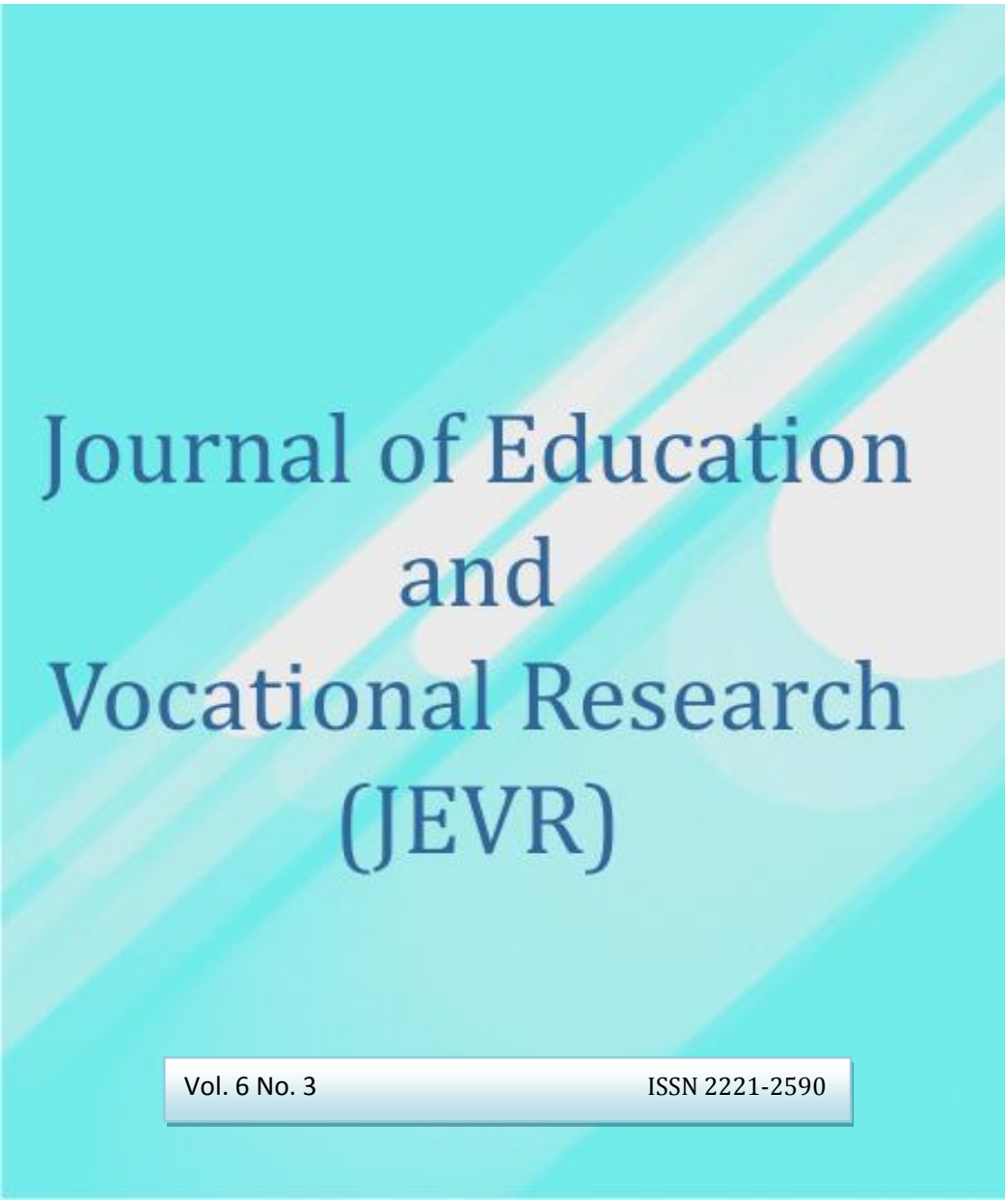

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Editorial

Journal of Education and Vocational Research (JEVR) provides avenue for quality research in the ever-changing fields of Education and Vocational Research and related disciplines. Work submitted for publication consideration should not be limited by any narrow conceptualisation of educaton and vocational research, but comprises interdisciplinary and multi-facet approaches to education and vocational theories and practices as well as general transformations in the fileds. Scope of the JEVR includes to subjects of educational technology, educational administration, educational planning, measurement and evaluation in education, developmental psychology, special education, distance learning, vocational education, technology-based learning, environmental education, business education, educational psychology, physical education, innovation, vocational training, knowledge management. Author(s) should declare that work submitted to the journal is original, not under consideration for publication by another journal, and that all listed authors approve its submission to JEVR. It is JEVR policy to welcome submissions for consideration, which are original, and not under consideration for publication by another journal at the same time. Author (s) can submit: Research Paper, Conceptual Paper, Case Studies and Book Review. The current issue of JEVR comprises of papers of scholars from Indonesia, Malaysia, Pakistan, Mauritius and Thailand. Learning based on practicum, e-learning, brand loyalty in education, ESP program & policy implications, summative assessment in work-based learning practice and blended learning outcomes were examined in these studies. Journal received research submission related to all aspects of major themes and tracks. All the submitted papers were first assessed by the editorial team for relevance and originality of the work and blindly peer reviewed by the external reviewers depending on the subject matter of the paper. After the rigorous peer-review process, the submitted papers were selected based on originality, significance, and clarity for the purpose. Current issue will therefore be a unique offer, where scholars will be able to appreciate the latest results in their field of expertise, and to acquire additional knowledge in other relevant fields.

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PAPERS

Journal of Education and Vocational Research (JEVR)
Vol. 6, No. 3, September 2015 (ISSN 2221-2590)

Physics Learning Based on Practicum: Multi-meter

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Abstract: Teaching and learning activities effectively should be able to make students active for building their knowledge by placing the teacher as a facilitator. A step to make learning effectively is to organize a practicum. By practicum, students can develop their ability to think critically, analyze, and evaluate a problem. In this practicum has been done measuring of electrical quantities such as voltage by using a multimeter and resistance of resistor by reading color of the ring (color code) and by measuring directly of the resistor's resistance by using multimeter. In this practicum students understand the use of a multimeter to measure the voltage and electrical resistance. The result of measurement for output voltage of DC power supply by using a multimeter is 3 V, 6 V, 9 V and 13 V. Has been made of series and parallel circuit for 3 resistors. The resistance value of each resistor is 2000 Ω same as relatively. The equivalent resistance for series circuit of 3 resistors is 6000 Ω and for parallel circuit is 700 Ω. The equivalent resistance is measured by using multimeter and has been made also for a combination circuit of series-parallel resistor.

Keywords: *Multimeter, voltage, resistance, resistor, series, parallel*

1. Introduction

Most of our perception of the teaching is transfer knowledge actively from teacher to the students. On the other hand, perceptions of the students about learning are accept from the teacher given passively. This perception should be changed. Teaching and learning activities effectively should be able to make students active for building their knowledge by placing the teacher as a facilitator. A step to make learning effectively is to organize a practicum. By practicum, students can develop their ability to think critically, analyze, and evaluate a problem (Isliyanti & Murdani, 2010; Murdani & Sutarno, 2011). We often hear resistor in our life every day. Each electronic component always has a resistor. Resistor is a conductor wire. The function of the resistor is a resistance or a resistor of incoming current (Ismail, 1995; Soeharto, 1992; Soetrisno, 1979). In this paper discussed about the physics learning process based on practicum. In this learning, students are asked to solve a problem, analyze and evaluate the results of practicum about multimeter. Learning outcome of this practicum is the creation of students understanding about the use of a multimeter to measure the voltage and the electrical resistance of the resistor. In this practicum, students study some circuit of resistor such as single, series, parallel and combination series-parallel. The students make own circuit and measure directly of the equivalent resistance for each circuit.

2. Literature Review

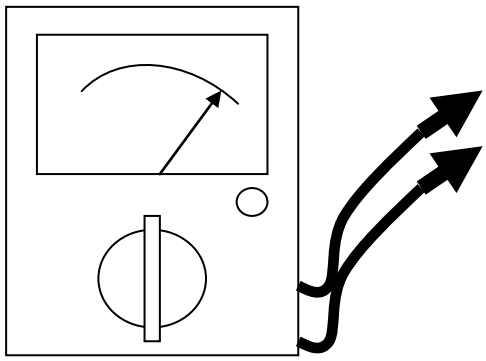
Multimeter is a tool that can be used to measure some electrical quantities such as current, voltage and electrical resistance, usually it also called as AVO meter (A = ampere, V = volt, O = ohm). In the market there are some types of multimeter, but the principle of the guide to use it is not too much different (Ismail, 1995; Giancoli, 1998; Halliday & Resnick, 1984). Multimeter will be used in this practicum is shown in figure 1.

Some important things to note:

a. Measuring limit: limit measure is the biggest price quantity that can be measured by the instrument. Measurements that exceed the limits of measurement can damage the appliance. Conversely, if the price scale that measured well below the limit of measurement, the measurement becomes less scrupulous. For example, we want to measure the expected voltage of 4 V, wear limit measure 5 V and 50 V. If the price is not the amount to be measured cannot be predicted, it is a safe way to start the measurement is to select the largest measuring limit and then lower it if it turns out that the price scale measured well below the limit of measurement used.
b. Note that the sign (~) means AC and signs (---) indicates DC.
c. Do not connect the multimeter directly to the source of current/ voltage without series with an obstacle/ load. Direct link to the source will cause the current into the measuring instrument is large

enough so that it can damage the multimeter (Ismail, 1995; Sears & Zemansky, 1994; Tipler, 1996; Young & Fredman, 2004).

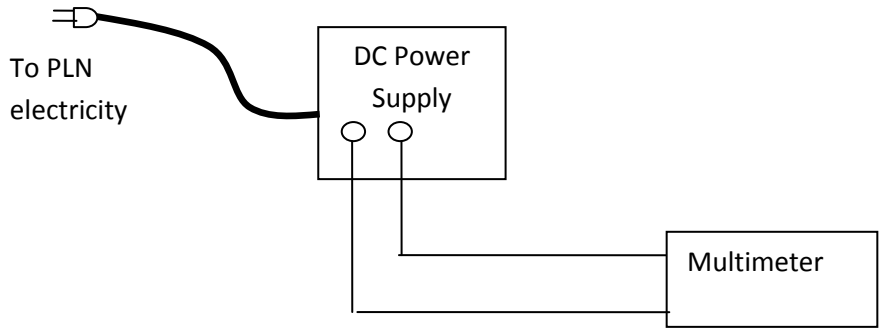
Figure 1: Multimeter



3. Methodology

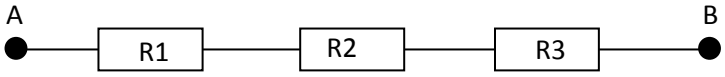
The tools will be used in the practicum is a DC power supply, multimeter, connecting cable, resistor. The first aim of this practicum is to measure the output voltage of the DC power supply. The output voltage from strip 1 to strip 4 on the DC power supply is measured by using a multimeter. Measurement circuit is given by Figure 2.

Figure 2: The series of measurements of the output voltage on the DC power supply



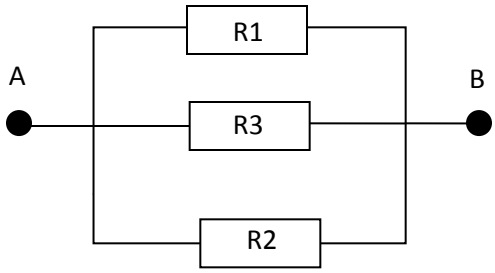
The second purpose is to measure the practical obstacles single resistor in series, series, parallel and series-parallel combination. Resistances resistor is measured by using a multimeter. Resistances resistors are also calculated based on the color of the rings resistor. 3 pieces resistor in series circuit is given by figure 3.

Figure 3: the series of resistor series



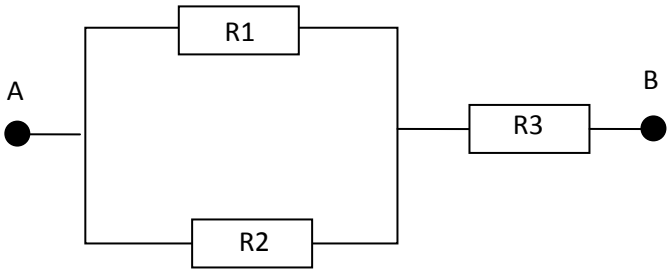
Parallel circuit for 3 resistors is given by figure 4.

Figure 4: Parallel circuit of resistor



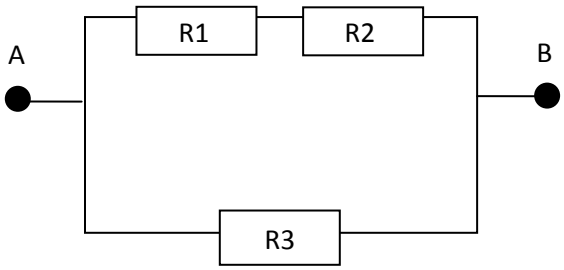
Combination circuit of series-parallel with 2 parallel resistors is given by figure 5.

Figure 5: Combination circuit of series-parallel with 2 parallel resistors



Combination circuit of series-parallel with 2 series resistors is given by figure 6.

Figure 6: Combination circuit of series-parallel with 2 series resistors



4. Results and Discussion

Practicum methods consist of some steps. They are preliminary tasks, pre-test, practical implementation (practicum done), interim reports and a final report. The first step is the provision of preliminary tasks. Preliminary task is given by the form of assignments or homework, with the aim is the students know in advance the basic theory that supports the practicum, along with the methodology of observation table. This preliminary task was collected before practicum begins. The basic theory associated with a multimeter and a series resistor in series and parallel. The second step is the pre-test. Pre-test is given before practicum begins in the form of a written test to see the readiness students to follow the practicum. Pre-test contains the questions about the preliminary task that has been given to the students. The third step is the practical implementation (practicum done). After the pre-test is given to the students then practicum begins. The first aim of this practicum is to measure the output voltage of the DC power supply. The output voltage for strip 1 to strip 4 on the DC power supply is measured by using a multimeter (Figure 2). The measurement results of the output voltage on DC power supply are given by table 1.

Table 1: The measurement results of the output voltage on DC power supply

output voltage of DC Power Supply	Multimeter measurement results (V)
Strip 1	3,0 ± 0,1
Strip 2	6,0 ± 0,1
Strip 3	9,0 ± 0,1
Strip 4	12 ± 0,5

Based on the table 1, the greater of the power supply strip, so that the output voltage of the power supply is greater. In the DC power supply voltage can be changed as needed. The second aim of this practicum is to measure the resistance for one resistor and more resistors on series, parallel, and combination of series-parallel circuit. Resistance of resistor is measured by using a multimeter. Resistance of resistor are also calculated based on the color of the rings resistor (color code). The measurement results of resistance on a single resistor are given by Table 2.

Table 2: The measurement results of resistance on a single resistor

Resistor	color of ring (color code)	Resistance value based on color code (Ω)	Resistance value based on multimeter (Ω)
R1	Brown, black, brown, gold	100 ± 5	110 ± 5
R2	Red, black, red, gold	2000 ± 100	2000 ± 50
R3	Violet, green, red, gold	7500 ± 375	7500 ± 250
R4	Brown, green, red, gold	1500 ± 75	1600 ± 50
R5	Brown, gray, red, gold	1800 ± 90	1800 ± 50

Students get experience in determining the resistance of a resistor by doing this practicum. Resistance values can be determined by reading the color of the rings resistor and can be measured directly with a multimeter. Resistance value is determined by the three color code. The fourth color code describe of precision tolerances for the resistance value. The value on the first color ring states first digit resistance. Value on the second ring color states the second digit resistance. Value on the third ring color states multiplier. So the resistance value based on the color code reading is (first ring value) (second ring value) x $10^{(\text{third ring value})}$ (Ismail, 1995; Giancoli, 1998; Halliday & Resnick, 1984; Sears & Zemansky, 1994; Tipler, 1996; Young & Fredman, 2004). For example, color ring (color code) of R1 is brown, black, brown, gold, so the value of resistance is (1) (1) x 10^1 = 110 Ω with a tolerance is 5%. Tolerance of 5% means the measurement result has the truth value (measurement uncertainty) is 100 Ω ± 5% = 100 Ω ± 5 Ω. Or the measurement result of resistance in the range 105 to 115 Ω (Djonoputro, 1984). The measurement results of resistance on a series circuit (figure 3) are given by table 3.

Table 3: The measurement results of resistance on a series circuit

Resistor	Resistances value (Ω)
R1	2000 ± 50
R2	2000 ± 50
R3	2000 ± 50
R_{AB}	6000 ± 250

Students get experience in determining the resistance of the resistor series by doing this practicum. The fact on the theoretically that the equivalent resistance for 3 resistor series is sum of the each resistance = R_{AB} = R1 + R2 + R3. The equivalent resistance for series circuit will be bigger than the previous resistance or on one resistor (Ismail, 1995; Giancoli, 1998; Halliday & Resnick, 1984; Sears & Zemansky, 1994; Tipler, 1996; Young & Fredman, 2004). The measurement results of resistance on a parallel circuit (figure 4) are given by table 4.

Table 4: The measurement results of resistance on a parallel circuit

Resistor	Resistances value (Ω)
R1	2000 ± 50
R2	2000 ± 50
R3	2000 ± 50
R_{AB}	700 ± 25

Students get experience in determining the resistance of the resistor on parallel circuit by doing this practicum. The fact on the theoretically that the equivalent resistance for 3 resistor parallel (R_{AB}) is obtained from the relation of $1/R_{AB} = 1/R1 + 1/R2 + 1/R3$. The equivalent resistance for parallel circuit will be smaller than the previous resistance or on one resistor (Ismail, 1995; Giancoli, 1998; Halliday & Resnick 1984; Sears & Zemansky, 1994; Tipler, 1996; Young & Fredman, 2004). The measurement results of resistance on the combination of series-parallel circuit (figure 5) are given by table 5. R1 and R2 are parallelized.

Table 5: The measurement results of resistance on the combination of series-parallel circuit where R1 and R2 are parallelized.

Resistor	Resistances value (Ω)
R1	2000 ± 50
R2	2000 ± 50
R3	2000 ± 50
R_{AB}	3000 ± 250

Students get experience in determining the resistance of the resistor on the combination of series-parallel circuit by doing this practicum. R1 and R2 are parallelized so that $1/R_P = 1/R1 + 1/R2$. Substitution of R_P value to equation: $R_{AB} = R_P + R3$ for determining the equivalent resistance (R_{AB}) (Ismail, 1995; Giancoli, 1998; Halliday & Resnick, 1984; Sears & Zemansky, 1994; Tipler, 1996; Young & Fredman, 2004). The measurement results of resistance on the combination of series-parallel circuit (figure 6) are given by table 6. R1 and R2 are in series circuit.

Table 6: The measurement results of resistance on the combination of series-parallel circuit where R1 and R2 are in series circuit

Resistor	Resistances value (Ω)
R1	2000 ± 50
R2	2000 ± 50
R3	2000 ± 50
R_{AB}	1400 ± 50

Students get experience in determining the resistance of the resistor on the combination of series-parallel circuit by doing this practicum. R1 and R2 are in series circuit so that Rs = R1 + R2. Substitution of Rs value to equation: $1/R_{AB} = 1/Rs + 1/R3$ for determining the equivalent resistance (R_{AB}) (Ismail, 1995; Giancoli, 1998; Halliday & Resnick, 1984; Sears & Zemansky, 1994; Tipler, 1996; Young & Fredman, 2004). By the physics learning based on practicum will make students active, engaged directly from start to finish practice, find a direct concept, understand the concept, evoke critical thinking, able to analyze and conclude a case or concept. Students who are directly involved in the learning process will result in a longer memory capacity and more on concepts or materials provided compared with students who just quietly alone or teacher who always lecture course in the learning process. The fourth stage is the making of the interim report. After practice, the interim report prepared by the students in the form of field observation table as shown in table 1 to table 6, answer the questions and data analysis. The fifth step is the final report. The final report is complete and intact practicum collected three days after the practicum is completed. The importance of this final report is to inculcate and foster scientific writing students. So from some of the above description, it is clear that learning involves active students commonly known as the Student Centered Learning (student-centered learning/ students) will result in an effective and efficient learning. With the practicum students are trained active, being scientific, scientific thinking, analyzing scientific and scholarly writing. Which in turn will give a good image of the subjects of physics that physics is logical, sensible, scientific and not a collection of formulas (Isliyanti & Murdani, 2010; Murdani & Sutarno, 2011)?

5. Conclusion

In this practicum has been done measuring of electrical quantities such as voltage by using a multimeter and resistance by color code reading and direct measurement by using a multimeter. In this practicum students understand the use of a multimeter to measure the voltage and electrical resistance. The result of measurement for output voltage of DC power supply by using a multimeter is 3 V, 6 V, 9 V and 13 V. Has been

made of series and parallel circuit for 3 resistors. The resistance value of each resistor is 2000 Ω same as relatively. The equivalent resistance for series circuit of 3 resistors is 6000 Ω and for parallel circuit is 700 Ω. The equivalent resistance is measured by using multimeter. It has been made also for a combination circuit of series-parallel resistor. It has also produced a final report by the students as a form of scientific papers. School is a scientific institution should be able to produce students who are being scientific attitude, scientific thinking, scientific analyzing and scientific writing. By physics learning based on practicum will make students active, follow directly from start to finish practicum, find a direct concept, build critical thinking, able to analyze and conclude a case or concept. Students who are directly involved in the learning process will produce a longer memory and more capacity on concepts given learning to be effective and efficient.

Acknowledgements: Our thanks to Drs. Andi Mursidi, MPA., M.Si, the chairman of STKIP Singkawang who helped the foundation during this research and publication in 7th International Conference on Education and Information Management, Surabaya, 2015.

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Journal of Education and Vocational Research (JEVR)
Vol. 6, No. 3, September 2015 (ISSN 2221-2590)

Physics Learning Based on Practicum: Factors that Affecting Expansion

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Abstract: An object when heated will undergo expansion. Expansion of an object is affected by the expansion coefficient, temperature, and type of object substances that cause the length, area, and volume of the object and other objects differently. Based on these concepts, to investigate the comparative increase in the size of the object that is affected by factors that affect the expansion by heating the body until it reaches the equilibrium temperature. As the object under study will use a block of copper and water with each volume to be measured 10^{-5} m^3 added volume ratio. With the initial temperature of each object 20°C, both substances will be heated up to a temperature of 30°C, 35°C, 40°C, 45°C, dan 50°C. Both substances are then calculated and compared to the increase in volume experimentally and theoretically. After calculation, a score which indicates that the copper block and the water volume is different. Increase the volume of water is greater than the increase in the volume of copper block in each temperature increment. Both these substances are two different substances that have different volume expansion coefficient as well. So we get that expansion coefficient, temperature, and type of object substances have an affect on the expansion that occurs on an object.

Keywords: *Expansion, increase in volume, temperature, type of substance*

1. Introduction

Expansion always occurs on the objects around us are often not aware of. In addition, there are also many objects whose creation can not be separated by taking into account the concept of expansion that occurs as the installation of glass in the windows, the installation of the railroad, wiring a power pole, and so on. This was done so that they may function well as it should be. The expansion is not solely occur without any direct cause of. In general, the expansion that occurs on an object caused by a rise in temperature of the object. In addition, the expansion is also not free of the factors that influence it. Expansion that occurs in the objects around us also have many benefits that can be used for the public good. So that the expansion can be utilized for the benefit of the people, it must first know the concept and the factors that influence it.

2. Literature Review

Temperature is one of the fundamental quantities in physics. Temperature is a measure of the degree of heat or cold an object or measure the speed of motion of the particles in an object and can also be a measure of the average kinetic energy of the particles in an object. Objects that have a temperature high heat and cold objects have lower temperatures. The temperature of an object can undergo changes that result in changes in the properties of objects. Properties of objects that are affected by temperature changes called termometrik properties. One of the properties of objects termometrik is the expansion. Expansion is increasing the size of an object due to the influence of changes in temperature or increase in size of an object for receiving heat. In general, a substance expands when heated and contract when cooled. Large expansion and contraction of it depends on the type of substance or object. If an object is heated, the particles in it will vibrate and away from each other. Such a situation is called to expand. Meanwhile, when cooled, the particles will weaken vibration and closer together. This is called shrinking. Swelling occurs in solids, liquids, and gases (Giancoli, 2001; Halliday & Resnick, 1991; Wulandari, 2012).

Each object is heated will not have the same gain despite heated at the same temperature. It is influenced by the length expansion coefficient owned by the particles making up the object. Length expansion coefficient (α) is the ratio between the length of the initial length per unit increase in body temperature. In addition, it can also be interpreted as the length of each 1 meter at 1°C temperature rise. If an object in the form of three-dimensional solid is heated, there will be an expansion in the direction of the length, width, and height to the object. Therefore, the object is said to experience volume expansion. Large increase in volume is determined by the volume expansion coefficient of the respective object. Volume expansion coefficient (γ) of an object is

the ratio between the increase in the volume of material to the initial volume per unit increase in body temperature. Volume expansion coefficient of an object is equal to three times the length expansion coefficient (Giancoli, 2001; Halliday & Resnick, 1991; Wulandari, 2012).

$\gamma = 3\ \alpha$ (Equation. 1)

$\Delta V = V_0\ \Delta T\ \gamma$ (Equation. 2)

Specification :
ΔV = Changes in volume (m^3)
γ = the volume expansion coefficient (/°C)
V_0 = initial volume of the object at T_0 temperature (m^3)
ΔT = temperature change (°C)

Liquid water always follows the shape of the container it occupies. The container has a space or volume of liquid that just having a volume expansion. At the time the temperature of the liquid rises, the volume will increase, but its mass remains. This causes its density decreases. Equations that apply to the expansion volume of liquid equal to the volume expansion in solids, but the value is greater for the same temperature rise (Eq. 2) (Giancoli, 2001; Halliday & Resnick, 1991; Wulandari, 2012).

3. Methodology

The method used in the scientific journal writing this is to make observations on the experiments carried out directly. Practicum implemented as a means of data collection. Practicum is done is to calculate the increase in the volume of two different substances, namely a block of copper and water by volume of each substance 10^{-5} m^3. Both substances were then heated from the initial temperature of 20°C both until the temperature reaches 30°C, 35°C, 40°C, 45°C, dan 50°C. After that, both substances added volume calculated and the results of these calculations will be used as a reference for comparison between the increase in the volume of experimentally and theoretically.

4. Results and Discussion

Each object is heated will undergo expansion, whether solid, liquid, or gas. Physically, the expansion that occurs on an object can be seen in increase in length, area, and volume of the object. Expansion that occurs between two objects is affected by the length expansion coefficient, temperature, and type of substance that causes the length of objects different from one another. To prove that the expansion of objects affected by the length expansion coefficient, temperature, and type of the object substance, the research carried out by using two different substances, namely a block of copper and water with the volume of each object 10^{-5} m^3 which is then heated to a second the object temperature reaches equilibrium with each other. Both of these substances will be heated to the initial temperature of 20°C until the object reaches a temperature of 30°C, 35°C, 40°C, 45°C, dan 50°C. Block of copper will be heated by inserting a portion of the beam into the water that is heated until it reaches the predetermined temperature. To determine the temperature of the copper block, then use a digital thermometer that touched on the copper block which is outside the heated water. Each copper beam reaches predetermined temperature is 30°C, 35°C, 40°C, 45°C, dan 50°C, then the beam will be calculated where the value added volume obtained will be used as a comparison between the increase in the volume of experimentally and theoretically. Increase the volume of water will be calculated by means of heating water into a cylindrical glass container has a diameter of 1 cm and a measuring scale to determine the volume of water added when heated to a predetermined temperature is 30°C, 35°C, 40°C, 45°C, dan 50°C. To determine the temperature of the water will also use a digital thermometer to be put into water heated to know the temperature changes. The value obtained will be a comparison between the increase in the volume of experimentally and theoretically. Having conducted experiments on both the object of research, the results obtained increase the volume of the object.

Table 1: Added Volume Copper and Water Experiment Results After Heated

Temperature	Volume of Copper (m^3)	Δ Volume of Water (m^3)
30°C	$4,9 \times 10^{-9}$	$2,2 \times 10^{-8}$
35°C	8×10^{-9}	$2,7 \times 10^{-8}$
40°C	$9,3 \times 10^{-9}$	$4,3 \times 10^{-8}$
45°C	$1,2 \times 10^{-8}$	$5,1 \times 10^{-8}$
50°C	$1,5 \times 10^{-8}$	$6,4 \times 10^{-8}$

Having obtained the second volume of value-added objects studied experimentally, the next activity is to determine the added value of both volume of the object studied theoretically (Table. 1). Before the theoretical calculation, first known expansion coefficient of the second volume of the object.

Table 2: Volume Expansion Coefficient (γ) (Arri, 2014; Suarsa, 2011)

Object Name	Volume Expansion Coefficient (/°C)
Copper	$5,1 \times 10^{-5}$
Water	$2,1 \times 10^{-4}$

After volume expansion coefficient of the two objects is known, then performed theoretical calculations to obtain value-added volume of two objects by using the volume of an object changes the equation (Eq. 2). After calculation to obtain value-added volume of the two bodies, it has gained considerable value to compare two objects increase the volume of experimentally and theoretically that poured into the following table.

Table 3: Comparison of Volume Added Copper and Water After heated in Experiments and Theoretical

Temperature	Copper (m^3)		Water (m^3)	
	Experiment	Theoretical	Experiment	Theoretical
30°C	$4,9 \times 10^{-9}$	$5,1 \times 10^{-9}$	$2,2 \times 10^{-8}$	$2,1 \times 10^{-8}$
35°C	8×10^{-9}	$7,65 \times 10^{-9}$	$2,7 \times 10^{-8}$	$3,15 \times 10^{-8}$
40°C	$9,3 \times 10^{-9}$	$1,02 \times 10^{-8}$	$4,3 \times 10^{-8}$	$4,2 \times 10^{-8}$
45°C	$1,2 \times 10^{-8}$	$1,275 \times 10^{-8}$	$5,1 \times 10^{-8}$	$5,25 \times 10^{-8}$
50°C	$1,5 \times 10^{-8}$	$1,53 \times 10^{-8}$	$6,4 \times 10^{-8}$	$6,3 \times 10^{-8}$

Having obtained the value-added volume of both objects based on experimental and theoretical calculations, obtained different results between the increase in the volume of experimentally and theoretically. This can occur due to errors in measurement or an error when reading the value of the measured volume of the object (Hasanah, 2001; Tipler, 1998; Young & Freedman, 2002). In addition, it is also known that an increase in the volume of water is greater than the increase in the volume of copper. It happened because the water has a volume expansion coefficient greater than the volume expansion coefficient of copper. If an object has a coefficient greater volume than any other object, then the object is heated if there will be a greater increase in the volume of the object that has the added volume expansion coefficient smaller volume. The greater the volume expansion coefficient of the object, the greater the increase in volume of the object when it expands (Table. 1, 2, 3).

Temperature also affects the increase in the volume of both substances. Evidently when the temperature is raised both substances, also accompanied by increasing the volume of the object either experimentally or theoretically. Added volume of the object visible when the object temperature of 50° C, the second volume of these substances is greater than when the two substances temperature 45 °C, 40 °C, 35 °C, dan 30 °C (Table. 1, 3). In addition to temperature, the type of object substances also have an influence on the expansion of an object. Different types of body substances have different volumes increase. Automatically, the different types of substances objects have different volume expansion coefficient as well. As well as the research object used in this study is different substances that have different volume expansion coefficient and creates a different volume when heated objects (Table 1, 3) (Hasanah, 2001; Tipler, 1998; Young & Freedman, 2002).

5. Conclusion

Expansion that occurs on an object is affected by several factors, namely expansion coefficient, temperature, and type of object substances. Results of research conducted experimentally and theoretically by using two different types of substances, namely copper and water which is then heated to a certain temperature, obtained data showing that the water has a greater volume increase compared with the volume of copper each increment increase the temperature where water has a volume expansion coefficient greater than the volume expansion coefficient of copper. This suggests that the expansion of an object caused by the temperature where each temperature is raised will happen the length, area, or volume of the object both experimentally and theoretically, and is caused by a type of object substances. If two objects of different substances, automatically both objects will also have a different coefficient of expansion so that the two objects have the length, area, or volume differently when heated. Value-added volume objects obtained through experiments yield different values compared with the value-added volume objects obtained through theoretical calculations. This can occur because of an error when taking measurements or error reading the measurement results.

Acknowledgement: Thanks to STKIP Singkawang who have provided assistance in the form of moral and material and to Mr. Eka Murdani, S.Si, M.PFis as both writer and Advisor to scientific journals can be resolved properly.

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Journal of Education and Vocational Research (JEVR)
Vol. 6, No. 3, September 2015 (ISSN 2221-2590)

Significance of eLearning at Sunway University: A perspective from Art and Design students

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Abstract: Online learning platforms give a great opportunity for various types of learners with different learning abilities to learn at their own pace anytime, anywhere and at any cost. Some of the most common online platforms are Moodle, Blackboard and Virtual Learning Environment (VLE). Each platform has its own impact to the learners. It can be a positive or negative impact depending on the content of the subject matter, layout, design and user friendliness of the course site. However, online platforms can be significant for many learners but not for all. This paper studies the significance of using Blackboard (known as eLearn at Sunway University) in teaching and learning at Department of Art and Design, Sunway University. 79 students at this department had participated in the survey and given their feedback on using eLearn and about 74.7% of them are local students and the rest are international students. Teaching mathematics online can be different from history; teaching spiritual values can be different from science. However, all online teachings and learnings have something in common. There are some factors that make the online facilitators rise and fall at times. This paper also discovers learners' expectation for a better eLearn experience.

Keywords: *eLearn, perspective, teaching, learning, impact*

"We need to bring learning to people instead of people to learning."
Elliot Masie, Masie Center (@emasie) (Gutierrez)

1. Introduction

Education in this 21st century has uncovered various challenging types of teaching and learning styles. Elliot Masie, who leads the MASIE centre in New York and an analyst who has used the phrase e-Learning for the first time, said that learning should be brought to the learners (2015 MASIE Events). One of the effective ways to bring knowledge to learners' doors is through eLearn. Sunway University that is located in the Klang Valley has a very empowering vision, which is 'To be a World Class University' (Sunway.edu.my). Besides providing latest infrastructure and conducive study environment, it urges all the academicians to utilise eLearn in their classes. ELearn uses Blackboard platform to teach and learn online. Thus, this study focuses on identifying the significance of using eLearn among students in the Department of Art and Design to facilitate online teaching and learning. The aim of this study is to reveal a general perspective of students at Department of Art and Design about using eLearn in the university. The main objectives are:

a) To encourage students and academicians to use eLearn in teaching and learning.
b) To revise the use of eLearn based on students' feedback.
c) To assess the success of eLearn in teaching and learning at Department of Art and Design.

This study is conducted among 79 students who have enrolled in three various programmes offered in the department. The programmes are namely, Diploma in Graphic and Multimedia Design, Diploma in Interior Design and Diploma in Fine Art. The students who have participated in the study are from Malaysia, Indonesia, Vietnam, Korea, Sri Lanka, Yemen, Tanzania and others countries and it includes students from semester one to eight. It does not include students from other departments and Faculties at Sunway University. As to study the significance of eLearn at Sunway University, students at Department of Art and Design have been selected for this pilot study. ELearn platform at Sunway University is accessible for registered students and full time staff at anytime and anywhere on any networked devices. Students and staff also may download the eLearn app for their tablets and mobile devices. It enables smarter accessing for better online teaching and learning. The main interface of eLearn log in is shown in Figure 1.

Figure 1: eLearn Log in Screen (Elearn.sunway.edu.my)

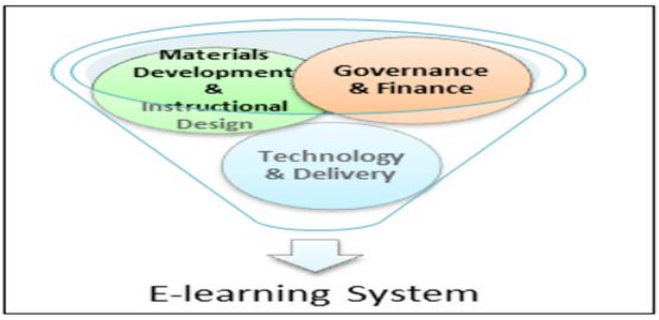
2. Literature Review

Prior to this study, there were several literatures that had been reviewed and inspired to conduct this study at Department of Art and Design at Sunway University. All the selected literature are very recent and within five years of study. Review of a literature gives an overview of research strategy to the study that will be conducted and provides strong grounds to the study as well. The first review done is on The Effectiveness of e-Learning Portal in Distance Education as Perceived by Students in Universiti Sains Malaysia by Siti Sarah Mohd Johari and Issham Ismail from University Sains Malaysia (USM). This study conducted to find out the effectiveness of e-learning portal used in distance education at USM for academic session in years 2007/2008. There were 1084 respondents who had given their feedback in this study. This research revealed that academically the e-learning portal is effective and facilitates the distance learning. Besides assisting online teaching and learning, the e-learning portal also is created as a hub for retrieving academic resources such as articles, books, computer software, comments from subject matter experts, and consultation from academicians. As time goes by, the portal had become an essential tool for both students and academicians in distance learning (Mohd Johari & Ismail, 2011).

The second review is a study conducted in India by Mehra and Omidian in 2011. They believe that elearning could provide a better teaching and learning environment in classroom. This case study is conducted in Panjab University among 400 post graduate students examining their attitudes towards elearning. About three quarter of the respondents provided positive feedback towards elearning. Moreover many students also were found interested to adopt elearning as their choice of better learning platform (Mehra & Omidian, 2015). Another literature review on elearning was conducted in Gulf Region in 2011 by Tubaishat & Lansari. This literature review examined the readiness and perception of students adopting elearning in their university. The study was conducted in College of Information Technology, Zayed University, United Arab Emirates. It is a well-known and competitive university compared to other leading international universities. About 78% of students said that elearning has positive impact in the teaching and learning process and 75% of students had agreed that they can learn effectively via elearning. This study clearly proves that elearning is one of the most preferred mode of teaching and learning methods in the university. Besides these, the study also had proved that students are more self-controlled on their self-paced learning (Tubaishat & Lansari, 2011).

The next review is from Saudi Arabia, another Middle East country. According to this article, one of the studies was carried out by Harvey in 2003 at King Fahd University of Petroleum & Minerals (KFUPM), Dhahran in Saudi Arabia. The study was to investigate students' behaviour on using computers and the impact of elearning in their general academic achievement. About 172 male students participated in the study. The results showed that majority of the students were positive using computer based learning and there was an increase in students' performance at the semester end (Jabli & Qahmash, 2013). One of the proposed strategic model for implementing elearning is recommended by Madar and Willis. They have identified the lack of a strategic model to implement eLearning in higher institutions. Thus they have proposed the Funnel Model as shown Figure 2.

Figure 2: The proposed Funnel Model for eLearning (Madar & Willis, 2014)



They have suggested that content development and instructional design, technology and delivery and governance and finance have to be integrated to achieve a better elearning model. The three elements are in fact depicting pedagogy, technology and governance elements that have to be well coordinated for a successful implementation of elearning experience (Madar & Willis, 2014). The final literature review that had been studied is about E-Learning and Its Effects on Teaching and Learning in a Global Age by Jethro, Grace and Thomas from Nigeria. This study identified a number of advantages of using elearning for better learning experience. It discovered that elearning improved the teaching and learning process, provided better self-paced learning environment and promoted creative and active learning platform (Jethro, Grace & Thomas, 2012).

3. Methodology

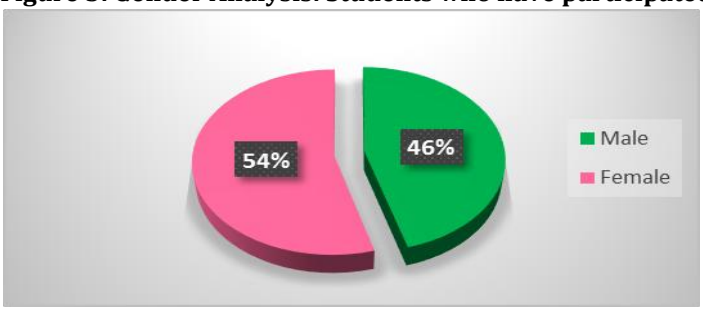
This quantitative study is designed for students at Department of Art and Design, Faculty of Arts, Sunway University, located in Selangor, Malaysia. A questionnaire was designed for students to give their feedback on the significance of using eLearn at Sunway University. There were 100 students who have participated in the survey and only 79 were collected successfully. All the students were from three different programmes, which are Diploma in Graphic and Multimedia Design, Diploma in Interior Design and Diploma in Fine Art. A questionnaire with 30 questions was distributed randomly among students from semester one to eight. Questionnaire was designed using simple English with straight forward and focused questions. The questionnaire also had been divided into three main parts: Demographic Study, Research Study and General Study. Demographic and Research studies included close-ended questions with five-point Likert Scale questions at the end of Research Study. While General Study had open-ended questions for students to give their feedback and opinions about eLearn. This study was conducted at the end of 2014 before the semester break started at the university. In the beginning it was quite difficult to get feedback from students since most of them were preparing for final examinations and project presentations. However, most of them were quite cooperative and completed the questionnaire within the time frame given. Data collected were analysed using SPSS software and MS Excel to display the results effectively.

4. Results and Discussions

Demographic Study: This section has five main questions, studying the gender, nationality, programmes and semester details. The first question is about gender study. From the total of 79 students, 46% (36 students) of participants are male students and 54%(43 students) of them are female. (Please refer to Figure 3). According to Executive Summary from University of Arizona, female respondents are usually more prominent in giving feedback in a survey compared to male respondents. (University of Arizona, 2014). From the following questions, among the male students, 72%of them are Malaysians and 28% are international students from Tanzania, Vietnam, Sri Lanka and other countries where the participants did not indicate their nationalities. 61.1% of male students have enrolled in Diploma in Graphic and Multimedia Design and 38.9% of the rest have enrolled in Diploma in Interior Design. No male students from Diploma in Fine Art have participated in this study. Among all the male students, 6% are from semester one, 19% are from semester two, 6% are from semester three, 14% are from semester four, 19% are from semester five, 11% are from semester six, 22% are from semester seven and 3% are from semester eight. While among the female

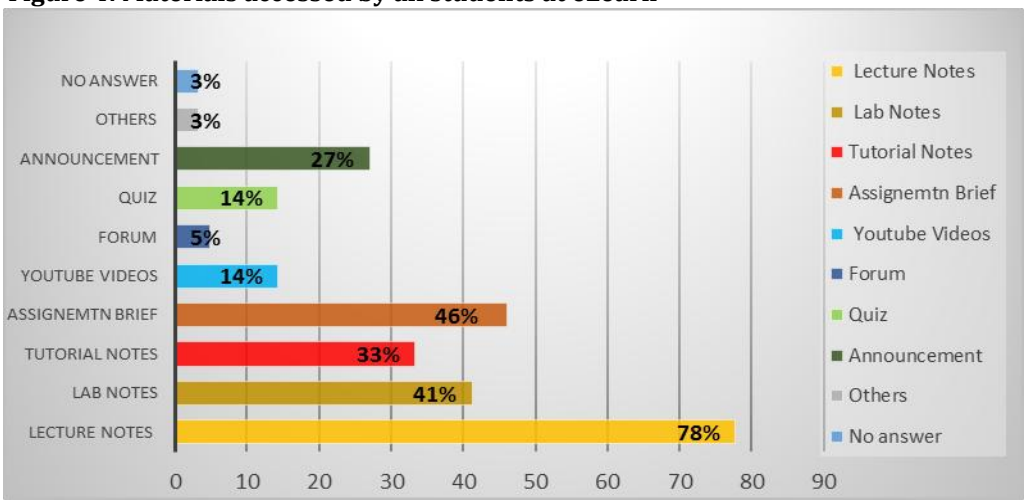
students, 77% of them are Malaysians and 23% are international students from Korea, Indonesia and Yemen. 55.8% of female students have enrolled in Diploma in Graphic and Multimedia Design and 32.6% of the students have enrolled in Diploma in Interior Design and 2.3% have registered for Diploma in Fine Art. Among all the female students, 23% are from semester one, 21% are from semester two, 7% are from semester three, 19% are from semester four, 5% are from semester five, 7% are from semester six, 19% are from semester seven and none are from semester eight.

Figure 3: Gender Analysis: Students who have participated in the study



Research Study: In this section, the first five questions are about eLearn and subjects at eLearn. Question 7 finds out the number of subjects that students have enrolled in eLearn. Among the male students, 28% of them have not registered in eLearn at all. 19% of them have enrolled in one or two subjects in eLearn. 8% of the male students have registered in three subjects in eLearn and 22% of them have enrolled in five subjects. However, 3% of the students did not answer this question. Among the female students, 28% of them did not enrol in eLearn. 30% of them have registered for one subject, 16% of them have registered for two subjects, 2% have enrolled in four subjects, 16% have enrolled in five subjects and 7% of the female students did not answer this question. Question 8, reveals that 83% of the male students have used eLearn and 17% of them did not use eLearn at all. Meanwhile 77% of the female students have used eLearn and 23% of the rest have not used eLearn. Question 9 is about the frequency of visiting eLearn course sites by the students. Combining both groups, it had been found out that 57.1% of the students visit at least once a week, 23.8% of them visit twice a week, 7.9% visit three times a week, 1.6 of them visit four or five times a week, 3.2% of them visit once a semester or less than a week, and 1.6% of them did not answer this question. Question 10 reveals the academic resources that are accessed by students at eLearn. As shown in Figure 4, 78% of the students are accessing lecture notes, followed by 46% of them downloading assignment brief and 41% getting the lab notes from eLearn. This study also shows that only 5% are actively participate in the forum. Academicians need to focus on this issue and improve the two-way communications at online Forum at eLearn.

Figure 4: Materials accessed by all students at eLearn



Questions 11 to 25 use the five-point Likert Scale to study the feedback from the eLearn users. Students who have opt for not using eLearn, would skip this section and fill the final open-ended question section, which is known as General Study. The summary of the results are shown in Table 1 below:

Table 1: Feedback from students who have used eLearn (in %)

Criteria	Likert Scale 5	4	3	2	1	No answer	Number N	Mean M	Variance V	Standard Deviation S
11. ELearn is good	11.1	54.0	22.2	1.6	3.2	7.9	6	16.7	388.1	19.7
12. Access Weekly	22.2	49.2	15.9	4.8	3.2	4.8	6	16.8	388.2	19.7
13. Other academic materials	17.5	46.0	23.8	7.9	1.6	3.2	6	16.7	279.4	16.7
14. Attractive interface	12.7	33.3	30.2	14.3	6.3	3.2	6	16.7	154	12.4
15. Prompts one way communication	4.8	42.9	39.7	4.8	4.8	3.2	6	16.7	364.5	19.1
16. Feedback within two days	15.9	33.3	33.3	9.5	4.8	3.2	6	16.7	185.5	13.6
17. Posted comments at discussion forum	14.3	30.2	23.8	9.5	17.5	3.2	6	16.4	94.5	9.7
18. Downloading notes	15.9	52.4	14.3	9.5	4.8	3.2	6	16.7	331.3	18.2
19. Accessed YouTube or quiz	14.3	34.9	23.8	9.5	14.3	3.2	6	16.7	125.5	11.2
20. Lecturer is active	27.0	39.7	19.0	6.3	4.8	3.2	6	16.7	214.5	14.6
21. Clear instruction to enrol	28.6	41.3	22.2	3.2	1.6	3.2	6	16.7	274	16.6
22. Encourage me to access eLearn weekly.	25.4	36.5	25.4	4.8	4.8	3.2	6	16.7	201.8	14.2
23. ELearn always accessible anywhere anytime	27.0	46.0	19.0	4.8	0.0	3.2	6	16.7	314.5	17.7
24. Classroom must equip with pc to access eLearn	19.0	47.6	23.8	3.2	3.2	1.6	6	16.4	320.5	17.9
25. ELearn fulfils my learning experience at DAD	19.0	41.3	30.2	1.6	4.8	1.6	6	16.4	278	16.7

The study shows that question 11, *I find that eLearn is a good online Learning environment,* has the mean value of 16.7 with highest standard deviation, S=19.7. Question 2, I can access to weekly class notes at eLearn has the highest mean value of 16.8 with highest S=19.7 as well. This is a good remark that students are having a positive perception about eLearn at Sunway University and expecting weekly notes and want the lecturers to be actively participate in eLearn. Questions 13, 14, 15, 16, 18, 19, 20, 21, 22 and 23 have the same mean value of 16.7. Questions 17, 24 and 25 have the lowest mean value of 16.4. Meanwhile the questions 13 and 25 have the same standard deviation value of 16.7. Questions 15 and 18 have a little higher standard deviation value of 19.1 and 18.2 respectively. Questions 21, 23, and 24 have the standard deviation values of 16.6, 17.7 and 17.9. Other questions have standard deviation values below 15 and these criteria have to be taken note for improvement by the academicians in general. The lowest standard deviation value is question 17 which has only 9.7. This shows that forum has not been active as expected by students. Academicians need to create a positive two way communication in the forum for students to actively engage in eLearn.

General Study: This is the final section of the questionnaire that has 5 open-ended questions. These questions were intended to get feedback from students for betterment of eLearn course sites. Question 26 seeks students' perception on eLearn compared to other Social Network sites such as Facebook. Question 27 identifies if students like to use eLearn. Questions 28 and 29 unveil the pros and cons of using eLearn and the final question discovers the recommendations from students for a better eLearn environment. For Question 26, majority of students had agreed that Facebook is better than eLearn. This is because Facebook has simpler interface design and is user friendly compared to eLearn. Facebook also has lots of other interesting topics whereas eLearn is very academic. Most of the students who have answered Question 27, disliked eLearn. They mainly use it for downloading notes and the interface is boring. Students who have answered question 28, highlighted the benefits if using eLearn is downloading lecture notes, lab notes and tutorial notes only. They did not find it interesting or conducive for online learning. In question 29, many students found in complicated and confusing interface design. Students also highlighted that it has many steps in eLearn to access information. Finally, in question 30, many students suggested that eLearn should have attractive layout, better navigation system, frequently update contents, and get connected to online social media.

5. Conclusion

This study is conducted to identify the significance of using eLearn among students at Department of Art and Design, Sunway University. Sunway University always strives its best to provide the best conducive environment for teaching and learning. As one of the attempts to fulfil students' self-paced learning, it introduced online platform called eLearn for students to enjoy better pedagogical environment. This study it has been discovered that many students do not find eLearn as interesting as other social network sites, especially Facebook. Most of the students are using eLearn for downloading and accessing lecture, lab and tutorial notes only. Academicians need to play a vital role improve the two-way communications via eLearn. As said by Steve Jobs, *"Design is not just what it looks like or feels like, but how it works."*(Eskills.ch, 2015). Although there are apps for downloading eLearn for mobile devices, the usage is not as expected by students. Thus, referring back to the objectives, academicians need to formulate better strategies to develop effective eLearn course sites for effective teaching and learning, revise the contents based on students' feedback and assess the results to create successful course sites.

Recommendations: Based on feedback obtained from students, a thorough analysis has to be done at department level to improve the quality of eLearn platform. Besides that more feedback should be obtained from students at various departments and faculties at Sunway University to get a better impression of the overall issue. Also it is important to get responses from academicians as well to understand their opinions on using eLearn and study the impact from the instructors' point of view. It is also recommended that academicians may need to be sent for eLearn trainings to improve themselves as online instructors. It is also suggested to conduct trainings or simplified demonstration sessions for students on how to navigate around eLearn environment. More studies on eLearn should be conducted at university level to provide an enhanced online teaching and learning environment.

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Journal of Education and Vocational Research (JEVR)
Vol. 6, No. 3, September 2015 (ISSN 2221-2590)

Factors Contributing to Brand Loyalty towards Malaysia Higher Educational Institutions

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Abstract: This study aimed at filling the gap in the current marketing literature on the driver of brand loyalty towards public higher education institutions in Malaysia. The drivers of brand loyalty studied include university image and perceived teaching and learning quality. Toward meeting the objective, a self-administrated questionnaire was employed. Smart PLS was used to analyze data from 150 international students of Universiti Utara Malaysia. The result revealed that university image and perceived teaching and learning quality were significantly linked to each other and significantly affected brand loyalty. Proximity this finding will help policy maker to design or develop new marketing strategy in higher education institution which is compatible with student perception as well as to increase the number of international student enrollment.

Keywords: *University image, perceived teaching and learning quality, brand loyalty*

1. Introduction

Branding has become a corporate strategy for many higher learning institutions (HEIs) to enable them to compete locally and internationally. With a powerful branding and unique corporate identities, HEIs can differentiate themselves among their competitors (So, Parsons, & Yap, 2013; Watkins & Gonzenbach, 2013). More importantly, a strong brand can enhance market awareness among potential customers as well as market share (Bennett & Ali-Choudhury, 2009). Hence, a strong brand should be recognizable and meaningful to consumers (Watkins & Gonzenbach, 2013) to ensure student retention and student loyalty (Helgesen & Nesset, 2007a; Hennig-Thurau et al., 2001; Vander Schee, 2010). Hennig-Thurau et al. (2001) argued that student loyalty is synonymous with student retention. Brand loyalty is becoming a major goal of many higher education institutions and not surprisingly many are using student loyalty to measure performance. In fact, successful universities are those that can develop student loyalty. For these universities, investing in student retention is better than investing in new student enrollment because student retention can enhance the survival of the institutions (Williams Jr, Osei, & Omar, 2012) .

Understanding the main predictor of student loyalty will assist marketing managers and policy makers in HEIs to outline their strategies in order gain competitive advantage particularly brand creation (Fernandes, Ross, & Meraj, 2013). Service marketing literatures in education identify university image and perceived quality as the relevant antecedents of loyalty (Helgesen & Nesset, 2007a; Vander Schee, 2010). However, most of the preliminary studies in brand loyalty have only carried out in a small number of areas higher education institutions(HEIs) (Gounaris & Stathakopoulos, 2004; Bianchi, Drennan, & Proud, 2014). Therefore, this study attempted to investigate the drivers of brand loyalty in HEIs as suggested by a number of scholars (Mupemhi, 2013; Obermeit, 2012). A higher education institution with a strong brand name conveys a positive image and reputation and is capable of delivering high quality education. It has been found that a strong brand name is identifiable, enduring, and meaningful to consumers (Louis & Lombart, 2010). Further, Sean, Hyun, and Kim (2011) and Tran, Nguyen, Melewar, and Bodoh (2015) proposed that image could be derived from consumer perception, experience, and feeling towards the object (product, services, firms and brand). Accordingly, this study extended the existing work by researching international students' impressions, belief, feeling, and knowledge to identify how a university's image affects their current places of study.

Existing studies showed that a university image is the most essential factor that influence potential students to choose public universities as their study destination (Khairani & Razak, 2013; Hoyt & Brown, 2003). However, according to Tas and Ergin (2012), literatures in the topic of university image are still lacking even though many researchers in marketing have recognized the critical roles of image and perceived quality in consumer buying behavior (Andreassen & Lindestad, 1998; Milfelner, Snoj, & Pisnik Korda, 2011; Sean Hyun & Kim, 2011). These two constructs have also been shown as important in developing and maintaining

customer loyalty (Helgesen & Nesset, 2007b; Lin & He, 2014; Wu, 2013). Also, literatures reveal a few empirical evidence to support the study of university image by (Jin, Lee, & Lee, 2013; Sean Hyun & Kim, 2011). Based on the gaps identified in the literatures, this study aimed at identifying international students' perception of the image and the quality of teaching and learning quality of the university, and how their perception affects their loyalty towards the university. Toward this objective, we organized this paper into four sections. First, a review on university image, perceived teaching and learning quality and brand loyalty is discussed. Then the method employed to meet the research objective is outlined. Next, the result of the study is offered. Then, a discussion of the result as well as implications for higher educational institutions, particularly marketing managers and policy makers, is presented.

2. Literature Review and Hypotheses Development

Brand loyalty: According to Oliver (1999), brand loyalty is a customer commitment to consume and patronize a favorite product and services consistently in future. Loyal customer has intention to share positive experiences with other people regarding the same brand name. Sirdeshmukh, Singh, and Sabol (2002) also contended that expressed loyalty is an intention to act a diverse set of behavior such as positive word of mouth, repeat of higher purchase, and pay a premium price to a certain brand or object. Meanwhile, Jacoby and Kyner (1973) related brand loyalty to a psychological construct, which is a result of both attitude and behavior. This is consistent with other definitions that have been proposed to measure loyalty. Essentially, brand loyalty has attitudinal and behavioral components (Baloglu, 2002; Chaudhuri & Holbrook, 2001). Although there are many antecedents that affect loyalty, the objective this current study was to investigate the potential antecedents of customer loyalty towards non-profit organization (university), (Ashby, Richardson, & Woodley, 2011; Clemes, Cohen, & Wang, 2013; Richardson, Slater, & Wilson, 2007a, 2007b).

University image: Kotler and Fox (1995) stated that university image can be defined in many ways. Some researchers defined university image as a set of beliefs and impression about a place, destination or organization (Chun, 2005; Mercedes Marzo-Navarro, Pedraja-Iglesias, & Rivera-Torres, 2005; Olmedo-Cifuentes, Martinez-Leon, & Davies, 2014). Literatures show that image can be developed on different things such as product, brand, and organization (Cretu & Brodie, 2007; Lemmink, Schuijf, & Streukens, 2003; Nguyen & LeBlanc, 2001; Tran, Nguyen, Melewar, & Bodoh, 2015). Literatures also indicate that customers who possess a good image of a product and services tend to have favorable attitude towards product or services brand as well as towards the brand's product quality (Kandampully, Juwaheer, & Hu, 2011; Sean Hyun & Kim, 2011). Consistently, Andreassen and Lindestad (1998) and Dla, Arslanagi, and Kadi (2013) believed that image influences customer perception on quality and value of the product or services. Therefore the following hypothesis was proposed.
H1: ***There is a significant relationship between university image and perceived quality***

Perceived quality and brand loyalty: This study defined perceived quality as the overall judgment and the generally excellent or superior evaluation by a customer on the quality services (Zeithaml, Berry, & Parasuraman, 1988). Also, Zeithmal, Parasuraman, and Berry (1990) pointed out that balancing between perception and customer expectation in delivering service quality influences customer satisfaction towards service providers. Later, Zeithaml, Berry, and Parasuraman (1996) defined perceived service quality as a differentiation or comparison of customer expectation with their perceptions of product or services performance. In recent years, researchers have investigated a variety of approaches to measure perceived quality. However, the essential problem in the implementation of such approaches lies in the nature of service quality construct in which its representation is extremely difficult to define and measured (Abdullah & Zamhari, 2013; Ahmad, 2014; Anadol, 2013). In the context of services industry SERVQUAL could measure empirically, however it is still being debated for a number of reasons (Sultan & Wong, 2010; Nadiri et al., 2009; Lother Kreck, 1997). For example, Kreck (1997) questioned the dimensionality and items for measure of SERVQUAL in their studies. On the other hand, SERVPERF dimension only focuses on customer perception on service quality and is difficult to apply in other industries like higher education institutions (Abdullah & of studenZamhari, 2013). Abdullah (2006) developed Higher Education Performance (HEdPERF), comprising 41 items to examine perceived quality in higher education institutions. Thus, this instrument is limited in its scope in which student expectation and services performance paradigm in HEI's (Aslam et al., 2012; Abdul Manaf, Ahmad, & Ahmad, 2013). While literatures show that studies on perceived quality and satisfaction are

already matured (Ahmad, 2014; Khan, Ahmed, & Nawaz, 2011), perceived teaching and learning quality is posited to be related to creating brand loyalty in higher education (Ashby et al., 2011; Vander Schee, 2011). It is somehow dissimilar the predictors of brand loyalty. In fact, previous studies on perceived quality and brand loyalty have shown that these constructs are crucial for measuring student loyalty in context student as a consumer in HEIs (de Macedo Bergamo et al., 2012; Hennig-Thurau et al., 2001). Therefore, this study attempted to minimize the gap of perceived quality in higher education institutions context. Consequently, the following hypothesis was formulated.

H2: There is a significant relationship between perceived quality and brand loyalty

3. Methodology

Data collection and sample profile: Data were collected in September 2014 and ended by mid October 2012 randomly selected of 150 undergraduate and postgraduate international students of Universiti Utara Malaysia (UUM). Toward meeting the objective, a self-administrated questionnaire was employed to collect data from international students. The intercept survey method was used to collect the data from three different colleges. Of 150 questionnaires distributed, 101 (67.3 percent) were valid for analysis. The majority of the respondents were male (61.4%) compare female student only (38.6%). Sample size is adequate for reliability and validity interpretation according to (Nunnally & Bernstein, 1978).

Measures: This study adapted the scales from established measures of university image, perceived teaching and learning quality, and brand loyalty. The measure of university image was adapted from Lymar and Mohajerani (2013), which was modified and adapted from Bennett and Ali-Choudhury (2009b). The final measure had three dimensions with 21 items: Covenant (4 items), quiddity (15 items), and symbolic and external representation (3 items). The measure of perceived teaching and learning quality (PTQ) was adapted from Richardson et al. (2007a). The PTQ scale includes 35 items, representing nine dimensions: The teaching course was measured by five items, organization and management, personal development, career and development were measured by four items each, and feedback on submitted work, assessment on the courses, workload, support and advice were measured by three3 items each. Finally brand loyalty was measured by 15 items adapted from Sui and Baloglu (2003) and Hennig-Thurau, Langer, and Hansen (2001). The instruments used a seven-point Likert scale, ranging from 1 = strongly disagree to 7 = strongly agree.

4. Data Analysis and Results

Data analysis method: Structural Equation Modeling (SEM) with Smart PLS 2.0 M3 (Ringle, Wende, & Will, 2005), was used to examine the measurement model and structural model (hypothesis). This approach was selected because fewer demand in terms of number of sample size utilized, not required normal data distribution and also can be applied to complex structural equations models with large numbers of constructs compare with employed of CBSEM (covariance-based structural equation model technique) (Chin, Marcolin, & Newsted, 2003). The following section discusses the examination of the measurement model and structural model using SmartPLS 2.0. Prior to evaluating the measurement model, preliminary data were made to ensure the data can parsimoniously explain the model and clean for further analysis.

Measurement model: Table 1 illustrates the findings of the analysis including the Cronbach's alpha of each variable such as university image ($\alpha = 0.906$), perceived quality ($\alpha = 0.956$), and brand loyalty ($\alpha = 0.792$). As shown, the alpha values exceeded the recommended threshold of 0.7 (Nunnally & Bernstein, 1978). Further, the composite reliability (CR) ranged between 0.885 and 0.966, and the average variance extracted (AVE) ranged between 0.505 and 0.654. The CR values exceeded the recommended threshold of CR ≥ 0.7, while the AVE values were more than the cut-off point of 0.5 (Hair, Babin, & Anderson, 2010). With reference to the results, the convergent validity of the measures was established (Hair et al., 2010).

Table 2: Convergent validity

Construct	1	2	3	No of items	Loadings	AVE	CR
1. Brand loyalty	1			15	0.640-0.902	0.654	0.966
2. Perceived quality	0.721	1		35	0.628-0.776	0.505	0.957
3. University image	0.512	0.719	1	21	0.656-0.794	0.525	0.885

Table 1 also shows the results of the discriminant validity assessment by investigative its average extracted AVE value. Convergent validity is acceptable when constructs have average variance extracted (AVE) value of at least more than cut off 0.5. Moreover the result also indicate the value of the constructs' correlations and the square roots of AVE was less than 0.85, it representing that there was no multicollinearity in the data set. This illustrate that the discriminant validity of the construct was confirmed (Fornell & Larcker, 1981).

Structural model and hypothesis testing: The SmartPLS analysis was used to test the hypothesized relationships between the constructs in the proposed model. In order to test the hypothesis path, the SmartPLS bootstrapping was employed. The function of bootstrapping is used to generate the t –statistics values. While in this study SmartPLS bootstrapping use to generate 500 samples from 101 cases to obtain t- statistic values. In assessing the PLS model, the squared multiple correlations (R^2) of each endogenous latent variable were initially tested and significantly evaluated for the structural path in the measurement model (SmartPLS Algorithm). Table 3 shows the summarized results of path coefficient and t–values. The path analysis showed that university image had a significant effect on perceived teaching and learning quality ($\beta = 0.719$, $t = 16.383$). It explained approximately 51.7% of perceived teaching and learning quality ($R^2 = 0.517$). Perceived quality also had a significant effect on brand loyalty construct ($\beta = 0.721$, $t = 12.302$), and it explained approximately 52.0% of brand loyalty ($R^2 = 0.520$). While the values of R^2 was greater than 0.26 (substantial) that was suggested by (Chin, 1998), it is high enough for the model to achieve a minimum level of explanatory power (Hair, Sarstedt, Ringle, & Mena, 2012; Urbach & Ahlemann, 2010).

Table 3: Result of the structural model

Hypothesis	Relationship	Standard beta	Standard Error	t-value	R^2	Decision
H1	University Image → Perceived Quality	0.719	0.048	14.872**	0.517	Supported
H2	Perceived Quality → Brand Loyalty	0.721	0.056	12.900**	0.520	Supported

**$p < 0.01$, *$p < 0.05$

5. Discussion and Implication

Our results showed that the international student's perception towards HEIs was affected by information gathered from marketing communication of the university itself (Hosseini & Nahad, 2012). The favorable perception the students had might be explained by their academic performance and positive experience as students of the institution. The finding demonstrated that university image had a significant impact on perceived teaching and learning quality. This suggests that image involves the perception that is related to past experience and knowledge as an important predictor of teaching quality. In this manner, the result is consistent with previous studies (Aydin & Ozer, 2005; Milfelner et al., 2011; Sean Hyun & Kim, 2011). Our finding suggests that students are concerned with the teaching quality at the university, for instance, with the way the instructors explain the subject to make it interesting. Also, the assessment and feedback from the instructors is important to make them better understand the subject. In addition, the students expect to get support in their studies from their instructors for personal and career development.

Our finding further showed that perceived quality was a key antecedent of brand loyalty. The result is consistent with previous studies (Alves & Raposo, 2010; Liat, Mansori, & Huei, 2014; Perin, Sampaio, Simoes, & de Polvora, 2012). We also demonstrated that university image and perceived teaching and learning quality significantly predicted brand loyalty. Based on our result, a positive perception on teaching and learning

quality will impact the word-of-mouth marketing. In this context, our finding is similar to Çetin (2011) and Rubeena Cetin (2004), who asserted that a positive image of a university will facilitate the university in selecting good international students

Limitation and future research: This study makes several contributions to the marketing literature, especially to HEIs in Malaysia. However, despite these contributions, the findings must be viewed in light of the following limitations. Firstly, the sample was only taken from one public university and future research could expand the sample by including all public universities in order to reach a meaningful conclusion regarding perceived teaching and learning quality and brand loyalty path. Secondly, this study used nine dimensions of perceived quality (teaching course, organization and management, personal development, career and development, feedback on submitted work, assessment of the courses, workload, support and advice) to measure perceived quality and two dimensions to measure brand loyalty (attitudinal and behavioral). However this study did not discuss other issues that might be influencing the perception on brand image. For an example, Tran et al. (2015) argued that external communication, positive feeling, and environment are able to create a more consistent image. Therefore, future studies are recommended to investigate the interaction of such dimension to form brand image. Also, this study was cross-sectional in nature. Perhaps, a longitudinal study can be conducted to derive more enriched findings.

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Journal of Education and Vocational Research (JEVR)
Vol. 6, No. 3, September 2015 (ISSN 2221-2590)

A Descriptive Study of Thailand's ESP Programs: Policy Implications for AEC

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Abstract: As a country member, Thailand needs to prepare for the upcoming AEC. One way to look at how the country has prepared for this is to look at the ESP programs offered in universities, both public and private, especially ESP programs in preparation for the eight careers: engineering, hospitality & tourism, architecture, dentistry, medical practices, accounting, surveying, nursing. This study therefore explores the AEC careers offered in public and private universities. This was a descriptive study. The international programs under study fell into two levels: Bachelor (335 programs) and Master (436 programs). The results of descriptive analysis revealed these findings. On the eight AEC careers, three most popular programs offered in Thailand included hospitality & tourism, engineering and accounting respectively. On the other hand, no land surveying programs are offered at both levels; no dentistry programs at Bachelor level; no medical practice is offered at Master level. For policy implication, Thailand should offer these programs in the future.

Keywords: *A descriptive study, Thailand's ESP programs, policy implications for AEC*

1. Introduction

The Association of Southeast Asian Nations signed an aspiring agreement in 2007 to build ASEAN Economic Community (AEC) to be ''One Vision, One Identity, One Community." The ability and willingness of learning and utilizing new knowledge and technologies are essential to rise up a nation competitiveness, productivity and economy. Today especially, ASEAN countries need intelligent workers more than ever before; whereas they do not have educational systems capable of producing the workforces that are required. In order to improve professional qualifications and skills from 2005 to 2012, ASEAN Member signed Mutual Recognition Arrangement (MRA) to offer 8 standard occupations, which are medical practice (doctor), dentistry, nursing, engineering, accounting, architecture, surveying and hospitality & tourism. Thailand has positioned itself as a hub of higher education in the Southeast Asian countries and aims to develop the quality of higher education that meets international standards in order to strengthen major manpower and enable to compete with the other countries.

2. Literature Review

Thailand has been established of a modern system of higher education for nearly 100 years. In 1917, the first university, Chulalongkorn University, was found in Thailand. In 1934, Thammasart University was established with the aim of educating a large number of people in the moral and political sciences. In 1960, Thailand introduced a five-year National Development Plan after having learned from the United States of American, through the United States Agency for International Development Program. The history of Thailand international education can date back to the 17th century, in which the first foreign school was, opened (CharasSuwanwela, 2000). In 1990, Assumption Business Administration College (ABAC), the first international university, was opened to offer various programs. After joining the World Trade Organization (WTO) , Thailand has played a more active role in the regional and international markets. Due to the influence of technological advances, globalization, international trade, and investments, Thailand's higher education needs to help strengthen Thai human resources to face both international and global challenges (Chang, 2004).

Table 1: The Number of international programs in Thailand during 2004-2012

Academic year	Number of International Programs	Bachelor Degree	Master Degree	Doctoral	Others
2004	465	153	203	109	0
2005	520	176	217	127	0
2006	727	241	290	178	18
2007	844	277	327	220	20
2008	884	296	350	215	23
2010	981	342	389	225	25
2012	1,071	344	394	249	30

The Office of the Higher Education Commission (2005-2014)

This table shows that the number of the international programs of both public and private universities in Thailand is rising annually. In 2004, there were only 465 international programs offered by Thai higher institutions. However, there were 1,071 programs taught in English at undergraduate and graduate levels in 2012. According to the Office of the Higher Education Commission (2009), "Curriculums offered were jointly designed by Thai and foreign counterpart high education institutions". During these years, the international education rapidly increased and attracted more Thai and foreign students join these programs. From the early 1960's English for Specific Purposes (ESP) has grown to become one of the most prominent areas of EFL teaching today. English for Specific Purposes is a movement based on the proposition that all language teaching should be tailored to the specific learning and language use needs for identified groups of students – and also sensitive to the socio-cultural contexts in which these students will use English (Celce & McIntosh, 1991).

Thailand, one of the first five foundation countries, including Republic of Indonesia, Malaysia, and Republic of the Philippines, Republic of Singapore, played a vital role in the establishment of the Association of Southeast Asian Nations on the 8th of August 1967. Thailand's economy grew rapidly during these years (Schwab, 2010). Many workers have acquired competences on-the-job yet remained without qualifications. The lack of professional workforce is a big challenge for Thai to meet the coming AEC free labor market (UNESCO, 2014). A number of measures are envisaged to improve the quality of education and training in Thailand. These include improving the quality of content, inputs and standards, introducing assessment based on learning outcomes, and ensuring internal and external assessment of educational institutions at every qualification level (Choomnoom, 2011). The capacities of educational institutions and of public and private sector training providers to implement the Thai National Qualifications Framework (NQF) will be strengthened, making them better able to meet the needs of production and services. Training will also be introduced to raise the caliber of educational personnel (UNESCO, 2014).

Despite a number of challenges, the Thai government managed to formulate a 15-year framework for the country's higher education, starting from 2008, Thailand's educational strategies to prepare to enter the ASEAN countries in terms of English proficiency, curriculum development, teaching with international quality standard. To assist the nation towards this goal, the Ministry of Education has mandated that the education sectors throughout the nation are to prepare their students for ASEAN Community 2015 (ASEAN Curriculum Sourcebook, 2012). As for the other ASEAN member countries, Cambodia, Indonesian, Lao PDR, Myanmar, Philippine, Vietnam, a major challenge will be to address the mismatch between the needs of the labor market in terms of skills, critical thinking ability and knowledge and the current products on the market (Juan, 2014). Being an ASEAN member, those countries enjoy a lot of benefits from larger market access and lower input and free regional mobility of skilled labor (Aring, 2015). To face those challenges, those ASEAN countries established a lot of national policies to enhance capacity of higher education, such as The Educational Management Information System Master Plan 2014-2018, Cambodia (Ministry of Education Youth and Sport, March 2014, p-ii); National Skill Development Authority (NSDA), Myanmar (Ministry of Labor, Employment and Social Security, 2014); Vietnam Education in the Early Years of the 21st Century (Do, 2013).

In Malaysia and Thailand, the governments believe that investing in graduate education contributes to national economic development (Chien & Chapman, 2014). Malaysia, a Thai neighboring country, has also a national objective to become an educational hub in the region (Zaaba et al., 2011). Only Singapore and Brunei Darussalam have already achieved much in meeting AEC's goals. For Brunei Darussalam, ASEAN Secretariat marked the Sultanate's AEC Scorecard highly back in May 2012, with eight out of 19 categories already fully implemented and remainder more than half completed (The Ministry of Education Strategic Plan, 2012-2017). Borneo Bulletin Online (March 25, 2015) reported that Brunei Darussalam stands to reap the benefits of a structural business regulatory reform as it works toward the realization of the ASEAN Economic Community (AEC) by the year's end. For Singapore, the preparations are as follows: Increasing Cohort Participation Rates through increased spending, Enhancing Continuing Education and Training Landscape, Maintaining Affordability of Higher Education, Cross-Border Higher Education, ASEAN Credit Transfer System, Student Exchanges, Building up SEAMEO Research Clusters in the areas of Urban, Environment and Sustainability Issues, Health and Medical Issues, and Social Sciences. Singapore is also the best prepared for the AEC because the city-state is a free port that has never relied for long periods on tariffs and other economies depend heavily on tariff duties (The Nation, 2013).

Purposes of the Study and Research Questions: This paper is based on a study from 335 Bachelor international degree programs and 436 Master international degree programs both at public and private universities in Thailand, focusing on the programs that are supporting 8 AEC careers. This paper aims to discover whether Thai higher education is ready for the full implementation of the ASEAN Economic Community at the end of 2015 or not. And the research questions are as follows:

- How many international ESP programs are supporting 8 AEC standard careers?
- What are the details of those programs offered by Thai institutions?

3. Methodology

This is a content analysis study. The researcher uses descriptive statistics as the instrument to analyze data. The data are presented by charts and diagrams. The findings of the study were grouped by using descriptive statistics into two categories: overview of Thai higher international education that supports 8 AEC careers, details of 8 AEC careers in both public and private universities in Thailand.

4. Findings, discussion and conclusion

This part presents the findings, discussions and a conclusion of the study.

Figure 1: Number of 8 AEC careers international supporting programs offering at Thai universities

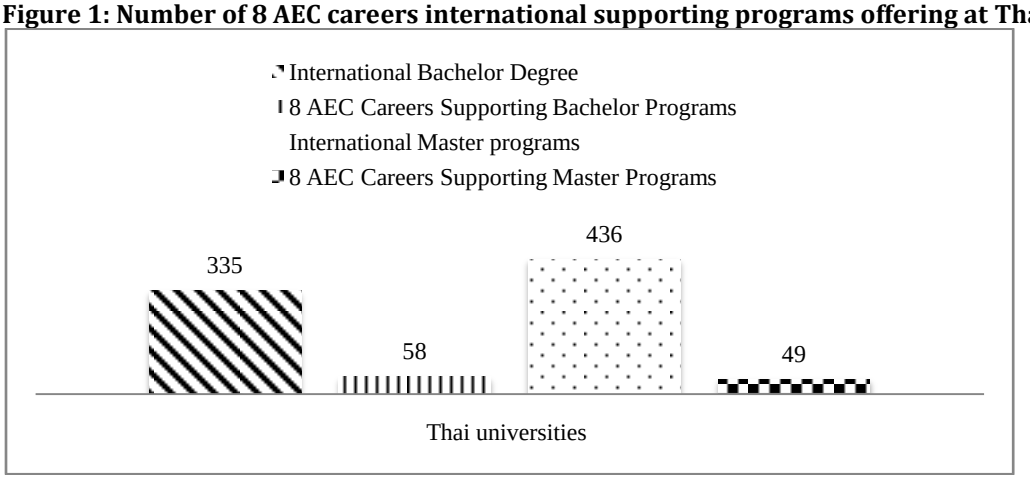

Figure 1 shows that Thai universities offer 335 international Bachelor programs while 436 international Master programs. Only 58 Bachelor and 49 Master programs are offered by English to support 8 AEC careers.

Figure 2: Number of Thai Universities offering International Bachelor Degree programs among 8 careers for AEC

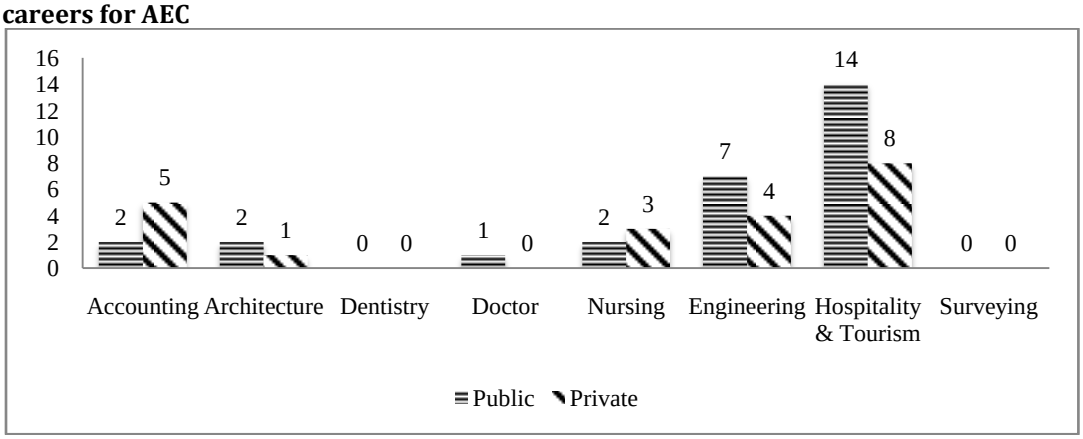

Figure 2 shows international Bachelor degrees that help towards 8 occupations for AEC. None of the public or private universities offers undergraduate international programs to support surveying and dentistry. But fourteen public and eight private universities offer hospitality & tourism program. Three private universities offer nursing while two public universities offer it. Seven public universities offer engineering program while four private universities offer it. Only one public university offers medical practice (doctor) programs while no private university offers it at all. Two public universities and one private university offer architecture program. Furthermore, five private universities and two public universities offer accounting program.

Figure 3: Number of Thai Universities offering International Master Degree programs among 8 careers for AEC

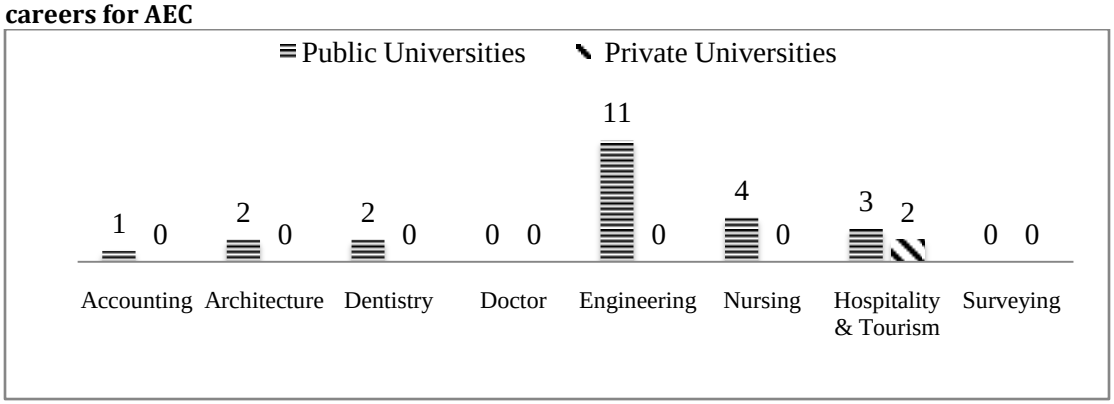

Figure 3 shows that none of the public or private universities offer undergraduate international programs to support surveying and meidical practice (doctor). Private institutions only 2 universities offer hospitality & tourism program. 11 public universities offer engineering, while 4 universities offer nursing program. 3 universities offer hospitality & tourism program, while 2 universities offer architecture and dentistry programs. Only 1 university offers Accounting program. Figure 3 indicates that private universities show less competitivenss on Master programs. They only offer two programs to support 8 AEC standard occupations. Public universities also offer a few programs. No surveying and doctor are offered by both public and private universities. Thai higher institutions do not cover all the 8 AEC standard occpations, and may not maxmize the AEC opportunities.

The details of 8 AEC careers offering by Thai universities in Bachelor are as follows: Thai universities offer two programs for accounting career : accounting, accounting and finance. Two programs are offered for architecture career: architecture, interior architecture. Seventeen programs are offered for engineering career, which include automotive design and manufacturing, chemical, civil, computer, electrical, environmental, industrial, information and communication, mechanical, nano-engineering, naval architecture and marine, software and knowledge and telecommunications and electronics engineering areas. One nursing

science program is offered for nursing career. Twenty hospitality & tourism programs are offered for hospitality & tourism career, which include hotel, resort and restaurant management, hospitality and tourism industry, hospitality & tourism management, intercultural studies for tourism. One doctor of medicine programs is offered for doctor career. Neither is dentistry nor surveying programs offered by Thai universities.

In terms of 8 AEC career supporting programs, Thai universities only offer 17.31% programs at Bachelor level while they only offer 11.24% programs to support 8 AEC careers at Master level. Also, 86.49% and 76.19% international programs offered by public and private universities are only engineering and hospitality & tourism programs. At Bachelor level, Thai higher undergraduate international education curriculums only cover six AEC careers: accounting, architecture, doctor, engineering, hospitality & tourism, nursing, and focus only on hospitality & tourism and engineering and accounting. At Master level, the findings show that Thai higher institutions only cover six AEC careers: accounting, architecture, dentistry, engineering, hospitality & tourism, and nursing. Neither is Bachelor level nor Master level cover surveying program. The study clearly pointed that Thai higher institutions do not cover all the occupations. Mutual Recognition Agreements (MRAs) agreed on eight professions: engineering, nursing, physician, dental, architecture, surveying, accounting and hospitality & tourism. The agreements between the 10 ASEAN member countries mean licensed and recognized professionals in these fields can move to other ASEAN countries to practice, but they are still subject to pass that country's licensing test. Thai universities, especially the private universities should pay more attention to offering more AEC supporting programs for Master levels. According to the findings of this study, it is obvious that Thai higher institutions are not really prepared to forth coming AEC on 2015. As *The American Chamber of Commerce's ASEAN Economic Community Outlook* pointed that,

"Thailand is aware that in order to improve competitiveness, it has to improve its capability in human capital through improving availability and quality of education, and fostering improvements in productivity and innovation. To do this, there needs to be more partnering between the government (e.g. Ministries of Education, Industry and Labor) with industry/employers in a productive dialogue on how to improve Thailand's competitiveness and raise standards of living at the same time. We are all stakeholders in the success of the country." (August 5, 2011).

Thai higher institutions offer very few AEC standard occupation-supporting programs and may not maximize AEC opportunity to provide specialist workforce. The article "Education Key to AEC Success" from Bangkok Post (27 April, 2012) reported, "Without education reform, the country cannot maximize AEC opportunity, any AEC benefit will be concentrated in the hands of the privileged few who are already well-equipped for change." 2015 is the last year for ASEAN Tourism Strategic Plan (2011-2015). One of the plans is to cultivate tourism related personnel for the development of cooperation, service and infrastructure. Unfortunately, the strategy about the tourism has not been fully understood with supporting resources, resulting in hotels, restaurants and tourism talents not being ready to gain achievements. In fact, Thailand's shortcomings in both quantity and quality of labor force make it hard to achieve the present goal (ASEAN newspaper, 19 March, 2015). In order to face those challenges, Thailand came up with a new education strategy plan to prepare for the ASEAN integration in terms of English proficiency, curriculum development, and teaching with international quality standard.

From the findings we can see that Thailand is not ready for the AEC. At the seminar "Is Thailand Ready for the AEC?" Finance Minister Sommai Phasee and key private-sector voices warned that the Kingdom has a long way to go before it is ready for the full implementation of the ASEAN Economic Community at the end of 2015 (The Nation, December 12, 2014). A report from *Mathichon Newspaper* said that,
"Thai workforce lacks both quality and quantity to join the AEC market and it will have an impact on hotel business and tourism business. Thais may not be able to get more opportunities or benefits from AEC" (20 February, 2015, p10).

5. Conclusion

The findings of an overview picture of Thai international 8 AEC careers supporting programs can be a guideline for universities to offer new programs to be well prepare a for the coming AEC free market. According to the results from other studies in the literature and the finding of this study, Thailand higher institutions need to offer more ESP programs especially the medicine practice, dentistry, nursing, land surveying and architecture related programs. Thailand is not ready for the forth coming AEC and still needs time to enhance the comprehensive qualities of international higher education. Thus, this study indicates that in order to gain competitiveness towards the AEC, Thailand urgently needs to improve its higher education.

Limitation of the study: The study analyzes the current 335 Bachelor international degree programs and 436 Master international degree programs in Thai higher institutions. The rest of the universities offer programs in Thai and so they are not included in this study. The author who wrote this paper is a Chinese graduate student and may not know the situations and policies of Thailand.

Policy Implications for AEC: For policy implication, Thailand government should promote the leadership role of higher education institutions in Thailand related to the three pillars of the ASEAN Community building, especially in the ASEAN Socio- Cultural Community pillar and develop the infrastructure development in international quality standard to support Thai local education to be a hub among ASEAN countries. For the Thai higher education, Thai higher institutions need to reform curriculum in those English programs to suit the AEC market needs. Thais do not have much competitiveness in medicine, dentistry, nursing, accounting and architecture, because Thai high institutions offer few of these programs. With no support on those careers, Thais will lose lots of opportunities to succeed in this field. Thai higher institutions need to strengthen the programs that are offered already and to make them more effective to meet the AEC market needs.

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Journal of Education and Vocational Research (JEVR)
Vol. 6, No. 3, September 2015 (ISSN 2221-2590)

The Effectiveness of Summative Assessment in Work-Based Learning Practice

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Abstract: Summative assessment aims at providing measurement of student's understanding. It is argued that summative assessment is used for reporting and reviewing, besides providing an overall judgment of achievement. While summative assessment is a well defined process for learning that takes place in the classroom environment, its application within the Work-based Learning (WBL) practice environment is still being structured. This paper discusses the effectiveness of summative assessment in WBL practice from a mixed-method research study involving both quantitative and qualitative analysis. A survey questionnaire was designed for exploring the perceptions of mentors and students about summative assessment in WBL practice. The questionnaire was administered to the University of Mauritius students and mentors who supervised students for their WBL practice at the respective placement settings. Some students were also interviewed to capture their views and experiences about the application of summative assessment in WBL practice. Semi-structured interviews were also conducted with three experienced mentors who have assessed students on WBL practice. Findings reveal that most students had positive experiences about their summative assessments in WBL practice. They felt comfortable and confident to be assessed by their mentors in their placement settings and wished that the effort and time that they devoted to their learning be recognized and valued. Mentors also confirmed that summative assessment is a valid and reliable strategy in WBL practice, enabling them to better monitor and coach students to achieve the expected learning outcomes.

Keywords: *Practice, Judgment, Summative Assessment, Knowledge, Skills, Workplace*

1. Introduction

Summative assessment is used to determine what students know and do not know at a particular point of time. It is an accountability measure that is generally used as part of the grading process. The key is to think of summative assessment as a means to gauge, at a particular point in time, student learning relative to content standards. Summative assessment helps in evaluating aspects of the learning process and at the same time it helps in evaluating the effectiveness of programs allowing alignment of curriculum. However, summative assessment has often been criticized as it usually come far down in the learning process and does not provide opportunities for students to adjust their learning. The application of summative assessment in WBL practice is not a straight forward task. Indeed, Cameron-Jones & O'Hara (1994). Admitted that there are difficulties associated with the assessment of work experience. It needs to be evidence-based and requires commitment from both students and mentors. Students have to put up the necessary effort in acquiring the knowledge, skills and attitudes that the WBL practice sets out to provide. Mentors need to be patient and coach the students well so that learning may be assessed at the end of the training.

The learning environment in a practice setting is relatively different from that of a classroom, involving a number of factors which influence student's learning. It is characterized by contextual reasoning and involves manipulation of tools and mental activities rather than memory recall which renders the task of summative assessment very complex. WBL has been practiced decades ago with no formal assessment. But since the experience obtained through WBL practice is highly valued nowadays, many Universities are giving due consideration for assessing the learning that students experienced at the work place. However, the task is complex due to the fact that students acquire and experience learning differently at their own pace even if it is at similar practice setting or with the same mentor. This adds up to the complexity in defining a proper structure for assessing the students. Establishing summative assessment at practice settings as a formal process is seen to be very challenging. The factors that need to be present to measure the level of success and proficiency at the end of the learning practice need to be identified. The assessment procedures need to be backed up with 'solid' evidence (Coll et al., 2002). There is a need also to investigate how far and in what ways summative assessment is beneficial to students. Dalrymple et al. (2014) rightly said that with the increasing

prevalence of WBL programs in higher education, there is a demonstrable need to evolve new pedagogic models to support facilitators and participants in conceptualizing and developing practice.

2. Literature Review

It is important to understand how WBL practice differs from classroom learning before applying summative assessment. Traditionally the concept of learning has been associated with formal classroom education, whereas its use in the context of work is a relatively new phenomenon. Interest in WBL practice has been receiving more attention since the beginning of the 1990s, and currently research in this area is both wide-ranging and interdisciplinary. The reason for this expansion is the unprecedented change in employment sectors requiring graduates to be fit for purpose and practice at the time of graduating from universities. Hager (2004) emphasizes the need to develop WBL practice with measurable learning outcomes that produces tacit knowledge. One of the main differences between learning in the formal educational system and learning in practice is that the former is based on formal, intentionally planned educational activities, while the latter is mostly informal in nature (Eraut, 2004b; Marsick & Watkins, 1990). Informal workplace learning is unplanned and implicit, often collaborative and highly contextualized, and the learning outcomes unpredictable, whereas school learning is often formal, planned, largely explicit, focused on individual learning, and the outcomes are often predictable (Hager, 1998). Eames and Cates (2011) argue that exposing students to the workplace provides an easier transition from classroom learning to workplace learning. The ability to learn in real-life settings provides an opportunity for experiential learning (Kolb, 1984). Eraut (2004a) has identified six types of knowledge, which can arguably be developed during WBL practice. These include, situational knowledge (including learning how to read real-life situations), knowledge of people, knowledge of practice, conceptual knowledge, process knowledge (including the specific techniques employed by the placement student) and control knowledge (encompassing skills such as self-management, time management and problem-solving skills).

As Hardern (1995) stated, such knowledge is job specific and differs from the knowledge acquired at schools. Work placement provides a vehicle for the transformation of knowledge through its use in a real-life setting (Ashworth & Saxton, 1990). Nonetheless, assessment can make its way in WBL practice. Since students devote a majority of their time and effort to the acquisitions of knowledge and skills in the workplace and the achievement through WBL practice is highly valued, summative assessment in practice work settings needs to be given more importance. Many universities have developed distinct assessment criteria for WBL practice; have identified generic skills that students need to acquire in any practice settings and devised portfolio and e-portfolio for students for demonstrating evidence of learning outcomes achieved at their practice settings. Thus assessment processes have an impact on the learner's willingness, desire, and capacity to learn (Harlen & Deakin-Crick, 2002). A major concern of universities implementing summative assessment in WBL practice is the quality and validity of the student experience, an area that is not yet fully understood from an and ragogical perspective (Nixon et al., 2006). Moreland (2005) suggests that for a high-quality learning experience certain conditions need to be put in place. These include all stakeholders understanding and supporting the process; induction and briefing of all stakeholders prior to the experience (Greenbank, 2002; Foster & Stephenson, 1998; Brennan and Little, 1996); accreditation of the program for ensuring that the experience is taken seriously; formative and summative assessment used to support the process. Foster & Stephenson (1998) also emphasized the significance of effective learning networks, which include the principal actors of the student, the employer and the tutor. The quality of student experience and effectiveness of the learning space that emerges from WBL practice may be significantly impacted by the level of support offered by the employer (Brennan and Little, 1996). Hodges et al. (2014) assert on their side that student performance is influenced not only by their own efforts, skills and abilities, but also by the quality of mentoring and support they receive. The issue of mentoring variability needs to be acknowledged and addressed when student performance outcomes are part of the summative assessment. Mehrens & Lehmann (2011) rightly said that summative assessment is generally criterion-referenced, where the student's performance or competence is assessed against some specified behavioral domain, standard or criteria.

3. Methodology

A mixed-method research design guided the study. For gathering quantitative data, two questionnaires were developed; one was destined to mentors for obtaining information about summative assessment of their students that were under their mentorship. The second set was designed for undergraduate students of four Faculties who undertook WBL practice. The mentor's questionnaire contained three separate sections of Likert scaled questions (rating scale 1-5, 1: strongly disagree – 5: strongly agree.). The first section included questions about the criteria in making the summative assessment, the second section included questions relating to the validity and reliability of the assessment and the third section had questions relating to the impact of applying summative assessment in the work place. The student's questionnaire contained three separate sections with section one based on the importance of having summative assessment in WBL practice and the section two included questions about measuring the impact of summative assessment and the last section had open-ended questions allowing students to provide views about their competence in WBL practice. The mentor's questionnaire was administered to 75 mentors and the students' one was administered to 120 undergraduate students with 30 students from each of the four Faculties of (1) Faculty of Law & Management (FLM), (2) Faculty of Science (FOS) and (3) Faculty of Social Studies & Humanities (FSSH) and (4) Faculty of Engineering (FOE). For qualitative data to gain a better insight into summative evaluations in WBL practice, a semi-structured interview schedules were prepared for gathering data from the participants. The first one involved four students, one from each of the four faculties and the second one involved three mentors.

4. Data Analysis and Discussion

Reality as experienced by the students and the mentors has an important additional value. It is therefore crucial to take into account their perceptions after both groups have gone through the process. Table 1 below indicates the results compiled after data collection. The quantitative data were analyzed using SPSS version 21. Table I shows the result generated from the student's questionnaire as regards to the importance of having summative assessment in the practice. Only 1.1% of the students found that summative assessment has no importance in WBL practice, while 77% classified it as important and vital with more than 70% from each faculty.

Table 1: Importance of summative assessment in WBL practice (students)

Question	Scale	FOE	FLM	FOS	FSSH	Total
How far do you rate the importance of summative assessment in WBL practice?	Not Important	5.0%				1.1%
	A little important		4.5%	20.0%	4.0%	6.9%
	Neutral	25.0%	13.6%	5.0%	16.0%	14.9%
	Important	65.0%	68.2%	65.0%	56.0%	63.2%
	Vital	5.0%	13.6%	10.0%	24.0%	13.8%

As regards to the mentors, only 5.3% find that summative assessment is not important while 89.5% rated it as important and vital as illustrated in Table 2. It is to be noted also that experienced mentors value more summative assessment as compared to young mentors.

Table 2: Importance of summative assessment in WBL practice (mentors)

Question	Scale	0-1yr	above 1-2yrs	above 2-4yrs	above 4-5yrs	more than 5yrs	Total
How far do you rate the importance of summative assessment in WBL practice?	Not Important		33.3%				5.3%
	A little important					20.0%	5.3%
	Important	33.3%	66.7%	66.7%	80.0%	60.0%	63.2%
	Vital	66.7%		33.3%	20.0%	20.0%	26.3%

The order of importance of the different criteria used for assessing students was rated by mentors. This was analyzed through factor analysis. The means and standard deviation of the different criteria under analysis is illustrated in Table 3.

Table 3: Means and Standard deviation of criteria behind summative assessment

Criteria The level of importance of	Mean	Std. Deviation	Criteria The level of importance of	Mean	Std. Deviation
learning outcomes evidences in portfolio	4.47	1.264	achievement of students before formative assessment	4.37	0.955
assessment guidelines prepared by academics	3.63	1.212	achievement of students after formative assessment	4.11	1.049
assessment forms prepared by University	4.26	1.240	attendance & punctuality of students	3.89	1.100
CD documentation manual	4.79	0.918	attitude of students during training	3.79	1.316
mentor's preparatory program	4.05	1.311	behavior of students during training	3.74	1.284
advices provided to students	3.89	1.487	motivating students during training	4.21	1.228

Applying factor analysis indicates that that all questions related to the criteria for having summative assessment correlate fairly well. Factor extraction reveals that there are four factors that are found to have Eigen values > 1 which account for the total variance as illustrated under Table 4. Rotation is considered to optimize the factor structure thereby equalizing the importance of the four factors. Based on the rotated component matrix which is obtained after 5 iterations as illustrated in Table 5, the content of questions that load on the 1st factor is labeled as 'effort of students during WBL practice', the 2nd factor is classified as 'documentation for summative assessment', the 3rd factor is labeled as 'seriousness of students on WBL practice', while the last factor is classified as 'demonstration of achievement'. Factor analysis allows us to reach the conclusion that for having summative assessment in WBL practice we need to take into account: (1) materials supplied to facilitate the assessment;(2) effort made by students; (3) seriousness of students while on training and (4) achievement demonstrated by learners.

Table 4: Total Variance Explained

Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
3.197	26.644	26.644	3.197	26.644	26.644	2.768	23.067	23.067
2.594	21.615	48.260	2.594	21.615	48.260	2.750	22.919	45.985
1.789	14.905	63.165	1.789	14.905	63.165	2.039	16.993	62.978
1.633	13.605	76.770	1.633	13.605	76.770	1.655	13.792	76.770
.952	7.935	84.705						
.694	5.780	90.486						
.565	4.712	95.198						
.248	2.068	97.265						
.152	1.268	98.533						
.099	.822	99.355						
.061	.507	99.862						

Table 4: Total Variance Explained

Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
3.197	26.644	26.644	3.197	26.644	26.644	2.768	23.067	23.067
2.594	21.615	48.260	2.594	21.615	48.260	2.750	22.919	45.985
1.789	14.905	63.165	1.789	14.905	63.165	2.039	16.993	62.978
1.633	13.605	76.770	1.633	13.605	76.770	1.655	13.792	76.770
.952	7.935	84.705						
.694	5.780	90.486						
.565	4.712	95.198						
.248	2.068	97.265						
.152	1.268	98.533						
.099	.822	99.355						
.061	.507	99.862						
.017	.138	100.000						

Table 5: Rotated Component Matrix[a]

	Component			
The level of importance of:	1	2	3	4
learning outcomes evidences in portfolio				.721
assessment guidelines prepared by academics		.847		
assessment forms prepared by University		.826		
CD documentation manual		.815		
mentor's preparatory program		.903		
advices provided to students				.726
achievement of students before formative assessment	.854			
achievement of students after formative assessment	.943			
attendance & punctuality of students		.430	.622	
attitude of students during training	.632			.536
behavior of students during training	.767	.447		
motivating students during training			.860	

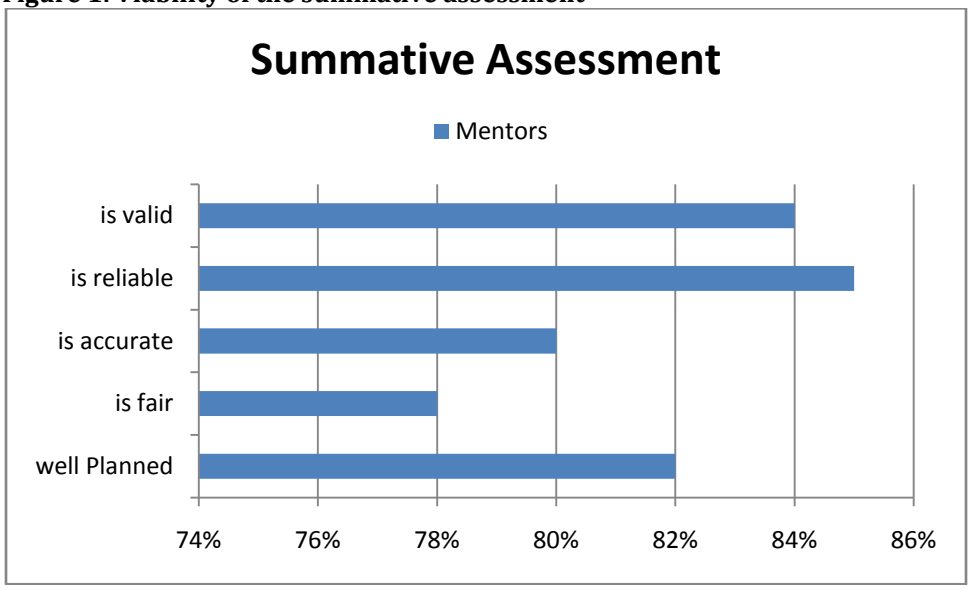
Investigation was also carried out on the contribution brought forward by the implementation of summative assessment in WBL practice. Hypotheses were tested as to whether there are differences among the students from the four Faculties and the mentors on the impact summative assessment made in practice. Shapiro-Wilk test was performed and the data is found not to be normal. The independent variables were therefore tested by using Kruskal Wallis which is a non-parametric test.

Table 6: Results Analysis - students and mentors

Summative Assessment	Groups	Mean	SD	Median	Kruskal Wallis Test
Makes students do the necessary **effort** for learning at the workplace.	FOE	3.67	0.970	4	Asymp Sig = 0.739
	FLM	4.00	0.725	4	
	FOS	3.80	0.894	4	
	FSSH	3.92	0.954	4	
	Mentors	3.85	0.875	4	
Allows students to develop **seriousness** in skills acquisition.	FOE	4.06	0.938	4	Asymp Sig = 0.313
	FLM	4.25	0.786	4	
	FOS	3.75	0.910	4	
	FSSH	4.12	0.781	4	
	Mentors	4.01	0.896	4	
Enables students to **behave** properly during the placement.	FOE	3.78	0.943	4	Asymp Sig = 0.130
	FLM	4.25	0.786	4	
	FOS	3.65	0.988	4	
	FSSH	4.12	0.600	4	
	Mentors	3.94	0.840	4	
Creates **competition** among students for obtaining better marks.	FOE	3.44	1.040	4	Asymp Sig = 0.430
	FLM	3.00	0.918	3	
	FOS	3.20	1.056	3	
	FSSH	3.12	1.394	3	
	Mentors	3.14	1.139	4	
Prevents students from **absenting** themselves for the placement.	FOE	3.72	1.227	4	Asymp Sig = 0.995
	FLM	3.80	1.105	4	
	FOS	3.80	1.105	4	
	FSSH	3.76	1.128	4	
	Mentors	3.75	1.102	4	
makes students show **respect** to mentors	FOE	3.89	1.023	4	Asymp Sig = 0.996
	FLM	3.90	1.119	4	
	FOS	3.80	1.240	4	
	FSSH	3.80	1.225	4	
	Mentors	3.82	1.126	4	

The results depicted in Table 6 shows that the mean and median values among the five groups for each of the items relating to the impact of summative assessment in WBL practice were found to be very similar. The results revealed that there is consistency among the groups and the mentors concerning the factors identified above ($p > 0.05$ at 5% significance level). The evidence suggests that FLM, FOS, FOE, FSSH students and Mentors shared similar views and agreed with the positive impact of summative assessment on WBL practice. Furthermore, investigation was also carried out on the viability of the assessment. Figure 1 shows the views obtained from the mentors which illustrate that 85% mentors agree that summative assessment in the practice can be performed with consistency. 84% found that the assessment measures what it is supposed to, while 80% agrees that the competencies can be assessed with precision. 78% of the mentors rated the assessment as being fair i.e. it measures what students have learned.

Figure 1: Viability of the summative assessment



The following hypothesis was tested:

H_o: There is no difference in the viability of the summative assessment as perceived by mentors from public sector to those of the private sector
H_1: There is a difference in the viability of the summative assessment as perceived by mentors from public sector to those of the private sector

As the data was found not to be normally distributed, Mann-Whitney test was used to test the hypothesis and an index named SAI was created to measure the summative indicators.
$H_{o:}\ \mu_{public} = \mu_{private}$
$H_{1:}\ \mu_{public} \neq \mu_{private}$

Where μ_{public} = median value of SAI for the public sector mentors and $\mu_{private}$ = median value of SAI for mentors from the private sector

Table 7 shows that the mean ranks for the private sector is higher than that of the public sector. Higher mean ranks are associated with more positive opinions towards the viability of summative assessment in the practice.

Table 7: Ranks of SAI by sector

	Work setting	N	Mean Rank	Sum of Ranks
SAI	Public Org	29	28.03	813.00
	Private Org	34	35.38	1203.00
	Total	63		

Result of the Mann Whitney test reveals Z = -1.610 with p = 0.107 > 5%. This indicates that there is no significant difference in the opinion between public sector mentors and private sector ones at 5% significance level. This confirmed that mentors applied summative assessment with much rigour irrespective of the type of work setting.

In addition, the interviews carried out for qualitative analysis allowed the respondents to share their opinions about the application of summative assessments in WBL practice. Mentors were also questioned about the

time they took to perform summative assessment as well as on the ways they conducted the assessment. The validity and reliability of the assessment made were also discussed with them. Their views about the existence of summative assessment were also gathered. Students on the other side were questioned as to whether summative assessment influenced their learning at practice settings. Their views about the impact of assessment in WBL practice were also gathered. All the four students confirmed that summative assessment made them do the necessary effort for learning at the workplace. They highlighted that the assessment activity had a positive impact on their learning, facilitating the acquisition of knowledge and skills. 75% of the students stated that without summative assessment they would not have taken the placement seriously and would not have been that active at the practice setting. All four students considered the summative marks obtained from WBL practice as the reward for the effort they had put forward during the training. The student from FOE emphasized that "the summative assessment validates the skills I developed during WBL practice and create more confidence in me for performing such tasks repeatedly and with dexterity". Interview sessions with the mentors confirmed that students were more serious during the training due to the fact they knew they would be assessed at the end of the training. All the mentors highlighted that the tools and materials provided prior to assessing students in the practice greatly helped them in making a concise summative assessment for each student. They stressed on the importance of the assessment criteria set by the University. They did not foresee any problem as regards to the reliability and validity of the assessment and they all agreed that same standard could be maintained despite students might be at different work settings. However, the mentors confessed that it was quite time consuming to perform the assessment especially when they have over five students under their mentorship.

5. Conclusion

This study demonstrates the effectiveness of summative assessment in WBL practice. The findings have shown that summative assessment facilitates the acquisition of knowledge and skills in WBL practice. It helps in engaging both students and mentors in the learning process. In contrast, using grades as rewards for classroom learning is seen to decrease students' motivation and may even harm further learning. However, this is found not to be the case for WBL practice. Students make the necessary effort and develop seriousness in learning at practice settings, while mentors are able to monitor more closely their students. It has been found that tools and necessary documentation must be provided to ensure reliability in the assessment made. Summative assessment in practice should be given similar consideration as is presently the case in the classroom environment. WBL practice with assessment adds more value to the knowledge obtained. Based on the outcome of this study, it can be deduced that summative assessment can definitely make its way in WBL practice through the establishment of a well-defined structure.

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Journal of Education and Vocational Research (JEVR)
Vol. 6, No. 3, September 2015 (ISSN 2221-2590)

Blended Learning Outcomes in Academic and Professional Writing

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Abstract: Much has been written about the potential of online learning. Advantages discussed in the literature include practical considerations such as career preparation, convenience, and savings in time and money, the ethical benefit of open access and the environmental one of reduced paper and printing; learning benefits such as improved creativity and support for a more learner centered environment, learner autonomy, and the establishment of standards. This study documents the learning outcomes of 28 undergraduate students studying Professional and Academic Writing in a blended learning environment. Outcomes reflect gains in academic English writing skills, with specific reference to the use of the process approach to writing. Evidence from students'e-portfolios provides a rich source of learners' engagement in the planning, drafting, revising and presenting steps of paper completion. Further evidence shows how students develop information literacy through the use of the online learning materials. The instructional design features of particular tasks along with the e-portfolio used for formative evaluation are also analyzed for their contributions to the learning outcomes.

Keywords: *Blended learning, e-Portfolio, Community of Inquiry, instructional design*

1. Introduction

As online courses become established in corporate training and in higher education, and move into the K-12 systems of North America and Europe, educators have begun to investigate their effectiveness (Shea, Gozza-Cohen, Uzuner, Mehta, Valtcheva, Hayes & Vickers, 2011; Graham, 2013; Partridge, Ponting & McCay, 2011). Course instructors and designers need data on how students are using online material, the learning outcomes gained from the material, and both students' and teachers' levels of satisfaction with the online experience. One of the main concerns in students' use of online courses is self-direction. Allen and Seaman (2013) noted that online learners' need for self-discipline in their pursuit of studies by distance was perceived as even more of a threat by educators in 2012 than it was in 2007. In response to this perception, teachers have tried innovative learning arrangements to experiment with variations on a purely online or distance model. One of those variations is blended learning, a model that has been discussed since the turn of the 21st century. Blended learning refers to the use of online learning resources in the classroom. The blending can vary in the amount of input source, as in, for example, 40% teacher-led instruction and 60% online tasks. Current practice shows that blended learning is the use of online learning material in a classroom by students under the guidance of a teacher (Peterson & McGuire, 2014; Picciano, Dziuban and Graham, 2014).

The blending of the online materials delivery with a teacher in some proportion of face-to-face instruction is relevant to instructional designers, educational researchers, program administrators and students who embrace the technology (Graham, 2013; Garrison and Vaughan, 2008; Graham and Dziuban, 2008).The concept of blended learning is an easily foreseen consequence of instruction based on online course delivery and outcomes, while its strength as a learning paradigm lies in the ways it impacts how learning happens and how it maximizes effectiveness (Swan, Garrison & Richardson, 2009). Much has been written about the benefits in learning outcomes, knowledge acquisition, and information literacy that accrue from the use of blended learning (Means et al., 2010; Shea & Bidjerano, 2011; Bliuc, Goodyear & Ellis, 2007; Twigg, 2004). Blended learning has been a growing practice in tertiary education since the early 2000's when educators saw that the physical presence of a teacher in classrooms, face to face with the students, could systematically and effectively augment online courses. A large number of studies conducted in the first decade of the 21st century found evidence of how students used online materials, what their levels of satisfaction were and how effectively they learned the content. Research into this paradigm has necessitated the development of new frameworks for the systematic investigation of such courses. The Community of Inquiry (CoI), developed by Garrison, Anderson and Archer in 2000, has been widely accepted as one such framework. The CoI model posits that learning takes place with the interaction in the learning environment of three presences: teaching presence, social presence and cognitive presence. The analysis of how these presences operate in specific

learning situations and with certain types of instructional designs is ongoing.

The blended learning model includes face-to-face student-teacher interaction for guidance, monitoring, and feedback. It addresses one of the most important concerns of all teachers: ensuring that students are in fact maximizing their individual potential in the classroom. In traditional language classrooms this can be problematic when administrative requirements override educational best practice. Problems can occur, for example, when students are not properly evaluated and streamed, when class composition and sizes are dictated on financial, not pedagogical grounds, or when national or cultural norms of pass/fail standards affect student promotion through systems. Blending the online course materials with a teacher allows students to progress at their own rates independently, using the classroom interaction for collaborative work or to consult with the teacher for individual feedback. The CoI framework permits investigation into how courseware involves teaching, social or cognitive presence by identifying the parameters as learners use the course material. A self-evaluation form itemizing some of these parameters is a useful tool in having students reflects on their use of the learning materials, their ability to socialize in pursuit of learning objectives and their recognition of teacher input. Deep learning is believed to accrue from the interaction of these three presences. Further support for ways to compel deep learning derives from the recognition of best practice in tertiary education. The concept of best practice is grounded in the work of Chickering and Gamson in 1987 (Kuh et al., 2010; Thomas 2012), who argued that such practices:

- encourage student - faculty contact
- encourage cooperation among students
- encourage active learning
- give prompt feedback
- emphasize time on task
- communicate high expectations
- respect diverse talents and ways of learning

Incorporation of the above instructional principles into teaching practice is a familiar goal in educational quality assurance exercises worldwide. Coupled with the need for analyses of learning outcomes, learner satisfaction and faculty perceptions of using online courseware and blended learning, a robust basis for the investigation of a particular learning situation emerges. The present study seeks to clarify the use of blended learning in an undergraduate academic and professional writing course with direct reference to the teaching presence inherent in the courseware and the communication of high expectations, using action research. It seeks to answer the research questions:

- How does this course in Academic and Professional writing communicate high expectations?
- How do students respond to the high expectations?
- How does teaching presence in this course influence student outcomes?

2. Literature Review

A comprehensive definition offered by Bliuc, Goodyear and Ellis (2007) explains that blended learning is a form of instruction where students and teachers engage in both physical and remote interactions systematically in their use of online learning resources. Other familiar terms that combine online learning with classroom presence include the flipped classroom and hybrid learning, both used with some variance in meaning and acceptability. Blending a teacher with online course materials has resulted in instructors' investigations into how and what kinds of mediation optimize the learning potential (Graham, 2013; Garrison and Vaughn, 2008; Graham and Dziuban, 2008). Blended learning has been investigated in research at the secondary (Larson & Murray, 2008) and tertiary levels, in business (Beckem & Watkins, 2012) science (McDonald, Straker, Schlumpf & Plack, 2014) and humanities courses, with specific populations (Shea, 2007) and longitudinally across tertiary institutions (Shea, Fredericksen & Pickett, 2001). Many of the studies focus on student satisfaction (Dziuban, Moskal, Brophy-Ellison & Shea, 2007; Bauk, 2015; Carter, 2013), while others investigate particular types of presence and their effects on learning outcomes (Wang & Chen, 2008; Ice, Curtis, Phillips & Wells, 2007; Garrison, 2007). Numerous articles report that the design of courseware,

tasks and activities can affect active learning (Bower, Dalgarno, Kennedy, Lee & Kenney, 2015; Beckem & Watkins, 2012; McGee & Reis, 2012).

Action Research: Action research has been a useful paradigm for a wide variety of research investigations. In 1995, Masters wrote a history of action research giving some of the foundational tenets of the practice. Kemmis and McTaggert compiled the Action Research Planner in 1982, providing a set of principles for use by teachers seeking greater insight into classroom events and their own practices. As Lingam (2012) points out, undertaking action research permits practitioners to review their own methods and techniques in light of their approach, training or ideology, and as a way to change how they use their classrooms, and how they comprehend their classroom activity. Zuber-Skerrit (2001) presented a paper wherein he claimed that action research and action learning was confirmed activities in social science, useable in the research and development areas of business and the public sector, as they could provide longer-lasting results and more appropriate insights than the usual forms of investigation and education. Action research as a practice is associated with Kurt Lew in, the American psychologist who worked in the psycho-social domain in the 1940's, theorizing about group dynamics, management and productivity. Waters-Adams (2006) argues that the use of action research allows for observation and reflection on the effects of modifications in teaching practice. In his view, action research requires implementation of an action, which can be the catalyst to further modification, or could shed more light on the complexity of the learning event. Across the field of applied linguistics and pedagogy, action research has been used to build awareness and/or recognition of classroom practice, with the subsequent use of data and/or observation to form the basis for making change (Fareh & Saeed, 2011; Atay, 2006)

Community of Inquiry: Garrison and Archer have been writing about their research focusing on the use of online learning and its effects since 2001. They promoted the idea of the community of inquiry as a set of parameters to explain how learning takes place. Their contention was that online learning offered potential for participants in the learning process to take part both affectively and interactively, enveloped in a community of inquiry (Rourke, Anderson, Garrison and Archer, 2001). They posited a community of inquiry as the impetus for the instructor and learners to work communally with computer-mediated and instructional inputs to build knowledge through constructivism (Garrison, Anderson & Archer, 2000; Rourke et al., 2001; Shea & Bidjerano, 2011). Its application to blended learning and the classroom interactions necessary for learning to take place comprise a key point of interest to the online course developer. With reference to the presumed loss of interpersonal interaction in using online learning materials, researchers looked carefully at how a social presence can arise. Relying on an analysis of the various definitions, Kim (2011, as cited in Kim, Kwon & Cho, 2011) viewed social presence as a construct that reflects group dynamics – taking into account the way group members relate to one another, along with the bonds and emerging alliances that result from their group membership. In support of the blended learning approach, Bower and colleagues note that the formation of learning groups or study teams may not inherently result in stronger social bonds, and so teacher demands for social cohesion, or instructional methods for forming united teams and group projects needing collaboration need to be activated (Bower et al., 2015).

According to Akyol, Garrison and Ozden (2009, p. 1834), the framework provides order and guidance into the complexities and dynamics of online and blended learning environments. The philosophical premise of the framework is a collaborative constructivist approach to teaching and learning. The framework implies that a worthwhile educational experience is embedded within a community of inquiry that is composed of teachers and students - the key participants in the educational process. The CoI framework is conceived as the interaction of three presences: social presence, cognitive presence and teaching presence. Under this framework, as Akyol et al. (2009) claim, the way the three presences work together may have an effect on the depth of learning (Akyol, Garrison and Ozden, 2009). The present study looks at the outcomes which appear to reflect deep learning, encouraged by high expectations, promoted by a set of learning tasks which require cognitive engagement and monitored with teacher intervention to provide feedback and encouragement when needed.

3. Methodology

This project adopted a collective case study methodology, using a standard case study data collection and analysis approach as outlined by Yin (2014). Several sources of data were collected from each case, including: (a) a pre-observation teacher-documented overview of the case as it had been implemented in the past, (b) pre-observation teacher notes in order to determine the rationale for the designs as well as teachers' insights into the blended synchronous learning approach, (c) researcher observations of the lessons, (d) post-observation student survey responses, (e) post-observation teacher interviews (Data collection is still in process). Teaching presence has been defined as "the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes" (Anderson, Rourke, Garrison & Archer, 2001, p. 5). For the purposes of this paper, personally meaningful and educationally worthwhile learning outcomes are reflected in:

- high expectations as evidenced in workload/effort and quality of submissions
- student perceptions of peer and teacher interactions
- student perceptions of interaction with course content
- student perceptions of interaction with delivery system
- evidence of the 'flipped' classroom

The research sample consisted of 28 undergraduate students at a small international university in Thailand. The students were studying in the fields of Information Technology (1), Business Administration (14), and Management Technology (13). Twenty-seven were in their third year of studies and one was in her second year. The sample included eleven Thai nationals, eight Myanmar nationals, six Bhutanese nationals, two Nepalese nationals, and one Chinese national. Data was collected and analyzed from the students' online portfolios and self-evaluation forms, along with the final grades earned by these students for academic and professional written reports and attendance/participation. The self-evaluation forms were provided to students at two points during the course - at the mid-semester break and after the course were completed. The data was collected and collated in an Excel spreadsheet and analyzed using the Excel CORREL function. The course teaching Academic and Professional Writing is named Mastering Academic English (MAE). It employs a sophisticated pedagogical and instructional design. Language skills are integrated across tasks, with increasing linguistic and cognitive demands. It is content-based in that it uses contextually relevant, real world tasks in the classroom environment. It features a flexible blended learning format that encourages learner independence. The asynchronous approach to content delivery is ideally suited to the implementation of the 'flipped' classroom learning environment. MAE is a 45-hour course delivered over 16 weeks. The first half of the course focuses on academic writing and the second half focuses on professional writing. There are no formal exams. Students are evaluated formatively through submissions to their online portfolio as follows:

Table 1: Course Assessment

Activity	Assessment Method	Assessment	
		Marks	**Percentage**
Class Attendance	Attendance and Participation records	16	10
Portfolio	Labels, organization, maintenance		
Notes	Grades for Quality of notes	15	30
Peer Review	Grades for attention to peer drafts	15	
Vocabulary	Grades for complete vocabulary lists	15	
Academic Writing + Portfolio	Drafts & pre-set criteria	100	30
Professional Writing + Portfolio	Curriculum Vitae	20	
	Statement of Purpose	20	30
	Letter of Intent	10	
	Business report + Oral Presentation	50	

MAE applied a blended learning model of content delivery. The delivery platform uses HTML, PHP, Java script and a Mysql database. The course is accessible online to any student with a computer or mobile device and the appropriate login credentials in an asynchronous delivery mode. Students are encouraged to 'flip' the classroom in that they come to class already having read, taken notes and built their vocabulary from the online readings and lectures. Students are ready then to develop and extend their knowledge through discussion, seminars, paper drafting and peer reviews. Teaching faculty met the students face-to-face (teacher present in the classroom) on alternate weeks. Online classes with teacher interaction through Skype (with students present in the classroom) were also held on the other weeks. Weekly course content was provided online and consisted of Objectives, Seminar, Lecture, Reading, Writing and Vocabulary. Students could access the material at anytime, anywhere, as long as they had an Internet connection. The faculty teaching the course was the authors of this study. They are also the developers of the blended learning platform used in this course. The particular course is one of a suite of five core English language courses required by the undergraduate curriculum. The MAE course in this study has been run as a credit-bearing course six times over the past two years. It was assumed that communication of high expectations should be reflected in the course demand of a significant workload. Response to the high expectations was indicated by the effort to meet the demand by the subjects. Results can be quantified in terms of student submissions to their portfolios. Quality of student submissions is another avenue of investigation.

4. Results

Table 2: Total Student Submissions

	Notes	Vocab Logs	Academic Drafts	Professional drafts	Reviews/ Evaluations	Total
Maximum	29.0	14	14	13	7	68.0
Minimum	9.0	0	4	1	1	29.0
Average	20.8	7.4	8.2	6.6	3.1	45.6

N=28

Outcomes related to how much students are capable of producing are reflected in the number of assignments, notes, drafts, and reports students submitted to their portfolios. On average, students submitted 45.6 pieces of data to their portfolios (Table 2). This included 20.8 sets of notes on lectures and readings, 7.4 vocabulary logs, 8.2 academic drafts and 6.6 professional writing drafts. This is consistent with best practice goals, which hold that students should be held to high standards.

Table 3: Correlations of Submissions and Scores in Course

Submissions	r	p	Significance
Total	26	0.656254655	<.05
Notes	26	0.557416669	<.05
Vocabulary	26	0.201808042	NS*
Academic Drafts	26	0.27913287	NS*
Professional Drafts	26	0.562051708	<.05
Reviews	26	0.520078504	<.05

[1]N=28

The results (Table 3) show that students' completion and submission of work to their portfolios correlates significantly ($p<.05$) with their grades in this course. This was true with the total submissions, notes,

professional drafts and reviews, but not vocabulary and not academic drafts. To present the subjects' impressions of those outcomes, responses to the self-evaluation forms are reported in Table 4. Answers were given using a five-point scale, where the higher end of the scale corresponds to greater agreement and the lower end of the scale corresponds to less agreement. Subject impressions of their personal productivity were also very positive. In the first seven weeks, 67.9 percent reported that they came to class prepared. Seventy-one point four percent reported completing their vocabulary log, 89.3 percent reported they completed their readings, and 85.7 said they completed their assignments. Eighty-two point one percent felt that they took part in the class. Seventy-five percent believed that they took effective reading notes. Seventy-one point four percent reported that they took effective lecture notes.

Table 4: Subject Impressions of Productivity at Midterm

Rank	5	4	3	2	1	Total
I	%	%	%	%	%	%
Came prepared	28.6	39.3	21.4	3.6	7.1	100
Completed vocabulary	35.7	35.7	21.4	7.1	0.0	100
Completed readings	39.3	50.0	7.1	3.6	0.0	100
Completed assignments	46.4	39.3	14.3	0.0	0.0	100
Took part in class	35.7	46.4	10.7	7.1	0.0	100
Took effective reading notes	35.7	39.3	14.3	10.7	0.0	100
Took effective lecture notes	32.1	39.3	17.9	10.7	0.0	100

N=28

Table 5: Subject Impressions of Workload at Midterm

Rank	5	4	3	2	1	Total
This course was	%	%	%	%	%	%
Challenging	57.1	28.5	10.7	0	3.5	100
Hard work	57.1	25	17.8	0	0	100
Helpful	60.7	21.4	14.2	3.5	0	100
Interesting	42.8	32.1	21.4	3.5	0	100
Valuable	57.1	28.5	14.2	0	0	100
Useful to other courses	57.1	28.5	14.2	0	0	100

N=28

Subject impressions of the course and the workload were very positive. In the first seven weeks, 85.6 percent reported that the course was challenging and 82.1 percent felt that it was hard work. At the same time, 82.1 percent felt that it was helpful, 74.9 believed it was interesting while 85.6 percent felt that it was both valuable and useful in other courses at the university.

Table 6: Subject Impressions of outcomes by the Midterm

Things I learned to do:	Number of comments
Improve vocabulary	10
Write an academic paper	9
Use outside sources	7
Write a thesis statement	6
Format (Word)	6
Reference	5
Draft separate versions	4
Choose topic	4
Write introduction	4
Outline	3
Set context	3
Time management	3
Responsibility for own learning	2
Take notes	2
Work with team members	2
Follow instructions	2
Argue + proof	2
Plan	2
Read interesting articles for paper	1
Support thesis	1
Do homework on time and precisely	1
Paraphrase	1
Use a website for help	1
Avoid plagiarism	1

N=28

In comments written in prose, students made 82 individual statements of what they had learned in the course. These comments ranged from improved vocabulary to time management to avoiding plagiarism.

Table 7: Subject Impressions of What They Need to Do More of

I need to	Number of comments
Learn vocabulary	9
Read and research more	9
Manage time	8
Come prepared	4
Pay attention in class	3
Work hard	3
Learn sentence structure	3
Take more/improve notes	3
Use website more	2
Stop being lazy	2
Discuss with group	1
Revise	1
Improve skills	1
Learn Microsoft Word	1
Become independent	1
Seek help outside class	1
Listen to teacher	1

N=28

In comments written in prose, students made 52 individual statements of what they need to do to learn more in the coming weeks. These comments ranged from learn more vocabulary, to stop being lazy, to listen to the teacher.

5. Discussion and Conclusion

This study shows that students are capable of handling a substantial workload in a blended learning language course. They submitted numerous sets of notes, vocabulary logs, professional and academic writing drafts and peer and self-evaluations. It is believed that they completed this work with the expectation that they would receive teacher feedback, which would improve their performance and result in a higher grade. It is interesting to note that they were this productive even though the course was not evaluated through formal midterm or final examinations. Only one student submitted work for assessment well after the logical due date. That work was submitted solely to meet portfolio grading expectations, not for personal improvement. It would seem that the subjects were productive through a combination of reminding and deadline setting by the teacher, and intrinsic and extrinsic motivation by the student. This supports the idea that 1) deeper and more meaningful involvement with the learning materials would in fact yield better scores, 2) the task designs communicate a need for analysis and thoughtful reflection, and 3) the teacher is needed in the classroom to cajole, encourage and insist on performance. Through teaching presence, both in terms of task

design and content demand, subjects demonstrated that their use of the course promoted deeper learning, as they were able to produce more relevant and higher quality writing as the semester went on. This was particularly true in the final professional report, the culmination of a four-week team project, where teams produced sophisticated and well-researched reports in response to a difficult challenge. The other aspect of teaching presence -- encouragement, monitoring and feedback –showed a degree of reduced need over the length of the course, in that subjects required less and less reminding and persuasion by the teacher as they became more independent in their use of the material.

Analysis of the actual submission for quality and depth of understanding is ongoing, but the initial impression of a strong cognitive presence is very well supported. Subjects submitted unique sets of notes and drafts, which indicates they are not copying from their friends. Over time, their notes showed a heightened understanding of the concepts and the issues presented in both the readings and the lectures. Notable is the fact that much of the content of these readings and lectures focus on the meta-language of writing and learning, reflecting and revision. This design is purposeful teaching presence, in that the instructional content provides input that clarifies what they need to use to improve their writing. Drafts of subjects' papers exhibited many of the issues inherent in undergraduate writing - lack of cohesion, inadequate proofreading for error in content and logic, and plagiarism. The teacher's feedback on these errors and how to correct them seemed to be instrumental in making these writers more responsible, more ambitious and more evaluative of their own efforts. Another element of instructional design contributed to strong outcomes. This was the format of the course, where the first half was devoted to the planning, drafting, revising and presentation of an academic paper based on the argument of a thesis of each student's choice. This is an inherently difficult task, and required a significant amount of feedback and revision for success. The second half was professional writing, an intrinsically less demanding and more concrete form of writing, which subjects saw as immediately useful – as many were applying for internships in the coming semester -- and thus, more intrinsically motivating.

The subject impressions of their productivity indicate that the flipped classroom model of teaching and learning was implemented in practice. They reported that they came to class prepared, that they had taken effective notes from lectures and readings, that they had completed their assignments and, most importantly, that they took part in class. The classroom activities, seminars, group-work and peer review were designed to allow students to extend what they had learned from the course materials before the scheduled class in the actual class. That is an important indication of a teaching presence. The subject responses to the course expectations were also very encouraging. They reported that the course was challenging and hard work. Yet they did not complain about the challenge. Instead they reported that the course was interesting, valuable and useful. Their understanding of the challenge is then reflected in their intentions for the rest of the semester. Clear evidence of their own improvement was not only visible to the teachers, but also to themselves, as they began to recognise the value of the e-portfolio as a record of their development. This speaks to a teaching presence that encourages self-direction, discipline and maximizing individual potential. It is particularly interesting to note that while vocabulary development was not correlated to grades in this particular course, it was one of the items that the largest number of subjects indicated that they had done. Vocabulary was also reported by the largest number of students as what they knew they needed to learn in the coming weeks. This again reflects a teaching presence that encourages self-direction, discipline and developing individual potential.

Limitations: The limitations inherent in this study are several, and may have affected the outcomes or the way the outcomes may be interpreted. The authors are themselves the course material writers, teachers and action researchers. This can impact the likelihood of success of a given methodology or set of materials, as the use of a course by its creators involves enthusiasm and engagement that may not occur with a third party teacher. Further, the students themselves were variable in their use of the materials and the online aspect of the lessons, which was evident in the way they did not seem to use the website as efficiently as they should have to support their work. Many of them wanted to rely solely on the teachers' feedback for correction and improvement. Students also may have done as much or similar amounts of work had the materials not been presented online, though the course developers believe that an online presence is more attractive to millennials, and will continue to be regarded as the modern way to learn. As this course has no formal exams, the grades are somewhat subjective, based on drafts, final papers, and collected notes. However, most

writing courses are intrinsically subjectively graded, unless instructor's use blind double grading, which is not often possible with large classes. Subsequent investigation into the efficacy of the course and its outcomes could be compared to the course carried out with summative assessment.

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