Cultural skills of industrial students at vocational certificate level

Competencias culturales de los estudiantes industriales a nivel de certificado vocacional

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Contents

ABSTRACT:

This research were to study and compare: 1) the cultural skills of industrial students, classified by educational level, and 2) the construct validity of the cultural skills of industrial students. The results showed that: 1) industrial students have overall cultural skills at a good level, and industrial students who differed in educational levels have different overall cultural skills, with statistical significance at the level of 0.05, and 2) the model of cultural skills of industrial students has construct validity.

Keywords: Cultural Skills, Industrial Students, Construct validity, One-Way Analysis of Variance

RESUMEN:

Esta investigación fue para estudiar y comparar: 1) las habilidades culturales de los estudiantes industriales, clasificadas por nivel educativo, y 2) la validez de construcción de las habilidades culturales de los estudiantes industriales. Los resultados mostraron que: 1) los estudiantes industriales tienen habilidades culturales generales en un buen nivel, y los estudiantes industriales que difieren en los niveles educativos tienen habilidades culturales generales diferentes, con significación estadística al nivel de 0.05, y 2) el modelo de habilidades culturales de Los estudiantes industriales tienen validez de constructo.

Palabras clave: habilidades culturales, estudiantes industriales, validez de constructo, análisis de varianza de una vía

1. Introduction

Thai society is a multicultural society, because it consists of many people of different nationalities, religions, and cultures. In real life, Thai people live together, speaking Thai in various dialects. In addition, we have friends who are Christian, Islamic, and Hindu. Therefore, culture is a way of life which is caused by the learning process, actioned by living with others on a daily basis, rather than being considered as an ideal model which has a solid nature and unique properties (Thongthammachart & et al, 2015). The meaning of culture is not separated from the learning process and from understanding the differences.

The learning process will lead to a reduction in passion and self-gratification, and towards respect for other people's ways of life. Considering the culture in this way, it is an appropriate long-term alternative to the confrontation of conflict. The process of learning cultural differences will make the gap of incomprehensibility and ignorance between fellow human beings shrink.

The emergence of the ASEAN community indicates that Thai society in the future will have many changes that affect the way of life. Students, unavoidably, must learn adaptability and preparation. The issues that young students should prepare themselves to be ready to cope with in future situations are as follows: 1. Students should be interested and aware of the consequences of the integration of various countries into the ASEAN community, in terms of benefits and precautions; 2. The emergence of the ASEAN Community makes modern society reflect more of a multicultural society, hence, students need to adjust the learning process, the attitudes of being aware of nationality, and the existence of the Thai government; 3. Thailand needs to adjust the learning paradigm to be more modern, with defined goals; 4. The new generation of students need to be aware of nationality and national existence; 5. The development of disciplined people and a focus on the ability to live within multiculturalism is required; 6. The importance of the ability to work with others and to be able to work with people from different cultures; 7. Learning about neighboring countries, in terms of both history and culture, in order to create a better understanding between them, and 8. The creation of opportunities to learn foreign languages and to increase English language skills to be able to communicate. Therefore, students must be aware of understanding and setting clear life goals in order to make themselves ready for Thailand to become an member of the ASEAN Economic Community in 2015 (Weerungkorn, 2002).

Cultural skills are a lifelong learning process for people who see the importance of being together. The development of cultural skill are not a far-off or unrealistic situation beyond the ability of most people in Thai society. Cultural skills are important factors which will make students succeed in the future. In the past, the ability to study in the classroom was the only indicator of student success. Cultural skills are skills that need to be systematically trained as well as other skills. Guidelines for creating and developing cultural skills must start from a young age (Public Organisation , 2014).

Cultural skills focus on psychosocial (cultural) assessment and human physical ability. Humans are able to create cultures and need to recognize them in daily life so they can maintain it for the next generation to inherit. These cultures are both fundamental factors in life and are related to other needs. In addition, it is necessary for biological survival, such as love, warmth, having friends, social organization, beliefs, religions, arts, and traditions. However, it can be seen that having a culture makes humans different from all animals because humans need to meet basic biological needs and cultural needs. Human beings are creative (Jeffreys, 2010; Deardorff, 2006; Sharon, 2008; Campinha-Bacote, 2002). They can produce tools, and the pattern of society has changed continuously since human beings arose. They have created many cultures that make the lives of humans different. Thai culture and tradition is something that Thai people have long practiced, and most Thai people consider Thai culture and traditions to be good for Thai people. Thai culture is different from others and, therefore, has received a lot of attention from foreigners. At the same time, foreign culture is pouring into Thailand. Teenagers or new generations turn to foreign cultures and neglect to follow Thai culture. This makes the practice of being in accordance with the Thai culture and traditions become minimized (Lertchanrit, 2016; U-krit, 2011).

From the above, the researcher studied and compared the cultural skills of industrial students, classified by educational level, and analyzed their cultural skills, in order to examine the structural validity of the cultural skills model of industrial students at the Vocational Certificate level in the Bangkok area. The researcher synthesized the elements, and found that there were 5 main components, as follows: 1) cultural sensitivity; 2) understanding of self; 3) understanding of others; 4) vision, and 5) adaptation to information that has been further developed for industrial students.

2. Objective

2.1. To study and compare the cultural skills of industrial students at the Vocational Certificate level in the Bangkok area, classified by educational level, and

2.2. To examine the construct validity of the cultural skills of industrial students at the Vocational Certificate level in the Bangkok area.

3. Methodology

3.1. The population and the samples

The population comprised 4,142 industrial students in Bangkok in 2016.

The samples were 435 industrial students in Bangkok in 2016, selected by stratified random sampling (Information Technology and Vocational Manpower Center, 2015).

3.2. The instrument

The instrument for the data collection was a questionnaire consisting of 2 parts. Part 1 was for personal information and the general status of the respondents, and was in the form of a check list. Part 2 was about cultural skills, using 5 levels of rating (Rating Scales). The questionnaires were approved for content validity by 5 experts, with reliability of 0.95. The IOC was 0.80 - 1.00.

3.3. Data collection

In this research, the researcher conducted data collection by sending a cooperation letter to technical colleges in the Bangkok area. The researcher requested permission from the school administrator to allow the industrial students at the Vocational Certificate level to answer the questionnaires.

3.4. Data analysis

In this research, the researcher used data analysis methods as follows.

3.4.1 General information of industrial students at the Vocational Certificate level in the Bangkok area was analyzed by using frequency, distribution, and percentage.

3.4.2 Cultural skills of industrial students at the Vocational Certificate level in the Bangkok area were analyzed by mean and standard deviation.

3.4.3 Comparisons of the cultural skills of industrial students at the Vocational Certificate level in the Bangkok area, classified by educational level, was analyzed by one-way analysis of variance (One Way ANOVA), and compared by pair.

3.4.4 Examination of the structural validity of the cultural skills model of industrial students at the Vocational Certificate level in the Bangkok area was done by following these steps:

1) Checking the appropriateness of data with the statistics- Kaiser-Meyer-Olkin (KMO). The KMO value must be greater than 0.5 to be appropriate (Ungsuchote, Somtawin , & Pinyophanuwat, 2009); the test of the relationship of various variables using Bartlett's test of sphericity statistics, if found to be statistically significant, can be used to analyze the elements (Kaiyawan, 2013).

2) Checking the structural validity of the cultural skills model of industrial students by analyzing data by analyzing confirmatory elements (Confirmatory Factor Analysis).

4. Results

4.1. List of symbols in the research

$\overline{X}$	represents	Mean
S.D.	represents	Standard Deviation
RMSEA	represents	Root Mean Square Error of Approximation
GFI	represents	Goodness of Fit Index
AGFI	represents	Adjusted Goodness of Fit Index
VC.1	represents	Vocational Certificate level 1
VC.2	represents	Vocational Certificate level 2
VC.3	represents	Vocational Certificate level 3
Sk	represents	Cultural Skills of Industrial Students
Sk1	represents	Cultural Sensitivity of Industrial Students
Sk2	represents	Understanding of Self of Industrial Students
Sk3	represents	Understanding of Others of Industrial Students
Sk4	represents	Vision of Industrial Students
Sk5	represents	Adaptation of Industrial Students

4.2. General information of respondents

Table 1
Frequency and percentage of respondents classified by grade level of study

Level of Study	Number	Percentage (%)
Vocational Certificate Level 1	1 79	4 15 . 1
Vocational Certificate Level 2	126	2 96 . 8
Vocational Certificate Level 3	1 30	89 . 29
Total	435	100.00

Source: authors

From Table 1, there were 435 respondents. When classified by grade level, the study found that there were 179 first year Vocational Certificate students, representing 41.15 percent, 126 second year Vocational Certificate students, accounting for 28.96 percent, and 130 third year Vocational Certificate students, representing 29.89 percent.

Table 2
Mean and standard deviation

Cultural Skill	(n = 435)							
	VC.1 (n. = 179)		VC.2 (n. = 126)		VC.3 (n= 130)		Total (n. = 435)	
	$\overline{X}$	S.D.	$\overline{X}$	S.D.	$\overline{X}$	S.D.	$\overline{X}$	S.D.
1. Cultural Sensitivity	3.82	0.62	3.89	0.61	4.01	0.54	3.90	0.60
2. Understanding of Self	3.83	0.64	3.90	0.59	3.98	0.64	3.89	0.63
3. Understanding of	3.93	0.61	3.97	0.54	4.02	0.54		0.57

	First year X	First year S.D.	Second year X	Second year S.D.	Third year X	Third year S.D.	Total X	Total S.D.
Others							3.97	
4. Vision	3.89	0.64	3.92	0.59	4.06	0.57	3.95	0.61
5. Adaptation	3.85	0.66	3.98	0.61	4.03	0.57	3.94	0.62
Total	3.86	0.63	3.93	0.58	4.02	0.57	3.93	0.60

Source: authors

From Table 2, it is found that industrial students at the Vocational Certificate level in the Bangkok area have cultural skills as a whole at a high level ($\overline{X}$ = 3.93, S.D.= 0.60) when considered individually, with the average from 3.89-3.97; the highest average is Understanding of Others ($\overline{X}$ = 3.97, S.D.= 0.57), followed by Vision ($\overline{X}$ = 3.95, S.D. = 0.61). The lowest mean value is Understanding of Self ($\overline{X}$ = 3.89, S.D. =0.63). When considered by educational level, it is found that:

The first year students had cultural skills as a whole at a high level ($\overline{X}$ = 3.86, S.D.= 0.63). When considered individually, it is found that it was at a high level in all aspects, with the average from 3.82-3.93; the highest average was Understanding of Others ($\overline{X}$ = 3.93, S.D.= 0.61), followed by Vision ($\overline{X}$ = 3.89, S.D.= 0.66). The lowest mean value was Cultural Sensitivity ($\overline{X}$ = 3.82, S.D.= 0.62).

The second year students had cultural skills as a whole at a high level ($\overline{X}$ =3.93, S.D.= 0.58). When considered individually, it is found that it was at a high level in all aspects, with the average value from 3.89-3.98. The highest average was Adaptation ($\overline{X}$ = 3.98, S.D.= 0.61), followed by Understanding of Others ($\overline{X}$ = 3.97, S.D.= 0.54). The lowest mean value was Cultural Sensitivity ($\overline{X}$ = 3.89, S.D.= 0.61).

The third year students had cultural skills as a whole at a high level ($\overline{X}$ = 4.02, S.D.= 0.57). When considering each aspect, it is found that it was at a high level in all aspects, with an average of 3.98-4.06. The highest average was Vision ($\overline{X}$ = 4.06, S.D.= 0.57), followed by Adaptation ($\overline{X}$ = 4.03, S.D.= 0.57). The lowest mean value was Understanding of Self ($\overline{X}$ = 3.98, S.D.= 0.64).

Table 3
Analysis of variance results to compare cultural skills of
industrial students classified by year using One-Way ANOVA

Skills	Source of Variance	SS	df	MS	F	Sig.
1. Cultural Sensitivity	Between Groups	2.610	2	305 . 1	648 . 3	. 027 *
	Within Groups	1 539 . 54	432	. 358		
	Total	1 149 . 57	434			
2. Understanding of Self	Between Groups	583 . 1	2	. 791	022 . 2	. 134
	Within Groups	077 . 169	432	.3 91		
	Total	660 . 170	434			

		Sum of Squares	df	Mean Square	F	Sig.
3. Understanding of Others	Between Groups	. 578	2	. 289	. 893	. 410
	Within Groups	1 662 .9 3	432	.3 23		
	Total	1 239 . 40	434			
4. Vision	Between Groups	8 33. 2	2	69 1. 1	168 . 3 *	. 043 *
	Within Groups	1 390 .9 5	432	. 369		
	Total	1 727 . 61	434			
5 . Adaptation	Between Groups	828 . 2	2	414 . 1	701 . 3 *	. 025 *
	Within Groups	16 072 . 5	432	. 382		
	Total	1 900 . 67	434			
Total	Between Groups	785 . 1	2	. 892	798 . 3	. 023 *
	Within Groups	1 482 . 01	432	.2 35		
	Total	1 66 2. 03	434			

*P<.05

Source: authors

From Table 3, it is found that industrial students at different years had cultural skills in the overall picture with statistically significant difference at the level of 0.05. If considered individually, it is found that the aspect with Sig value had 3 aspects, namely: cultural sensitivity, world view in the broad picture, and adaptation. There are 2 aspects of value that are not Sig: understanding of self and understanding of others.

Table 4
Comparison of pair differences, cultural skill levels
of industrial students between year levels

Aspect	VC 1 . with VC 2 . Mean Difference	VC 1 . with VC 3 . Mean Difference	VC 2 . with VC 3 . Mean Difference
Cultural Sensitivity	-.06701	-.18577*	-.11875
Vision	-.02472	-.16880*	-.14408
Adaptation	-.13608	-.18272*	-.04664
Total	-.06474	-.15394*	-.08920

*. The mean difference is significant at the 0.05 level.
Source: authors

From Table 4, comparing the differences in pairs of cultural skill levels of industrial students

classified by the year level, the aspects of Cultural Sensitivity, Vision, Adaptation, and Total had statistically significant difference at the level of 0.05. The number of pairs 1 is VC.1 and VC.3, which are not different.

Table 5
Mean, Standard deviation and correlation of the observed variables in the latent variable measurement model of cultural skills of industrial students at Vocational Certificate level in Bangkok area

Observed Variable	Correlation				
	Sk1	Sk2	Sk3	Sk4	Sk5
Sk1	1.000				
Sk2	0.558**	1.000			
Sk3	0.554**	0.606**	1.000		
Sk4	0.557**	0.513**	0.538**	1.000	
Sk5	0.560**	0.510**	0.586**	0.621**	1.000
Mean	3.898	3.895	3.970	3.950	3.942
S.D.	0.602	0.627	0.568	0.610	0.622
KMO : Measure of Sampling Adequacy = 0.861					
Bartlett's Test of Sphericity : Chi–Square= 934.038, df= 10, p= 0.000					

**p<0.01
Source: authors

From Table 5, the indicator for measuring latent variables Sk consists of 5 observable variables, namely: Sk1, Sk2, Sk3, Sk4, and Sk5. The average is between 3.895 and 3.970. The standard deviation is between 0.568 and 0.627. at a high level. The relationship between all 10 observed variables has a significant difference from zero at the level of 0.01. All pairs with positive correlation and correlation coefficients are between 0.510 to 0.621. It can be assumed that every observed variable in this model are related and in the same direction, including the size of the relationship between the observed variables in all pairs at a moderate level. In addition, the researcher tested the Bartlett's Test of Sphericity statistic to determine whether the correlation matrix of the observed variable is an identity matrix or not. The results showed that the value of Chi-square = 943.038, df = 10, p = 0.000, which is significantly different from zero at the 0.01 level, and also consistent with the results of the index analysis Kaiser-Meyer-Olkin (KMO), which is at 0.861. This value approached 1, which indicates that the correlation matrix of the observed variable is not a unique matrix, and there is enough correlation between variables to analyze elements for structural validation.

Table 6
Results of statistics of confirmed component analysis cultural model skills of industrial students at Vocational Certificate level in Bangkok area

| Observed Variable	Confirmed Component Analysis Cultural Model Skills				
	bSC	S.E.	t	FS	R2

	bsc	S.E.	t		R²
Sk1	0.727	<-->	<-->	0.157	0.528
Sk2	0.660	0.71	13.253	0.072	0.436
Sk3	0.732	0.70	13.671	0.162	0.536
Sk4	0.767	0.75	14.250	0.201	0.588
Sk5	0.793	0.77	14.600	0.226	0.629

Chi-square= 4.138, df= 3, p= 0.247, Chi-square/df= 1.379, RMSEA= 0.030, RMR= 0.004,

GFI= 0.996, AGFI= 0.981

Note ** p <0.01, bsc means the standard component weight value; the <-->
sign indicates that the mandatory parameter does not report the S.E. value and t
Source: authors

From Table 6, from the results of structural validation of the Skid Latent Variable Measurement Model with confirmed component analysis, it was found that the latent variable measurement model Sk is fitted to the empirical data considering the value Chi-square= 4.138, df= 3, p= 0.247. c2 is different from zero, with no statistical significance. In addition, the RMSEA= 0.030 and RMR= 0.004, which has a value close to 0, GFI= 0.996, and AGFI= 0.981, which are close to 1, and Chi-square / df= 1.379, which is less than 2, indicating that the measurement model Sk latency variables have construct validity.

In addition, the standard component weight coefficient of all observable variables is significantly different from zero at the 0.01 level. The highest standard weight factor is Sk5 (bsc= 0.793), followed by Sk4 (bsc= 0.767), Sk3 (bsc= 0.732), Sk1 (bsc= 0.727), and Sk2 (bsc= 0.660), respectively. The value of the coefficients of reliability of all observed variables measured by the R2 values that indicate the variance of the observed and latent variables is at the medium level (R2 is between 0.436 and 0.629). The Sk latent variable measurement model is shown in Figure 1

Figure 1
Sk Latent Variable Measurement Model
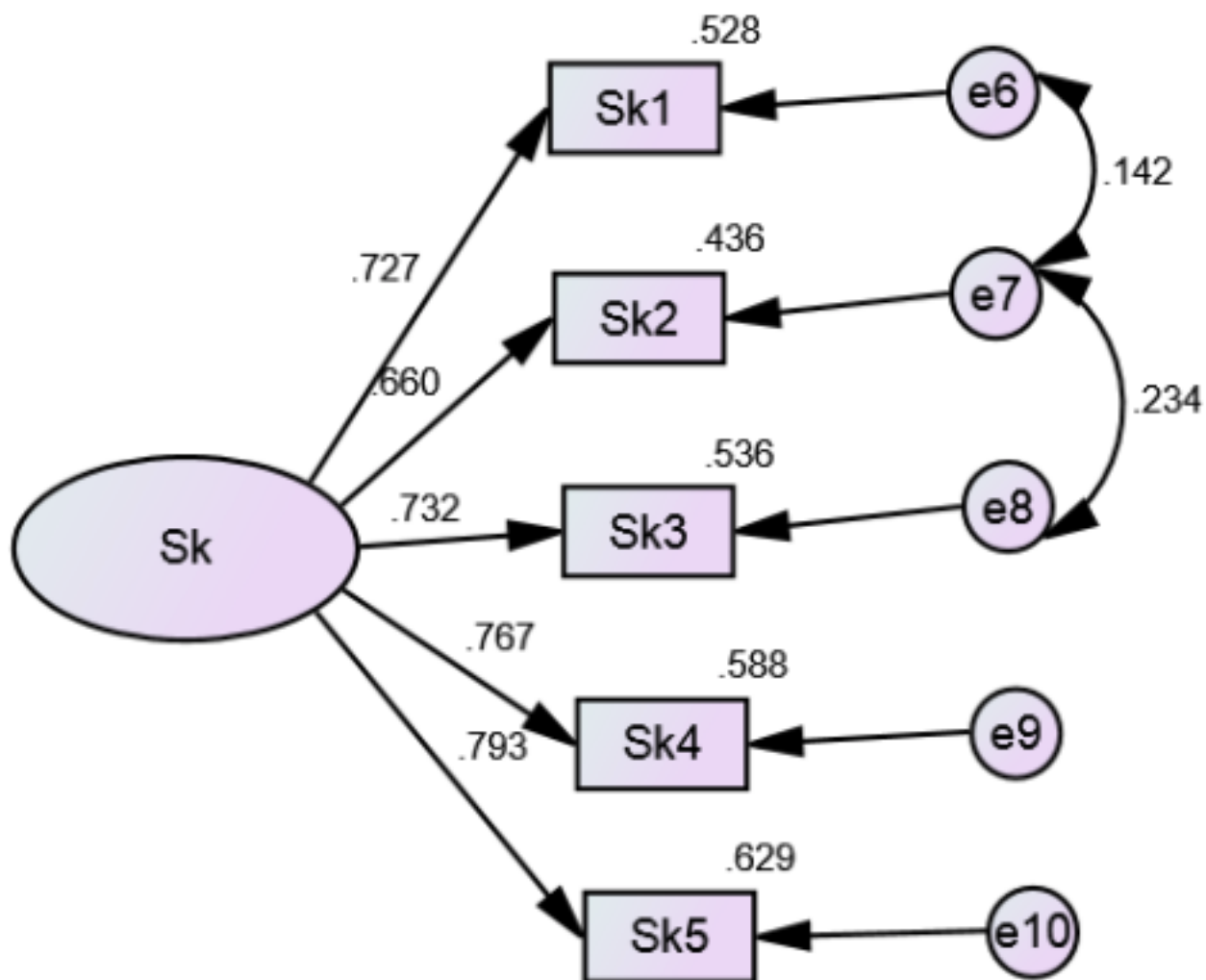
Source: authors

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5. Conclusions

5.1. Industrial students at the Vocational Certificate level in the Bangkok area have cultural skills as a whole at a high level (= 3.93, S.D.= 0.60). The highest mean value is Understanding of Others (= 3.97, S.D.= 0.57), due to the teaching and learning activities that students must learn together during. Working together as a group means they must help each other, and various activities which the school has arranged for students to interact in make students understand each other. This is consistent with the concept of Charoenchai (Charoenchai, 2015); the process of refining, teaching, and developing student relationships by teachers, parents, and lecturers will be a good example of unity. Students were instilled with responsibility for their duties, and had self-esteem upon graduation. Students will not be more divided and will understand each other. This also corresponds to Allen Consulting Group (Allen Consulting Group. , 1999) and HM Treasury Leitch (Leitch, 2006); skills are important, especially in a highly competitive world, including basic skills such as the ability to read and write, interpersonal skills, such as communication skills, and group work.

5.2. The results of the comparison of cultural skills of industrial students at the Vocational Certificate level in the Bangkok area, classified by year level, was done by using one way ANOVA analysis; it was found that cultural skills were overall different, with statistical significance at the level of 0.05 in 3 aspects: cultural sensitivity, vision, and adaptation. When comparing in pairs, it was found that there was a difference of 1 pair between the first year Vocational Certificate students and the third year Vocational Certificate students, while other aspects were not different. This is because the third year students have more experience, and can adjust themselves in a different culture better than the first year students. This is consistent with the findings of Ang et al (2007) and Crowne (2013). Experience exposure can make students able to adapt across cultures, because experience exposure is personal exposure from learning experiences in 3 areas: general living, sociality, and working with cultural differences. However, this cannot be used to adjust the behavior of the model in order to place it in a different environment or society, including adjusting work patterns in cultures that are different. Hence, it is necessary that people should have cultural sensitivity in order to apply cultural skills in daily life to create interpersonal relationships

and work in a society that has cultural differences.

5.3. The results of the examination of the construct validity of cultural skills models of industrial students at the Vocational Certificate level in the Bangkok area with the confirmed component analysis revealed that the model was fitted to the empirical data. This means that the model of the latent variable measurement Sk has construct validity, because cultural skills are important and necessary skills at the individual, family, community, and society level. It is an essential skill for people of all ages to use in the interaction, communication, and coexistence of individuals in society. People with good cultural skills will be able to live happily within the family, community and society. Cultural skills are skills that need to be systematically trained, as well as other skills. This is consistent with Adiwatthisit (2002) and Erik Erikson (1978), who said that cultural skill is the ability to know, understand, create, and coordinate feelings, needs, and relationships, as well as to solve problems and deal with the interactions of people with each other. Cultural skills consist of groups of skills that are used in interactions among individuals in society, including communication skills, speaking, listening, working together, and understanding a variety of situations, with the objective of creating positive relationships. The cultural skills model of the industrial students is composed of 5 elements. The value is positive. The size ranges from 0.660 - 0.793. The Sk5 Adjustment (bsc = 0.793) has the highest component weight, because the world today is constantly changing in economic, technological, social and cultural terms. These changes affect the various aspects of life. Therefore, students must adapt to be able to live in the current society. This is consistent with the concept of Wichai [2016], who said that humans often think of changes by linking them to risks and negative thoughts arising in the imagination, such as that changes may impair control in management, or worries that we may not have enough ability to accept new things. Changes may lead to working more or doing things that we are not used to. If each person does not adjust, they will not live happily in society.

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