaksorn, 2018; Neustadt, Chamorro-Premuzic, & Furnham, 2006; Stinson, Logel, Zanna, Holmes, Cameron, Wood & Spencer 2008; Weisbuch, Sinclair, Skorinko & Eccleston, 2008;

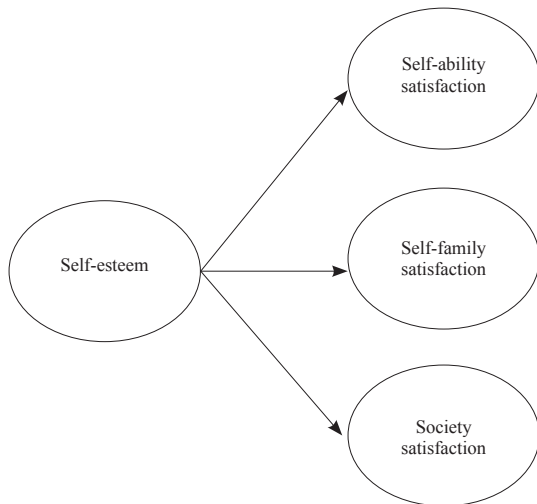


Figure 1 Conceptual Framework

Research methodology

The population was ethnic high school students (grade 10-12) in Chiang Mai, Chiang Rai, Lamphun, and Mae Hong Son provinces, enrolled in semester 2 of the academic year 2018.

The participants were ethnic high school students. The size of the participants was determined for structural equation modeling (SEM) which requires a large sample size. In order to reduce the problem of the deviation of the normal distribution, the ratio scale between the size of the participants and parameter estimation was used. The size of the participations consisted of at least 10-20 participants per 1 parameter. (Hair et al., 2006). There were 6 parameters being estimated in this research. Therefore, at least 120 participants was considered enough to provide reliable estimates. Because of low response rate, the author considered the number of sample of 800 in order to increase the adequate sample size and random sampling was used.

1. Research instrument and data collection

The research instrument of Jaengaksorn (2018) was adopted in this research. The instrument was a questionnaire concerning the self-esteem of ethnic students. It was divided into 2 parts. Part 1 consisted of the basic information of the respondents. Part 2 consisted of questions reflecting the self-esteem of ethnic students. A 5-point Likert Rating scales was used, where 1 = 'not at all close to myself', 2 = 'slightly close to myself', 3 = 'moderately close to myself', 4 = 'very close

to myself', and 5 = 'extremely close to myself'. The Cronbach's alpha coefficients for the three dimensions of the self-esteem, ranged from 0.90 to 0.95. The detail of the instrument and sample of questions are shown in Table 1.

Table 1 Details of the instrument.

instrument	Basic elements	Samples of questions
1	Society satisfaction (Cronbach's Alpha = 0.94)	My self-ability is not different from others I sometimes want to become the other person. (*negative) I am confident in speaking in public.
2	Self-family satisfaction (Cronbach's Alpha = 0.95)	I am very lucky to be born as one of the members of the family. Many times I feel disgraceful to say I am from highland. (*negative) My father, mother, or guardian take good care of me. It is not different from another family even though my house is in a remote area.
3	Society satisfaction (Cronbach's Alpha = 0.94)	I don't see myself different from other people in society. I am brave to get to know the strangers. When I have a chance, I will dress in my tribal costumes.

*Instrument Reliability (Cronbach's Alpha = 0.95)

Source: Jaengaksorn (2018)

2. Data Collection

Data was collected from 688 high school students. The highest number of respondents was 11th grade students (34.30%). There were 348 students of the middle-sized schools (50.60%), 252 migrant students from Myanmar, Laos, and Cambodia living with their parents (36.60%) and followed by the hill tribe students (Karen, Hmong, Akka, Lahu). There were 338 students who had a GPA between 3.00-3.49 (49.10%), followed by those having a GPA of 3.50 or above 3.50 (29.70%). The detail is shown in Table 2.

Table 2 Samples classified by educational levels

Data		Class levels			total
School size	Middle	10 (%)	11 (%)	12 (%)	
		121 (52.40)	119 (50.40)	108 (48.90)	348 (50.60)
Large		110 (47.60)	117 (49.60)	113 (51.10)	340 (49.40)
	Total	231 (100.00)	236 (100.00)	221 (100.00)	688 (100.00)
Ethnic groups	Thai Plane land (Shan)	54 (23.40)	83 (35.20)	80 (36.20)	217 (31.60)
	Thai Hill tribes (Karen, Hmong, Akka, Lahu)	91 (39.40)	65 (27.50)	63 (28.50)	219 (31.80)
	Migrants/moved with parents (Burmese, Laos, Cambodian)	86 (37.20)	88 (37.30)	78 (35.30)	252 (36.60)
	Total	231 (100.00)	236 (100.00)	221 (100.00)	688 (100.00)

Table 2 (Continued)

GPA	13	6	9	28
Lower than 2.50	(5.60)	(2.50)	(4.10)	(4.10)
2.50 - 2.99	43	45	30	118
	(18.60)	(19.10)	(13.60)	(17.20)
3.00 - 3.49	109	111	118	338
	(47.20)	(47.00)	(53.40)	(49.10)
3.50 and upper	66	74	64	204
	(28.60)	(31.40)	(29.00)	(29.70)
Total	231	236	221	688
	(100.00)	(100.00)	(100.00)	(100.00)

Results

The results were divided into 3 parts: (1) The results of the examination of the fit between the self-esteem measurement model and the empirical data., (2) The results of measurement invariance of the self-esteem measurement model across different ethnic groups of students, (3) The comparison of self-esteem ethnic students across their backgrounds. The findings are as follows;

1. Part 1: The results of the examination of the fit between the self-esteem measurement model and the empirical data.

The correlation coefficients among the 3 variables; (1) self-ability satisfaction, (2) self-family satisfaction and (3) society satisfaction ranged from 0.80-0.84 and were statistically significant.. The detail is shown in Table 3.

Table 3 The correlation coefficients among variables

variables	1	2	3
1. Self-ability satisfaction	1.00		
2. Self-family satisfaction	.84*	1.00	
3. Society satisfaction	.80*	.80*	1.00
Mean	3.70	3.69	3.79
S.D.	0.61	0.65	0.65

* p < .05

The measurement model of self-esteem for ethnic students was tested using confirmatory factor analysis. This model consisted of 3 factors: self-ability, self-family, and society satisfaction. The fit indices included Chi-square = 2.13, Probability = 0.14, RMSEA = 0.04, indicating that the theoretical measurement model fitted the empirical data, as it is shown in Table 4 and Figure 2.

Table 4 The confirmatory factor analysis of the self-esteem measurement model of ethnic students.

Factors	factor loading	SE	t	R ²
Self-ability satisfaction	0.93	0.00	241.18*	0.87
Self-family satisfaction	0.91	0.01	103.34*	0.83
Society satisfaction	0.87	0.01	77.35*	0.75

$\chi^2(1, n = 688) = 2.13, p = 0.14, CFI = 0.99, RMSEA = 0.04, SRMR = .01$

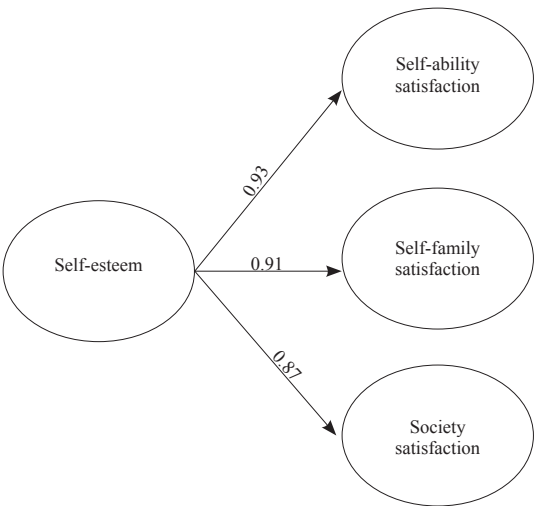


Figure 2 The self-esteem measurement model

2. Part 2: The results of measurement invariance of the self-esteem measurement model across-different ethnic groups of students.

The results of testing measurement invariance revealed that the measurement model was invariant in form, factor loading and error variance. However, there was a variation in the parameter variability of latent variables across groups of ethnic students. The detail is shown in Table 5.

Table 5 Testing measurement of invariance of the research measurement model in schools of different contexts

Hypothesis	χ^2	df	χ^2/df	p	CFI	RMSEA	SRMR
1. H _{form}	3.77	4	0.94	0.44	1.00	0.00	0.01
2. H _{form, Λx}	3.89	8	0.49	0.87	1.00	0.00	0.01
3. H _{form, Λx, Θ}	7.17	14	0.51	0.93	1.00	0.00	0.04
4. H _{form, Λx, Θ, ξ}	16.08	16	1.00	0.45	1.00	0.01	0.25
Hypothesis Test Results							
Hypothesis	$\Delta\chi^2$	Δdf	p	Results			
2-1	0.13	4	0.99	The model is invariant in form and factor loading.			
3-2	3.28	6	0.77	The model is invariant in form, factor loading, and error variance.			
4-3	8.91	2	0.01	The model has variation in the parameter variability of latent variables			

3. Part 3: The comparison of self-esteem ethnic students across their backgrounds.

The results of the comparison of self-esteem among ethnic students across their ethnic groups showed that self-ability satisfaction, self-family satisfaction, and society satisfaction were at a high level. The matrix variance-covariances of self-ability, self-family and society satisfaction were statistically different across

ethnic groupsat .05. ($F = 1.63$ $df_1 = 48$ $df_2 = 553852.91$ $p = .00$) The detail is shown in Table 6.

Table 6 The comparison of the scales of self-esteem among ethnic group students distinguished by their backgrounds

Ethnic group	grade	n	Self-ability satisfaction		Self-family satisfaction		Society satisfaction	
			M	S.D.	M	S.D.	M	S.D.
Thai Plane land	10	54	3.58	0.63	3.59	0.71	3.78	0.68
	11	83	3.77	0.71	3.77	0.71	3.89	0.75
	12	80	3.70	0.58	3.69	0.59	3.78	0.57
	Total	217	3.70	0.64	3.70	0.67	3.82	0.67
Hill tribes	10	91	3.62	0.53	3.59	0.55	3.68	0.56
	11	65	3.92	0.58	3.97	0.62	3.98	0.68
	12	63	3.61	0.48	3.53	0.50	3.68	0.49
	Total	219	3.71	0.55	3.69	0.59	3.77	0.60
Migrants	10	86	3.76	0.59	3.72	0.65	3.82	0.67
	11	88	3.79	0.70	3.78	0.76	3.86	0.74
	12	78	3.54	0.61	3.53	0.63	3.60	0.57
	Total	252	3.70	0.64	3.68	0.69	3.77	0.67
Total	10	231	3.67	0.58	3.64	0.63	3.75	0.63
	11	236	3.82	0.67	3.83	0.71	3.90	0.73
	12	221	3.62	0.57	3.59	0.58	3.69	0.55
	Total	688	3.70	0.61	3.69	0.65	3.79	0.65

Remarks: Box's $M = 79.30$ $F = 1.63$ $df_1 = 48$ $df_2 = 553852.91$ $p = .00$
 Bartlett's: Approx. Chi-Square = 1599.55 $df = 5$ $p = .00$
 Levene's Test: Side 1 $F = 2.52$ $df_1 = 8$ $df_2 = 679$ $p = .01$, Side 2 $F = 2.36$ $df_1 = 8$ $df_2 = 679$ $p = .02$, Side 3 $F = 2.14$ $df_1 = 8$ $df_2 = 679$ $p = .03$

The results of the MANOVA analysis found that the Vector Mean of self-esteem of each ethnic group was statistically different across grade at 0.5. (Roy's Largest Root Value = 0.02, $F = 2.63$, Hypothesis $df = 4$, Error $df = 679$, $p = 0.03$.) The self-ability satisfaction of 10th grade students, plane land group (Shan) was the lowest. However, the self-ability satisfaction of the 12th graders (Matthayom 6). was at the highest The 11th grade (Matthayom 5). students of hill tribe group (Karen, Hmong, Akka, Lisu) had the highest self-ability satisfaction. The three groups of students had the highest self-family satisfaction when they were in grade 11th (Matthayom 5), as same as society satisfaction. On the other hand, self-ability, self-family, and society satisfaction were lower from grade 11th (Matthayom 5) when all 3 group students moved to study in 12th grade (Matthayom 6). The detail is shown in Table 7 and Figure 3.

Table 7 The analysis of MANOVA on self-esteem distinguished by their backgrounds

Variables		Value	F	Hypothesis df	Error df	P
grade	Pillai's Trace	0.03	3.56	6	1356	0.00
	Wilks' Lambda	0.97	3.57	6	1354	0.00
	Hotelling's Trace	0.03	3.59	6	1352	0.00
	Roy's Largest Root	0.03	6.95	3	678	0.00
Ethnic groups	Pillai's Trace	0.01	0.76	6	1356	0.60
	Wilks' Lambda	0.99	0.76	6	1354	0.60
	Hotelling's Trace	0.01	0.76	6	1352	0.60
	Roy's Largest Root	0.01	1.48	3	678	0.22
grade *						
ethnic groups	Pillai's Trace	0.02	1.24	12	2037	0.25
	Wilks' Lambda	0.98	1.24	12	1791.465	0.25
	Hotelling's Trace	0.02	1.24	12	2027	0.25
	Roy's Largest Root	0.02	2.63	4	679	0.03*

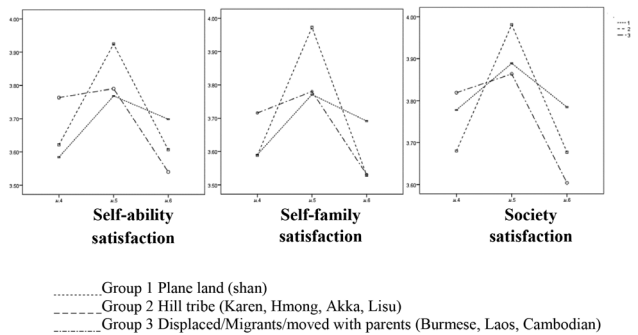


Figure 3 The comparison of self-esteem distinguished by ethnic tribes

Discussion

1. The self-esteem scale, which is subdivided into three components comprising self-ability satisfaction, self-family satisfaction, and society satisfaction, was used to measure the self-esteem of ethnic students in this study. The validity was tested using the confirmatory factor analysis, suggesting that the highest weight was given to the component of self-ability satisfaction, which is in line with the self-esteem concept (Abraham, 2008; Coopersmith, 1981; Maslow, 1970)

2. The testing of measurement invariance of the self-esteem scale of students of different ethnic groups revealed that the scale was invariant in terms of shape, factor loading parameter, and measurement error parameter, but it was variant in terms of variance parameter of latent variables. Based on the test results, it was concluded that the measurement of the self-esteem of students could be used to provide valid score among ethnic groups of, despite ethnic differences. Specifically, the measurement models of self-esteem among the three

ethnic groups were identical, with the expectation that the three groups had different variation among the three subdimension of self-esteem

3. The results of the analysis of the self-esteem of ethnic students with regard to the self-ability component showed that the students recognized their self-esteem and viewed themselves as not significantly different from their peers. Besides, almost all ethnic students in this study were able to study without difficulty and were content with their own selves at a high level. This corresponded with the analysis of the components which found that the weight of the self-esteem component was given the most, reflecting that ethnic students did not feel that they were different from other groups of students and saw that their potential was comparable to students in general regardless of grade level. In addition, it showed that ethnic students were proud of their origin and satisfied with their family's financial status. This could be due to the fact that the ethnic student participants had been studying in school for a long time from the elementary level to their present level, so they did not see themselves as different from other students. In addition, ethnic students were presented with factors to help them feel proud of themselves and opportunities to use their abilities to care for themselves and support others, gain trust, and achieve their goals. These factors and opportunities helped to promote the self-esteem of ethnic students. (Coopersmith, 1981; Derlega, Winstead & Jones, 2005; Papadopoulos, 2014; Podesta, 2001; Roger, 1951)

Suggestions

1. The results showed that 10th - 12th grade students (Matthayom 4 - 6) had low self-esteem in all components of the scale (self-ability satisfaction, self-family satisfaction, and social satisfaction). Therefore, it is suggested that schools should pay attention to these students, especially 12th graders (Matthayom 6) who will experience changes in a number of aspects as they pursue their study at the higher education level. If students of ethnic groups have not developed their self-esteem by the time they enter larger educational institutes with more variety in student backgrounds, they shall experience problems in education and daily living.

2. In measuring the levels of self-esteem of ethnic students, it is recommended that priority be given to the recognition of one's own self-ability satisfaction, as reflected on the weight analysis of the three components of the self-esteem scale and the concept of self-esteem

development which focuses on the importance of recognizing one's own self-esteem as it is developed more easily when compared to family appreciation and social appreciation. However, the school should support and promote students' self-esteem in all components.

3. Further research should be conducted to determine which factors cause changes in the self-esteem levels of students in different grades in forms of a long-term study, which analyzes the development of self-esteem in students since starting the junior high school level to completing high school. In the meantime, data collection should be in-depth, employing both quantitative and qualitative methods in order to provide clear explanations and more details from the study.

4. The participants in this study were limited to ethnic students from Chiang Mai, Chiang Rai, Lamphun, and Mae Hong Son, which are provinces concentrated with students of ethnic backgrounds. Further studies should be done in all regions of the country in order to obtain comprehensive information that can be used to explain the overall phenomenon of the country and to compare differences among students in different educational zones with diverse backgrounds in terms of religion, language, and other aspects.

5. It is interesting to conduct further study to understand why 12th grade (Matthayom 6) students had lower self-esteem compared to the 10th and 11th grade (Matthayom 4-5) students.

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