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Aims & Scope

International Journal of Integrated Education and Development (IJIED) is a high quality research journal, providing a platform for the researchers, academicians, professionals, practitioners and students to impart and share knowledge in the form of high quality empirical and theoretical research paper, case studies, literature reviews and book reviews. Areas covered include

o Education

o Social Science and Humanities related to Education and Development

o Science and Technology related to Education and Development

Each submitted article will be double blind peer-reviewed by at least two professors in its field of studies.

The journal publishes 2 issues per year (No.1 January - June and No.2 July - December).

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Research Articles

A Study of Basic Knowledge of Mathematics of the Students Majoring in Mathematics

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Abstract

The research aimed to study basic knowledge of mathematics of the first-year students majoring in mathematics at the University of Champasak and Ubon Ratchathani Rajabhat University in the academic year 2015. The research instrument was an objective test to measure basic knowledge of mathematics. The instrument of 60 items created by the researchers to measure basic knowledge of mathematics had a difficulty value of 0.20-0.80 and a discrimination value of 0.20-0.72. Population in the study was the first-year students numbering 85 from the University of Champasak and Ubon Ratchathani Rajabhat University. Statistics used were mean, percentage, and content analysis. The study found that basic knowledge of mathematics of the students from the University of Champasak accounted for 38.93% and of those from Ubon Ratchathani Rajabhat University accounted for 37.62%. An overall result of the total students was 38.28%. Based on the content analysis, it was found that the first three areas which should be first improved were calculus, vector, order and series.

Keywords: Mathematics Students, Basic Knowledge of Mathematics at the Upper Secondary Level

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Introduction

In learning mathematics, it is essential for learners to depend on their fundamental knowledge of mathematics, especially at the secondary level. Without that, it is likely that learners may not be successful at a tertiary level. With these reasons, it is imperative for those concerned to expose learners to basic knowledge of mathematics.

As committee members and teachers of mathematics, researchers viewed that it is very important to develop a fundamental knowledge of mathematics for learners so that they are able to succeed in learning mathematics. However, for that to happen, it is very necessary to know a background knowledge of the first-year students in order to point out their weakness and strengths.

Objectives

1. To explore a fundamental knowledge of mathematics of the first-year students of the University of Champasak.

2. To explore a fundamental knowledge of mathematics of the first-year students of Ubon Ratchathani Rajabhat University.

Research Scope

1. Population was the first-year students of the University of Champasak and Ubon Ratchathani Rajabhat University.

2. The work was a survey research.

3. The research duration was from May to August 2015.

Research Methodology

Population

The population in the study was the first-year students of mathematics of the University of Champasak and Ubon Ratchathani Rajabhat University. The subjects of 85 were divided into two groups: 1. Eleven first-year students of mathematics of the University of Champasak and 2. Seventy-four first-year students of mathematics of Ubon Ratchathani Rajabhat University in the academic year 2015.

Research Instrument

The research instrument was a subjective test to measure the fundamental knowledge of mathematics at the higher school level. The instrument was created according to the set frame at the secondary level. The 60-item test had a difficulty value of 0.20-0.80 and a discrimination value of 0.20-0.72.

Data collection

A letter of request was sent to the University of Champasak to seek permission. Data were collected during July and August, 2015.

Data Analysis

Data were analyzed by using Microsoft Office Excel 2007. Statistics used were percentage, mean and standard deviation.

Results

1. The results of the test on basic knowledge of mathematics of the students in the study were shown in table 1.

Table 1   Results of an analysis of basic knowledge in mathematics at the upper secondary level

Item	Champasak	UBRU	Total
No of students	11	74	85
Lowest score	8	13	8
Highest score	32	34	34
Mean	23.36	22.57	22.97
Percentage	38.93	37.62	38.28
Standard deviation	8.21	5.02	6.62

From table 1 it was found that the basic knowledge of mathematics of the students in the study represented 38.93% and 37.62%. An overall performance constituted 38.28%.

2. The results of analyzing the basic knowledge of mathematics of the first-year students were illustrated in table 2.

Table 2   Basic knowledge of mathematics according to contents

Oder to be improved	Name of the content	Percentage
1	Calculus	24.66
2	Vector	27.7
3	Order and serial	30.27
4	Matrix	35.14
5	Relation and function	35.41
6	Number system	36.22
7	Mathematics in daily life	37.67
8	Exponential and log arithm	38.51
9	Statistics and probability	38.85
10	Analytic Geometrics	41.22
11	Tri-gonomy function	45.27
12	Logic	49.66
13	Set	57.39

From table 2, it was found that the area in which learners scored higher than 50% was 'set'. As for the remaining areas, the scores were lower than 50%. Considering the areas which should be most improved were calculus, vector and order and series.

Conclusion

1. Basic knowledge of mathematics of the first-year students of the University of Champasak accounted for 38.93%.

2. Basic knowledge of mathematics of the first-year students of UBRU accounted for 37.62%.

Recommendations

1. Recommendations for application

The department or program should have a course on mathematics for students at a degree level. The contents to be given should be based on the following order: calculus, vector, series and order, matrix, relations and function, numeral system, daily life mathematics, exponential function, logarithm, statistics and probability, geometrics, trigonemy , logic and set.

2. Recommendations for further research

The procedure should be applied in other courses. The study results should be studied and used to improve students' learning ability.

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A Study of the Effect of Segmentation for Cognitive Load Reduction on Traffic Signs Education in Thailand

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Abstract

Road traffic injuries are a major problem in Thailand. One strategy to minimize this problem is to educate Thai Youths on road safety. This paper investigated the effectiveness of a learning instruction designed to use segmenting principles to reduce cognitive load on educating traffic signs for Thai undergraduate students. The study found that segmenting learning instructions supported cognitive load reduction. The relationship between user's satisfaction and the tests was examined. The results showed that the segmenting learning instructions has the higher average values of satisfaction. This resulted from an influence on the higher average score of learning outcomes. Therefore, satisfaction on learning instructions also has an influence on learning outcomes (cognitive load reduction) for learning of traffic signs by Thai undergraduate students.

Keywords: Traffic signs, Cognitive load reduction, Segmenting principle, Multimedia learning

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Introduction

Road traffic injuries are a major public health challenge that people have to deal every day. WHO (World Health Organization) reported that approximately 1.2 million people are killed in road crashes and as many as 50 million are injured each year (WHO, 2015). Also road accidents have been considered one of the top three public health problems presented by the Ministry of Public Health in Thailand. The report shows that there are over 13,000 deaths and more than million injuries as the results of road accidents each year. This causes losing the economy from road accidents which is from human costs, property damage costs, and general crash costs. From this aspect, the Ministry of Transportation points to road accident is one major problem for this country. There are many factors that cause road-side accidents in Thailand. The Depart of Land and Transport (DLT) has found that one of these factors is due to young drivers who have limited driving skills and knowledge (TARC, 2011). This driving group has been discovered that they have risky driving behaviors and less understanding of the traffic rules. For instant, young drivers, particularly males, often put themselves in potentially hazardous situations such as more likely to drink and drive too fast and also drive too close to the vehicle in front (TARC, 2011 and Tanaboriboom and Satiennam, 2005). Thus, one strategy of this action plan is to educate on road safety for Thai Youths. This plan is to educate on information and actual knowledge on road accidents and traffic rules for driver training and testing.

Cognitive Load Theory (CLT) was developed by John Sweller (1988) designed to give guidelines to help the presentation of information in a manner encouraging learner activities. It is a processing system of learning, memorizing, and problem solving (Sweller, 2008). CLT is an instructional model from the field of cognitive science research. Meaningful learning requires a massive cognitive processing, but the learner's cognitive processing capacity is very limited. At present, multimedia courseware designers have paid increasing attention to this problem. There are close links between cognitive load and learning outcomes, while proper control of cognitive load can effectively improve the academic performance of learners (Artino, 2008). Working memory plays an important role in the storage of information into a long term memory and the acquisition of new skills a long term memory stores the accumulated knowledge. To sum up, if information does not find its way into long term memory, it is lost (Sweller, 1994).

Multimedia learning and segmenting principle

In the field of cognitive science, Mayer (2005) guided us to create more effective computer-based training and multimedia instruction which simply

defines as the presentation of material using words and pictures. Cognitive Theory of Multimedia Learning identifies that multimedia narration and graphical images produce verbal and visual mental representations, which integrate with prior knowledge to construct new knowledge (Mayer and Moreno, 2002). According to Mayer and Moreno (1998) and Mayer (2003), the Cognitive Theory of Multimedia Learning is based on several assumptions. Information technology can utilize multi-sensory channels to convey information from the learning system to the learners, and to assist processing, however, working memory has limited capacity (see Figure 1).
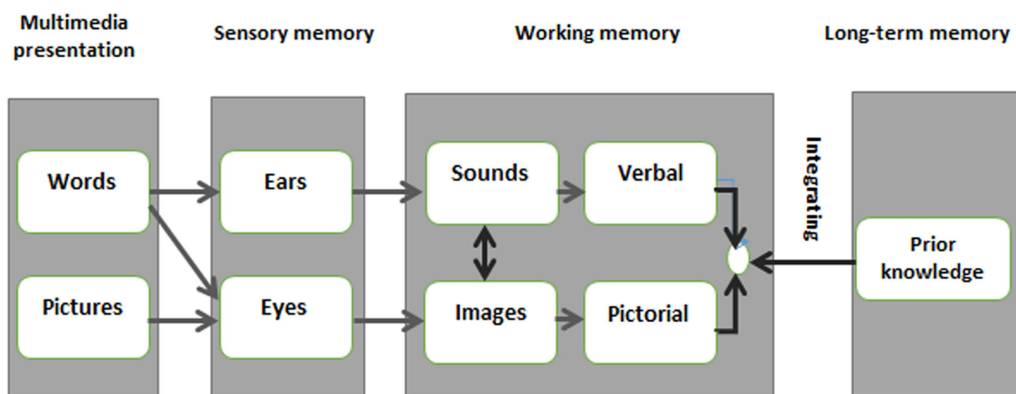
Figure 1 Mayer' model on multimedia learning for cognitive load reduction
(source: Mayer, 2005)

This means that presenting too much information in too many channels may cause losing of essential information during learning (Karr-Wisniewski and Lu, 2005). Researchers know that the multiple channels in working memory include auditory and visual channels. The auditory channel handles information that is heard, while the visual channel processes information that is seen (Baddeley, 1992). Text appears to be a unique processing requirements, with words initially captured by the visual channel and then converted to sounds in the auditory channel (Mayer, Heiser and Lonn, 2001). When information is presented using both the visual and auditory channels, working memory can be enabled to handle more information, but there is the risk of cognitive load. Too much information delivered in an ineffective manner can interfere with the brain's ability to successfully integrate information into long term memory (Sweller, 2008). From these aspects, multimedia learning principle can be used for educating traffic rules for drivers, however presenting too much information and various channels may cause cognitive load in learning.

One of the simple principles for reducing cognitive load in learning is segmenting principle. Segmenting is a principle that learner are breaking down the large segments into smaller segments, which are presented one at a time (Mayer, 2012). The segmentation principle states that a multimedia tutorial that provides the learners with pacing control, through use of a Start/Stop button or Continue button, will result in greater learning than a tutorial that plays from beginning to end (Mayer and Chandler, 2001). The rationale for using segmenting is to allow the learner to move their own speed and ingest the information at the speed that works best. Mayer (2005) described that learners understand a multimedia explanation better when it is presented in learner-controlled segments rather than as a continuous presentation and is more likely to be able to process the information more deeply, resulting in enhanced learning.

The purpose of this study is to investigate the multimedia instruction which is a pause segmenting multimedia instruction. This aims to reduce cognitive load. And this study focuses on learners' satisfaction with different learning instructional designs aiming to examine the learners' perception of the multimedia learning instructions. This study will contribute to knowledge and provide a better understanding of the use of new educational technologies for the teaching of traffic signs with an aim to reduce traffic accidents.

Literature Review

There are many studies aimed to solve the problem of cognitive overload. Wang (2010) summarized that makes the learners gain better learning outcomes using multimedia instruction design (Wang, Wu and Zhang, 2010). Multimedia instructions have the capacity to provide powerful presentation to students and learners (Cheon, Chung and Crooks, 2014). For example, Paul Ayres and his team (2009) investigated the effectiveness of instructional animations in teaching human motor skills and static representations. The study showed that students learnt more from the animation mode than the static mode (Khacharem, Spanjers and Zoudji, 2013). However, multimedia learning has associated problems that inhabit the achievement of the best outcome. The research of solving the representation of multi-channel in multimedia environment had been studied in a number of projects. Since the complex information structures in multimedia learning requires more cognitive resources, the segmenting principle has been proposed to reduce cognitive load by providing smaller chunks with pauses (stop/continue) between segments. The effect of Working Memory Capacity (WMC) was examined using the segmentation of multimedia instruction. This study found that there are significant positive effect on participants' recall and application scores, and the use of segmenting principle

allows learners with lower WMC to recall and apply equally to those with higher WMC (Lusk, Evans and Jeffrey, 2009). There was a study shown the findings of valuable implications for effective ways of using pauses between segments in instructional animations. The results showed that active pause with free-recall group outperformed the two passive pause groups on both recall and transfer tests. However, no significant differences in mental effort for the instruction or the tests were found in this study (Cheon, Chung and Crooks, 2014). Another research for reducing cognitive load in learning is to investigate the effects of levels of learner expertise and different forms of segmentation in learning from animated soccer scenes. The study found that an expertise reversal effect for segmentation positively affected learning outcomes of novices but not experts. And novices benefited more from micro-step segmentation than from macro-step segmentation, while experts performed at the same level with both forms of segmentation. This study suggested that adapting instructional animation formats to players with different levels of expertise should be a crucial part of successful training (Khacharem, Apanjers and Zoudji, 2013).

Research questions and Hypotheses

Research Questions (RQ) for this study are followed:

1. Are there any differences in learning outcomes (Cognitive Load Reduction) for learners between traditional instructions (control group) and a pause segmenting multimedia instruction on learning traffic signs?

2. Does satisfaction on learning instructions affect learning outcomes on learning traffic signs?

To achieve the objectives this research, the following null hypotheses of RQ 1 were developed as shown

H1: There is no significant difference between the mean scores from pre-test and post-test of traditional instruction.

H2: There is no significant difference between the mean scores from pre-test and post-test of the pause segmenting multimedia instruction

H3: There is no significant difference between the mean scores from post-test of traditional instruction and the pause segmenting multimedia instruction

According to RQ 2, the satisfaction on learning instructions was investigated. The aim was to examine the learners' perception on the learning instructions with regard to influence on the learning outcomes. This study employed four constructs from Chiu et al.'s model (2005) which were perceived usefulness, perceived ease of use, perceived value, and perceived system quality to measure user satisfaction (Khacharem et al, 2013). The questions for these four constructs were adopted from Chui et al.'s online learning continuance intention model. This could be used as a

criterion on the assessment of the effectiveness of the learning instructional designs. Answers for RQ 2 were therefore based on the following hypothesis:

H4: There will be no significant difference between the mean scores of the learner satisfaction on traditional instruction and the pause segmenting multimedia instruction
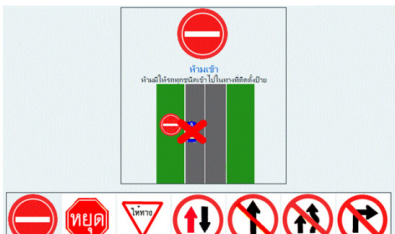
Data Collection Procedures

In this study, there were two groups that consist of one treatment group and one control group (see Table 1). Group A was the control group that was presented with traditional learning instruction provided with only text and images. The treatment group was group B which was presented with the learning instructions based on Multimedia instructions, and was developed including the same contents. The segmenting multimedia instruction (group B) was designed using 2D animation which including two buttons which were "STOP" and "CONTINUE". The participants were required to complete the pre-test questionnaires that contained 30 questions. The lessons contained approximately 20 minutes of instructional materials. Next the participants were requested to finish the post-test and learner satisfaction questionnaires.

The Independent variable of the study is the pause segmenting multimedia instruction. This independent variable is processed in working memory by comparing how various types of loads such as segmenting principle affects selective attention to sensory memory. One of the dependent variable under consideration was an assessment of cognitive load reduction that was measured from scores based on the pretest, posttest results.

The dependent variable was the score from a test obtained in the posttest to measure working memory referred to cognitive load reduction. The other dependent variable is the learner satisfaction on learning instruction. The aim was to examine participant satisfaction in accordance with the learning method provided and reduction of cognitive load in learning traffic signs.

Table 1 Lesson Presentation for treatment group and control group

Control Group (Group A)	Treatment group (Group B)
Text and Pictures	Segmenting Multimedia Instruction

Results

The target population of this study was undergraduate students recruited from Nakhon Sawan Rajabpat University in Nakhon Sawan province, Thailand. Participants were between the ages of 18 and 20 and undergraduate students were targeted for the study because the majority of them applied for a new driver's license. SPSS was used to analyze the data and 53 undergraduate students were the participants. All participants were also chosen with similar knowledge background on traffic signs as shown by the mean average score of the pre-test (see Table 2).

According to the RQ 1, the mean scores of the pretest were lower than the posttest of group A and group B. The pair sample T-Test was used to prove the significance of the variable as shown in Table 2. Therefore, the results found that hypotheses 1 and 2 were rejected significantly at the 0.05 level. This describes that both learning instructions affected cognitive road reduction.

In hypothesis 3, the posttest scores between group A and B were analyzed. The results showed that the mean score of the posttest of group B was higher than group A (see Table 2). The hypothesis 3 was rejected with level of significance $\alpha = .05$ (see Table 4). This shows that the segmenting principle affected cognitive load reduction on learning traffic signs in this study.

Table 2 Results from the pair sample T-Test

Group	N	Mean		SD		t	Sig. ed)/2(2-tailed)/2
		Pretest	Posttest	Pretest	Posttest		
A	24	10.46	18.88	2.77	2.63	18.18	0.000
B	29	11.41	23.97	2.10	1.99	39.22	0.000

Level of significance $\alpha = 0.05$ (5% error)

Table 3 reports summary of the mean scores analyzed from five Likert scale of learner satisfactions. There are 57 questions of satisfying evaluation in this study. From hypothesis 4, the p-value of 0.00 shows that there were significant differences between the satisfaction scores of group A and B (see table 4). And the results showed that the mean scores of group B were significantly higher than group A on learner's satisfaction (see table 3).

Table 3 Results from five Likert scale of learner satisfaction

Group	N	Mean	SD
A	24	3.24	0.06
B	29	4.38	0.08

Table 4 Results from the independent sample T-Test

Hypotheses	Levene's Test for Equality of Variances		t	df	Sig (2-tailed)
	F	Sig			
3	1.73	0.08	-9.60	51	0.000
4	2.08	0.04	-35.77	49.65	0.000

Level of significance α = 0.05 (5% error)

This study analyzed the relationship between satisfaction and the posttest of group A which indicated a weak positive linear relationship, r values was 0.0672. And the relationship between satisfaction and the posttest of group B showed a weak negative linear relationship, r values was -0.041.

Conclusion and Discussion

This paper presented an investigation of the effectiveness of a learning instructions designed using segmenting principles in order to support cognitive load reduction on educating traffic signs for undergraduate students in Thailand. The results examined the mean scores of the pretest and posttest. The study found that segmenting learning instructions could support cognitive load reduction. Moreover, the relationship between user satisfaction and the tests was analyzed. As the results, the treatment group of learning showed the higher average values of satisfaction has an influence on the higher average score of learning outcomes. Therefore, satisfaction on learning instructions also has an influence on learning outcomes (cognitive load reduction) for learning of traffic signs by Thai undergraduate students.

The results indicated that the relationships between satisfactions and post-tests of all experiment groups had weak linear correlation.

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Effects of Inequality in the Great Mekong Sub-Region

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Abstract

The objectives of this study were to: 1) study impact factors of inequality and 2) compare the effects that contribute to inequality grouped by gender, age, nationality and country of residence by using a questionnaire to collect data from all 600 participants who were students of Ubon Ratchathani Rajabhat University (Thailand), Pakse Teacher Training College and Champasak University (Laos) and University of South-East Asia (Cambodia). Statistics used in data analysis were mean, standard deviation, t-test, and f-test.

The findings of the study indicated that,

1. Factors affecting inequality were educational opportunities (a mean of 3.85), career opportunities (a mean of 3.82), quality of life (a mean of 3.77), poverty (a mean of 3.76) and health services (a mean of 3.52).

2. Gender differences resulted in inequality of educational opportunities, career opportunities and Poverty.

3. Differences in nationality affected inequalities of educational opportunities, career opportunities and poverty.

4. Differences in the country of residence resulted in inequality of all factors.

Keyword: Effects of inequality

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Introduction

The National Statistical Office explored the wealth of Thai people for the first time comprising ownership of land, houses and other financial assets. The result was that 69 percent of the nation's wealth was in the richest households, with only 20 percent of the total. The 20 percent was the poorest households with only 1 percent of property.

As a result, there is an economic disparity through the unfair distribution of income. The community is weak because of people who have left homeland. Workers are from the countryside to factories. They cannot access basic services from the government. Environmental problems deteriorate from the manufacturing industry to meet external needs. Morality and ethics including human rights and health issues are ignored.

Inequality often contributes to poverty, conflicts, and exploitation. The employment is beneficial for employers who are in higher position. A change of values that focuses on only wealth rather than ethics is one of the causes of corruption from grassroots level up to high levels. People move to the city for better opportunities. That causes congestion, increases crime and reduces security of life and property. An increase in land prices in urban areas makes it difficult to own housing. High cost of living causes increasing savings rates. That causes a lot of household debt. These issues may lead to insufficient investment in long-term and affect sustainable economic growth.

Sheahan and Iglesias (1998), who did aresearch on inequality in Latin America, stated that inequality is more or less likely to affect access to public welfare and the other opportunities.

This article focuses on the effects of inequality, which is useful for those organizations that want to address this disparity.

Objectives

1. To study impact factors of inequality.

2. To compare the impact factors which contribute to inequality grouped by gender, age, nationality and country of residence.

Methodology

Population

The population was students of networking universities, Ubon Ratchathani Rajabhat University (Thailand), Pakse Teacher Training College and Champasak University (Laos) and University of South-East Asia (Cambodia) without knowing

the exact population.

Sample

Since the population was large and the exact population was unknown, the sample size can be calculated from the unknown sample size (Cohen and Cohen, 1983) with a confidence level of 95% and a tolerance of 5%. The sample size was 384, for evaluation and analysis. The researcher used a sample size of 600 samples from 4 universities, which met the required criteria of being not less than 384 samples.

Sampling

This research used multi-stage sampling in the following order.

Step 1: Purposive Sampling: Sampling from 4 universities in three countries: Ubon Ratchathani Rajabhat University, Pakse Teacher Training Collage and Champasak University (Laos), University of South-East Asia (Cambodia).

Step 2: Convenience sampling data from students who participated in Bus Asean Project organized by the International Education Institute.

Variable

Independent Variables were gender, nationality and country of residence. Dependent variables were educational opportunities, quality of life, health services, career opportunities and poverty/riches.

Instruments

The instrument was questionnaires (Quantitative research) in closed-ended form. The questions were likert scale. It could be classified into 5 levels as follows (Liker, 1967):

5	=	most
4	=	more
3	=	moderate
2	=	low
1	=	very low

The mean of observable variables was divided into 5 levels as follows (I, Anderson, Tatham, 1995).

4.50-5.00	=	highest level
3.50-4.49	=	high level
2.50-3.49	=	moderate level
1.50-2.49	=	low level
1.00-1.49	=	lowest level

Result

Research results can be shown by consistency with the following objectives.

1. Effects of inequality can be shown in Table 1.

Table 1 Effects of inequality

Variables	$\bar{x}$	S.D	Interpreting result
1. Educational opportunities	3.85	.918	high level
2. Quality of life	3.77	.915	high level
3. Health services	3.52	1.012	high level
4. Career opportunities	3.82	.960	high level
5. Poverty / Riches.	3.76	1.092	high level
Result	**3.74**	**.730**	**high level**

Table 1 shows that factors affecting inequality were educational opportunities (a mean of 3.85), career opportunities (a mean of 3.82), quality of life (a mean of 3.77), poverty / riches (a mean of 3.76) and health services (a mean of 3.52).

2. Comparing the effects that contribute to inequality grouped by gender, age, nationality and country of residence

Table 2 Comparing the effects of inequality by gender

Factors	Result
1. Educational opportunities	different*
2. Quality of life	no difference
3. Health services	no difference
4. Career opportunities	different*
5. Poverty / Riches.	different*

* with significance level of 0.05

Table 2 shows that the gender difference results in inequality of educational opportunities, career opportunities and poverty / riches with the significant level of 0.05.

Table 3 Comparing the effects of inequality by nationality

Factors	Result
1. Educational opportunities	different*
2. Quality of life	no difference
3. Health services	no difference
4. Career opportunities	different*
5. Poverty / Riches.	different*

* with significance level of 0.05

Table 3 shows that the nationality results in inequality of educational opportunities, career opportunities and poverty / riches with the significant level of 0.05.

Table 4 Comparing the effects of inequality by country of residence

Factors	Result
1. Educational opportunities	different*
2. Quality of life	different*
3. Health services	different*
4. Career opportunities	different*
5. Poverty / Riches.	different*

* with significance level of 0.05

Table 4 shows that differences in country of residence affect inequality in all factors with the significant level of 0.05.

Discussion
1. Factors affecting inequality of educational opportunities were in the highest level. This corresponds to Jencks's work (1972) which stated that inequality affects the chances of attending a different school or university such as admission to school program with a great curriculum or courses that are accepted in society.
2. Gender differences result in inequality of educational opportunities, career opportunities and poverty/riches. That is in line with Klasen (2002) stating that gender affects equality in education and has a long-term impact on the economic system of society, community or country. This research has also shown that there is a gap between GDP about 0.4 - 09 percent in a country where males and females are differently educated.

3. Differences in nationality affect inequality of educational opportunities, career opportunities and poverty/richness. That is related to Gibson's (1966) study on difference of nationality between immigrant students from Spain to America and American students. The results showed that differences in nationality affect national discrimination.

4. Differences in the country of residence result in inequality in all aspects. This is consistent with Raymond's (1974) concept that differences in social levels comprising different residential backgrounds affect equality/educational opportunities.

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Causes of Inequality in the Great Mekong Sub-Region

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Abstract

The objectives of this study were to: 1) study casual factors of inequality and 2) compare the factors that contribute to inequality grouped by gender, age, nationality and country of residence by using a questionnaire to collect data from all 600 participants who were students of the following universities: Ubon Ratchathani Rajabhat University (Thailand),Pakse Teacher Training College and Champasak University (Laos) and University of South-East Asia (Cambodia). Statistics used in data analysis were mean, standard deviation, t-test, and f-test.

The findings of the study indicated that;

1. The participants' points of view released that the causes of inequality were ranked by means of descending order; education (a mean of 3.91), poverty (a mean of 3.88), ethnicity (a mean of 3.28), nationality (a mean of 3.21) and gender (a mean of 3.19).

2. Differences in nationality led to differences in casual factors of inequality which were nationality, gender, education and poverty with significance level of 0.05.

3. The country where participants were living led to the cause of inequality.

Keyword: Causes of Inequality

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Introduction

The National Statistical Office explored the wealth of Thai people for the first time comprising ownership of land, houses and other financial assets. The result was that 69 percent of the nation's wealth was in the richest households, with only 20 percent of the total. The 20 percent was the poorest households with only 1 percent of property, which was 69 times the richest family.

As a result, there is an economic disparity through the unfair distribution of income. The community is weak because of people who have left homeland. Workers are from the countryside to factories. They cannot access to basic services from the government. Environmental problems deteriorate from the manufacturing industry to meet external needs rather than internal. Morality and ethics are ignored including human rights and health issues.

Inequality often contributes to poverty, conflict, exploitation. The inquired employment is beneficial for employers who are in higher position, but for whom with lower socioeconomic status is the other way around. A change of values that focuses on only wealth rather than ethics is one of the causes of corruption from grassroots level up to high levels. People move to the city for better opportunities. That causes congestion, increases crime and reduces security of life and property. The increase in land prices in urban areas makes it difficult to own housing. High cost of living causes increasing of savings rates. That causes a lot of household debt. Those issues mentioned above may lead to insufficient investment in long-term and affect sustainable economic growth.

Sheahan and Iglesias (1998), who did aresearch on inequality in Latin America, stated that inequality is more or less likely to affect access to public welfare and the other opportunities.

Therefore, this article focuses on the effects of inequality, which is useful for those organizations that want to address this disparity.

Objectives

1. To study impact factors of inequality.

2. To compare the impact factors which contribute to inequality grouped by gender, age, nationality and country of residence.

Methodology

Population

The population was students of networking universities: Ubon Ratchathani Rajabhat University (Thailand), Pakse Teacher Training College and Champasak University (Laos) and University of South-East Asia (Cambodia) without knowing

the exact population.

Sample

Since the population is large and the exact population is unknown, the sample size can be calculated from the unknown sample size (Cohen and Cohen, 1983) with a confidence level of 95% and a tolerance of 5%. The sample size is 384, for ease of evaluation and analysis. The researcher used a sample size of 600 samples from 4 universities, which were able to meet the required criteria of being not less than 384 samples.

Sampling

This research used multi-stage sampling in the following order.

Step 1: Purposive Sampling: Sampling from 4 universities in three countries: Ubon Ratchathani Rajabhat University, Pakse Teacher Training Collage and Champasak University (Laos), University of South-East Asia (Cambodia).

Step 2: Convenience Sampling, Collecting data from students who participated in Bus Asean Project organized by the International Education Institute.

Variable

Independent Variables are gender, nationality and country of residence. Dependent Variables are ethnicity, nationality, gender, education and poverty.

Instruments

The instrument was questionnaires (Quantitative research) being in closed-ended form. The questions were likert scale. It could be classified into 5 levels as follows (Liker, 1967).

5	=	most
4	=	more
3	=	moderate
2	=	low
1	=	very low

The mean of observable variables was divided into 5 levels as follows (I, Anderson, Tatham, 1995).

4.50-5.00	=	the highest level
3.50-4.49	=	high level
2.50-3.49	=	moderate level
1.50-2.49	=	low level
1.00-1.49	=	the lowest level

Result

Research results can be shown by consistency with the following objectives.

1. Casual factors of inequality can be shown in Table 1.

Table 1 Causes of Inequality

Variables	$\bar{x}$	S.D	Interpreting result
1. Ethnicity	3.28	1.080	moderate level
2. Nationality	3.21	1.099	moderate level
3. Gender	3.19	1.078	moderate level
4. Education	3.91	1.009	high level
5. Poverty	3.88	1.107	high level
Result	3.49	.695	moderate level

Table 1 shows that the participants' points of view showed that the causes of inequality were ranked by means of descending order: education (a mean of 3.91), poverty (a mean of 3.88), ethnicity (a mean of 3.28), nationality (a mean of 3.21) and gender (a mean of 3.19).

2. The factors which contribute to inequality grouped by gender, age, nationality and country of residence.

Table 2 Comparing the causes of inequality by gender

Factors	Result
1. Ethnicity	no difference
2. Nationality	no difference
3. Gender	no difference
4. Education	no difference
5. Poverty	no difference

Table 2 shows that the gender difference does not lead to the causes of inequality

Table 3 Comparing the causes of inequality by nationality

Factors	Result
1. Ethnicity	no difference
2. Nationality	different*
3. Gender	different*
4. Education	different*
5. Poverty	different*

* with significance level of 0.05

Table 3 shows that differences in nationality result in causal factors of inequality in nationality, gender, education and poverty with the significant level of 0.05.

Table 4 Comparing the causes of inequality by country of residence

Factors	Result
1. Ethnicity	different*
2. Nationality	different*
3. Gender	different*
4. Education	different*
5. Poverty	different*

* with significance level of 0.05

Table 4 shows that differences in country of residence result in causal factors of inequality in all factors with the significant level of 0.05.

Discussion
1. The participants' points of view showed that the causes of inequality were ranked by means of descending order: education (a mean of 3.91), poverty (a mean of 3.88), ethnicity (a mean of 3.28), nationality (a mean of 3.21) and gender (a mean of 3.19), which corresponds to David's study (2014). Inequality of people over 99 percent is related to education and ability. If any society or country would like to reduce inequality, development of education or dissemination needed to be provided in the community, society or country. In addition, studies from England (2005) and Dijkstra and Hanmer (2000) mentioned that the gap between salaries, in other words, inequality of US labors' income is primarily due to gender and their jobs.

2. The difference in nationality results in the causal factor of inequality in nationality, gender, education and poverty at the 0.05 significant level. This corresponds to the research conducted by Zhang, Q and Wang, Y. (2004). Nationality is the main factor contributing to inequality in society, along with gender and age.

3. The difference in country of residence results in the causes of inequality. This is in line with research by Popay, Thomas, Williams, Bennett, Gatrell and Bostock (2003) stating that residential locations had an impact on the equality of access to public welfare of medical care.

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Bach, S. (2012). *Managing human resources.* Hoboken, NJ: Wiley.

Gold, J., & Bratton, J. (2014). Towards critical human resource development education (CHRDE): Using the sociological imagination to make the HRD profession more critical in the post-crisis era. *Human Resource Development International, 17*(4), 400-415.

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