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Scope of CATALYST

As an interdisciplinary journal, CATALYST brings together articles in several areas of the humanities and social sciences such as religion, education, arts and humanities, and business, as well as social science research in other disciplines.

Objectives of CATALYST

1. To facilitate scholarly activity among the faculty of AIU
2. To engender scholarly exchanges with other universities within Thailand and with visiting lecturers, pastors and teachers from other parts of the world
3. To encompass scholarly as well as professional articles, seminar/forum papers, research papers and book reviews

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2. Manuscripts should adhere to the Catalyst Publishing Guidelines; failure to comply with the guidelines may result in the rejection of a submission.
3. Manuscripts should be submitted through the online submission system found in “submission request”
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Editorial

Daron Benjamin Loo

The publication of the second issue of *Catalyst 2014* would not be possible without the immense contribution of the editorial and review board. Furthermore, the decision to publish twice annually has invigorated the research atmosphere at Asia-Pacific International University.

Our current issue takes a special interest in human development, which parallels the focus of *Catalyst* in the field of humanities and social sciences. We have original research studies conducted in aspects of education, such as language learning and teaching, pre-service teacher anxiety, intercultural education, and teaching approaches for the sciences and health sciences, as well as studies about human populations in the workplace and within a community.

We have other exciting ventures happening at *Catalyst* such as improving our webpage to facilitate submissions of research work, and working on getting *Catalyst* indexed. These, we hope, will encourage more circulation and submissions from external contributors. Nonetheless, we know that God is with us and will certainly direct us according to His plan.
Attitudes of Nursing and Business Students of Asia-Pacific International University Towards English Language Learning

Nakhon Kitjaroonchai

Abstract

This study sought to investigate the attitudes towards English language learning of nursing and business students at Asia-Pacific International University. It looked into difficult language learning skills as perceived by the students and examined the significant correlation between academic achievement (GPA) and attitudinal level. The subjects were 275 students comprising 214 students from the Faculty of Nursing and 61 students from the Faculty of Business Administration who enrolled in general English courses. The research instrument used in this study was a modified 20-item attitude survey adapted from Gardner’s (1985) Attitude/Motivation Test Battery (AMTB). The data was analysed using SPSS version 16 and the significant correlation was analysed using Two-Sample T-test. The findings of the study revealed that the nursing and business students in the Thai-medium program of Asia-Pacific International University had positive attitudes towards English language learning. Students perceived listening and speaking to be the most difficult language skills to acquire. The study also showed that there was no significant correlation between students’ academic achievement (GPA) and attitudinal level. Following the findings some pedagogical implications were discussed.

Keywords: Attitudes, Language attitudes, English language learning, Learning

Introduction

There is an increasing number of high school graduates choosing English as their major when pursuing their tertiary education. These students perceive that English is an international language for communication and a vital tool for better career prospects (Chaihiranwattana & Nookua, 2010; Kitjaroonchai and Kitjaroonchai, 2012). Furthermore, the Thai government has been actively encouraging young learners at all levels to learn English in order to prepare for the ASEAN Community 2015 (ASEAN Curriculum Sourcebook, 2012). This is due to the mandate that English will be the major language spoken in and among the ASEAN member countries, apart from other regional languages. In addition, the Office of Higher Education Commission has urged college students to develop their English competency to the highest level not only for career opportunities but also to be able to compete with rivals from other countries in the region (Kitjaroonchai, 2013). Professionals who may be directly affected by this would be those listed by the Mutual Recognition Arrangements (MRA) in ASEAN whereby those in medical practice, dental practice, nursing services, engineering services, architecture, land surveying, and accountancy services (Aldaba, 2013, p.2) are considered as vital human resources.

Literature Review

Definition of Attitudes

Attitude is an essential factor which plays a significant role in learners’ academic experience. It influences success or failure for learners depending on how they perceive and respond towards people, objects, circumstances or incidents they encounter in and outside the classroom setting. Montano and Kaspryzk describe attitude as composed of individual beliefs regarding outcomes, or characteristics pertinent to the performance of a behaviour. Furthermore, attitude is weighted by evaluations of the outcomes and attributes (2008). For Hogg and Vaughan (2005), attitude is defined as a system of beliefs, feelings, and behaviours...
towards objects, groups, events, or symbols which are considered valuable. In other words, attitude is linked to a person’s values and beliefs and promotes or discourages the choices made in all realms of activity individual encounters. Individuals may develop a sense of positive or negative attitude depending on experience and challenge they encounter in life, and attitudes can be changed when stimulated by persuasion or surrounding phenomenon (Eagly & Chaiken, 1995); this change can result from changes in a cognitive component such as receiving new information and different perspectives from other people (Khunasathitchai, 2009).

After considering definitions of attitude, this study will define attitude as a feeling or perception or belief gained through past experience; the response tendency of a person through behavioural expression either favourably or unfavourably towards persons, objects, situations, or circumstances; a construct that may change through stimuli, persuasion, or momentum from surrounding circumstances.

**Components of Attitude**

As seen in the definitions of attitude given in the preceding paragraph, it appears that attitude is made up of different components. Gardner (1985) describes the attitude concept in three components, namely, the affective component (feelings about the attitude object); the behavioral component (predisposition to act towards the attitude object in a certain way); and the cognitive component (beliefs about the attitude object).

The affective or emotional aspect of attitude can help learners to express whether they like or dislike the objects or surrounding situations and the inner feelings and emotions of foreign language learners influence their perspectives and their attitudes towards the target language (Zainol et al., 2012). This is because learning a foreign language is “an emotional process in which the teacher and his students engage in various emotional activities in a classroom setting and varied fruits of emotion are yielded” (Feng & Chen, 2009, p. 94). Emotional expressions can be identified through facial movements such as smiling or scowling or reactions through crying or laughing.

The behavioural aspect of attitude deals with people’s reaction and behavior toward situations they encounter. Their reaction can be expressed either favorably or unfavorably. According to Kara (2009, p. 102) positive attitudes “lead to the exhibition of positive behaviors toward courses of study, in that learners will absorb the acquired knowledge and put themselves into it and strive to learn more.” These students will be more eager to solve problems and apply information and skills useful for daily life than those who have neutral or negative attitudes. Thus, the behavioral aspect might view any positive act toward a person or object as positive attitude. In contrast, it views any negative acts as negative attitude.

The cognitive aspect of attitude is the beliefs of the language learners regarding their acquired knowledge and their comprehension and understanding toward the process of language acquisition. According to Zainol, et al., (2012) this aspect of attitude can be classified into four steps; namely, connecting the previous knowledge with the new one, creating new knowledge, checking new knowledge, and applying the new knowledge in different situations.

**Studies on English Language Learning Attitude**

Much research has been done nationally and internationally over the past years on learners’ attitudes towards English language learning. In Thailand, for example, Chaahiranwattana and Nookua (2010) used a sample of 388 students of Siam University to look into their attitudes towards English language learning. Their study revealed that most of the students had high positive attitudes towards English and that those who had good grades in English had more positive attitudes than their peers with lower grades. Thepsiri and Pojanapunya (2012) investigated Thai university students’ attitudes towards English language learning and their causal attribution for success or failure, and their research findings revealed that students seemed to have a positive attitude towards English learning due to the importance of English for their education and career prospects.

In China, a case of Chinese college students’ attitudes towards English was researched by Yu (2010) and the study showed that Chinese college students have positive attitudes towards the English language and that the longer these students studied English, the more likely they are to have positive attitudes towards the language; further, their experience with native-English teachers also contributed to their positive attitude toward the language.

In Kuwait, Ahmed and Lamees (2009) investigated non-English major ESL college students’ attitudes and preference towards learning English at Kuwait University. The study indicated that the majority of the
samples realized the importance of English. The findings also revealed that there was a relationship between the negative past high school English learning with the negative attitude of female students toward English language learning. In addition, most of students preferred learning English through discussions, multimedia and computers.

In Turkey, Inal, Evin, and Saracaloglu (2005) investigated the relation between students’ attitudes toward foreign language and foreign language achievement. Their research findings showed that there is a significant relation between student academic achievement and student attitude towards foreign language.

In Japan, Kobayashi (2002) looked into Japanese female students’ attitudes towards English learning and her study revealed that young Japanese women had positive attitudes towards English language learning in and outside the country due to social status and educational elements such as opportunity for life planning and effective tools for their achievement of better lives and professions.

Since it is assumed that individuals may have different attitudes towards languages and their attitudes may serve in different aspects or useful functions. Therefore, the present study attempts to investigate the attitudes towards English language learning of nursing and business students of Asia-Pacific International University with a belief that when language teachers have a better understanding of students’ attitudes they may select appropriate materials or relevant activities that stimulate learners’ language learning experience so that language acquisition can be enhanced.

**Research Questions and Hypotheses**

The research questions and hypotheses are as follows:

This study endeavours to answer the following questions:

1. What are the attitudes of nursing and business students of Asia-Pacific International University towards English language learning?
2. What is the most difficult language skill perceived by nursing and business students of Asia-Pacific International University?
3. Is there any significant difference between nursing students’ attitudes and business students’ attitudes towards English language learning?
4. Is there any significant correlation between the students’ GPA and their attitude level?

**H₀:** There is no significant difference between nursing students and business students’ attitudes towards English language learning.

**H₁:** There is a significant correlation between the students with higher GPA and their attitude level.

**Research Methodology**

**Participants**

The sample of this study consisted of 275 students, studying at Asia-Pacific International University. Of these participants, 214 students were from the Faculty of Nursing and 61 from the Faculty of Business Administration. Students from these majors were chosen because their area of study is within the seven vital professions mentioned by ASEAN. They were in different levels of study ranging from freshman to senior with age ranges between 18-25 years old. These students are required to take three general English courses which contribute to 9 study credits in their study programs. These general English courses are administered under the Faculty of Arts and Humanities. The nursing students are required to complete all the three courses within the first two years in college before they transfer to the Bangkok campus, whereas the business students may put off completion of the English courses until they are in their senior year.

**Design**

The design of this study was quantitative in nature. Adapted questionnaire items were employed as a measuring instrument. The questionnaire items were translated into Thai and the reliability of the questionnaire was tested with 30 nursing and business students to determine Cronbach’s Alpha value. The reliability coefficient was 0.82. Having obtained the value of reliability, the questionnaire was passed out. The participants were asked to answer all the items in the questionnaire honestly, giving their own perceptions
about their attitudes towards English language. They were asked to respond to the questionnaire while the researcher administered the classes to ensure that the respondents understood the statements clearly. The respondents were given 25 minutes to fill out the questionnaire during their class hours. Data were collected shortly after for further analysis.

**Instrument**

The measuring instrument used in this study was an attitude questionnaire which focused on the attitudes towards English language. The questionnaire items were adapted from the Attitude and Motivation Test Battery (AMTB) developed by Gardner (1985). They questionnaire method has proved to be a “useful way(s) of gathering information about affective dimensions of teaching and learning such as beliefs, motivation, attitudes, and preference” (Richard, 1995, p.10) There were 20 five- point Likert (1932) scale items on a scale of 1 to 5, ranging from strongly disagree (SD) to strongly agree (SA) where 1 meant strongly disagree, and 5, strongly agree, applied on the positive statements. For the negative statements, 1 meant strongly agree and 5 stood for strongly disagree. There were 11 positive statements and 9 negative statements.

The open-ended question was used to obtain supplementary information concerning the respondent’s perception of difficult language skills in English language learning and reasons or causes that contribute to the difficulty that they perceived. This would help the researcher to better understand the barriers in acquiring the language skills.

The questionnaire consisted of the following parts:

Part I: Demographic profile of the respondent: gender, year of study, age, grade in English from the previous semester. Some of these demographic characteristics in this study would be partially used for analysis.

Part II: Twenty close-ended attitude questionnaire items for examining attitudes of the respondents toward English language learning in general. These questionnaire items were rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree for positive statements, and vice versa for the negative statements).

Part III: Three close-ended questions concerning the respondent’s frequency of using English and level of English communication skills. One open-ended question was to investigate the respondent’s perception of difficult language skills.

It should be noted that the questionnaire items were translated into Thai in order to ensure that all the participants would be able to understand the statements correctly.

It is worthwhile mentioning that apart from the questionnaire, interviews were also used to obtain data to supplement and cross-validate the participants’ responses to the questions. The students were asked questions related to their attitudes towards English language learning. They responded to questions such as a) What is your attitude towards English language learning?; b) Do you think the current study program provides adequate English courses?; and c) What do you think is the role of the English language when ASEAN Community 2015 is merged?

**Data Analysis Procedure**

The first section of the questionnaire was analysed through percentages to explore the participants’ demographical profile. The second section was analysed through statistical analysis in terms of percentage, means, and standard deviations by using SPSS version 16, to explore the nursing and business students’ attitudes towards English and any significant difference between the nursing and business students’ attitudes towards English, and correlation between students’ high grades with their attitude level. The Two-Sample T-test and Correlation Coefficient were conducted to answer the third and fourth questions. The additional open-ended question in Part III of this questionnaire was analysed to examine the respondents’ perception on reasons or causes contributing to the difficulty of acquiring of language skills.

To interpret the mean score, the researcher adopted the interpreting procedure developed by Chaihiranwattana & Nookua (2010) as shown in Table 1 below.
Table 1: Interpretation of mean score of nursing and business students’ attitude towards English language learning

<table>
<thead>
<tr>
<th>Mean levels</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>very positive</td>
<td>4.21 - 5.00</td>
</tr>
<tr>
<td>positive</td>
<td>3.41 - 4.20</td>
</tr>
<tr>
<td>neutral</td>
<td>2.61 - 3.40</td>
</tr>
<tr>
<td>negative</td>
<td>1.81 - 2.60</td>
</tr>
<tr>
<td>very negative</td>
<td>1.00 – 1.80</td>
</tr>
</tbody>
</table>

The mean score for each item indicated the level of the students’ attitude: the higher score indicated that they had positive attitude, while the lower score indicated a negative attitude toward English language.

Findings and Interpretations

The demographic characteristics of the participants are summarized in Table 2.

Table 2: Frequency of participants divided according to major, gender, and year of study (N=275).

<table>
<thead>
<tr>
<th>Major</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing</td>
<td>214</td>
<td>78</td>
</tr>
<tr>
<td>Business and Administration</td>
<td>61</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>275</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>51</td>
<td>19</td>
</tr>
<tr>
<td>Female</td>
<td>224</td>
<td>81</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year of Study</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>105</td>
<td>38</td>
</tr>
<tr>
<td>Sophomore</td>
<td>52</td>
<td>19</td>
</tr>
<tr>
<td>Junior</td>
<td>75</td>
<td>27</td>
</tr>
<tr>
<td>Senior</td>
<td>43</td>
<td>16</td>
</tr>
</tbody>
</table>

Figure A shows the frequency of the participants using English. As can be seen, the biggest group, over 1/3 of the total, seldom used English, while the second biggest group used English only in English class. Of these 275 respondents, 6 of them (2%) stated they never used English although they were required to take English courses. This implies that these students, despite registering for the English courses, didn’t use English at all.

Figure A: Percentage of frequency of using English (N=275)
As seen in Figure B below, close to one half of these students admitted that their English proficiency needed improvement. It can be concluded that those who could use English well or average were less than those who needed improvement or used unacceptable English.

Figure B: Percentage of level of English proficiency (N = 275)

To further probe into the nursing and business students’ attitudes towards English language learning, the participants were asked to rate a list of twenty statements rated on a 5-point Likert scale in which their attitudes were ranked from(5) strongly agree and (1) strongly disagree for positive statements, and vice versa for the negative ones. Percentages of the respondents’ attitudes in a 5-point Likert rating scale are shown in Table 3.

Table 3: The percentage of nursing and business students’ attitudes towards English language learning

<table>
<thead>
<tr>
<th>Items on Attitude</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I like to speak English.</td>
<td>16.4</td>
<td>31.3</td>
<td>36.0</td>
<td>10.9</td>
<td>5.4</td>
</tr>
<tr>
<td>2. I do not like someone who speaks to me in English.</td>
<td>13.8</td>
<td>16.0</td>
<td>22.2</td>
<td>25.1</td>
<td>22.9</td>
</tr>
<tr>
<td>3. English is a universal language for communication.</td>
<td>58.9</td>
<td>19.6</td>
<td>10.9</td>
<td>2.9</td>
<td>7.6</td>
</tr>
<tr>
<td>4. Knowing English is beneficial for me to find a good job.</td>
<td>56.0</td>
<td>24.7</td>
<td>7.3</td>
<td>4.0</td>
<td>8.0</td>
</tr>
<tr>
<td>5. I am not interested in taking additional English lessons.</td>
<td>20.0</td>
<td>16.4</td>
<td>15.3</td>
<td>15.6</td>
<td>32.7</td>
</tr>
<tr>
<td>6. Learning English is important because it will help me become more knowledgeable.</td>
<td>57.1</td>
<td>23.3</td>
<td>9.1</td>
<td>2.5</td>
<td>8.0</td>
</tr>
<tr>
<td>7. I think studying English is boring.</td>
<td>16.0</td>
<td>13.8</td>
<td>25.5</td>
<td>18.9</td>
<td>25.8</td>
</tr>
<tr>
<td>8. English is a fun language to learn.</td>
<td>30.9</td>
<td>33.1</td>
<td>24.7</td>
<td>6.2</td>
<td>5.1</td>
</tr>
<tr>
<td>9. I will never be able to learn English because I do not understand grammar.</td>
<td>12.7</td>
<td>22.5</td>
<td>31.3</td>
<td>20.0</td>
<td>13.5</td>
</tr>
<tr>
<td>10. I think I can still find jobs without knowing English.</td>
<td>18.5</td>
<td>14.9</td>
<td>24.0</td>
<td>18.2</td>
<td>24.4</td>
</tr>
<tr>
<td>11. I really work hard to learn English.</td>
<td>26.5</td>
<td>33.8</td>
<td>24.7</td>
<td>6.9</td>
<td>8.0</td>
</tr>
<tr>
<td>12. I enjoy meeting people who speak English because I can practice the language with them.</td>
<td>26.9</td>
<td>28.4</td>
<td>31.6</td>
<td>8.4</td>
<td>4.7</td>
</tr>
<tr>
<td>13. English should not be made compulsory at school or college.</td>
<td>20.0</td>
<td>12.4</td>
<td>21.1</td>
<td>19.6</td>
<td>26.9</td>
</tr>
<tr>
<td>14. The teaching and learning of English should start as early as nursery school</td>
<td>60.4</td>
<td>20.7</td>
<td>7.6</td>
<td>2.5</td>
<td>8.7</td>
</tr>
<tr>
<td>15. To be honest, I really have no desire to learn English.</td>
<td>18.9</td>
<td>13.1</td>
<td>13.5</td>
<td>14.5</td>
<td>40.0</td>
</tr>
<tr>
<td>16. More English courses should be added in the nursing program / the business program</td>
<td>44.7</td>
<td>28.0</td>
<td>18.5</td>
<td>2.5</td>
<td>6.2</td>
</tr>
</tbody>
</table>
17. English should be emphasized in all college classes including general education courses.  
18. Knowing English will not help the country to move forward when AEC 2015 is established.  
19. English will not be as important as Mandarin in this part of the region when AEC 2015 is established.  
20. High English proficiency and language skills will definitely help me to find job in other ASEAN member countries.

As seen in Table 3, about 79% of the respondents agreed and strongly agreed that “English is a universal language for communication” (item 3), and about 81% admitted that knowing English will be beneficial for them to find a good job in the future (item 4), whereas 80.4% agreed and strongly agreed that learning English is important because it will help them become knowledgeable people (item 6). This agreement was supported at 81.1% and 72.7% with the idea that “the teaching and learning of English should start as early as nursery school” and “more English courses should be added in the nursing/business program” (items 14 and 16). Over 80% of these students agreed and strongly agreed that high English proficiency and language skills will be very helpful to find jobs when the ASEAN community is merged and this agreement was supported at 77.5% with the idea that “English should be emphasized in all college classes including general education courses”. However, less than half of the respondents (47.7%) agreed and strongly agreed with the statement “I like to speak English.” This finding conflicts with the statement “I enjoy meeting people who speak English because I can practice the language with them” in item 12, in which 55.3% showed agreement and strong agreement. Such finding needs further analysis. One possible explanation is that over half of these students want to practice English with foreign friends when they have opportunities for career prospect and knowledge advancement, while less than half of them do not regularly use English so they do not like to speak with someone in English and they think that the language grammar is difficult to acquire and they lack ambition to learn it (items 2, 9, and 15) although they perceived its importance. Additionally, of these respondents, 64% of them perceived that English is a fun language to learn whereas a quarter of them neither agreed nor disagreed with this.

For some of the negative statements, it is interesting to know that 36.4% agreed and strongly agreed with the statement “I am not interested in taking additional English lessons” (item 5), and 30% agreed and strongly agreed that English is a boring subject to learn (item 7). About 33% showed agreement and strong agreement that they could still find jobs without knowing English (item 10), supported at 40% with the statement “knowing English will not help the country to move forward when AEC 2015 is established” (item 18). Such finding implies that English knowledge alone cannot drive the country forward to optimal development but highly skilled labor is also counted (Wiriyachitra, 2002). Additionally, 36.4% perceived that Mandarin will surpass the English language in terms of business and communication in Southeast Asia when AEC is merged in 2015 due to the rapid growth of the Chinese population and their language becoming popular (CILT, 2007). However, 44% disagreed and strongly disagreed with this (item 19).

In order to obtain an overview picture of these students’ attitudes towards English language learning, the percentage of attitude level is classified based on the interpretation of mean score as defined in Table 1, page 5. The analysed result is shown in Figure C:

Figure C: Percentage of students’ attitude level
As seen in Figure C, 60% of these students have positive to very positive attitudes towards English language learning, whereas 32% show neutral attitudes, and 8% have negative to very negative attitudes toward the language learning. It can be concluded that these nursing and business students in the Thai-medium program of Asia-Pacific International University in general have positive attitudes towards English language learning although the language is not commonly used among them. The findings are congruent with those of Chaihiranwattana and Nookua (2010) who found that most Thai undergraduate non-English majors who enrolled in fundamental English courses had positive attitudes towards English language learning, and with those of Thepsiri and Pojanapunya (2012) whose research findings revealed that students had positive attitude towards English learning due to their perception of the importance of the language for their education and career prospect.

In Table 4, the statistical analysis reveals that the mean score of the nursing and business students’ attitudes towards English language learning stands at 3.628 and standard deviation is 0.834. This finding implies that these students had slightly positive attitude towards English language as it refers to the interpretation of mean score defined in Table 1.

Table 4: Mean score and standard deviation of students’ attitudes towards English language

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes mean</td>
<td>275</td>
<td>1.00</td>
<td>5.00</td>
<td>3.628</td>
<td>.05034</td>
</tr>
<tr>
<td>Valid N(listwise)</td>
<td>275</td>
<td>.83485</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td>214</td>
<td>1.00</td>
<td>5.00</td>
<td>3.649</td>
<td>.05524</td>
</tr>
<tr>
<td>Business</td>
<td>61</td>
<td>1.00</td>
<td>5.00</td>
<td>3.552</td>
<td>.11856</td>
</tr>
</tbody>
</table>

In response to research question no. 3 the table below shows the analysis of the significant difference in attitudes between the nursing and business students.

Table 5: Analysis of the significant difference between nursing students’ attitudes and business students’ attitudes towards English language learning

<table>
<thead>
<tr>
<th>Independent Samples Test: Nursing vs Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levene’s Test for Equality of Variances</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>1.553</td>
</tr>
<tr>
<td>.744</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 5, the statistical analysis shows that there is no significant difference between nursing students and business students’ attitudes towards English language learning (P-Value = 0.459) at 95% Confidence Interval (-0.163, 0.357). The finding suggests that both nursing and business students of Asia-Pacific International University have equally positive attitudes towards English language learning. Thus the null hypothesis is not rejected and it can be concluded that students from both programs of study manifest
positive attitudes towards the language and they recognized that English is a language for communication and career prospect.

To examine if the students’ academic success had any correlation with their positive attitudes towards English, the Two-Sample T-Test was employed for analysis. As seen in Table 6, the analysis shows that there is no significant correlation between the students with high GPA and their attitudinal level (r=.015; p-value = .827). The data analysis was based on 221 out of the total respondents who reported their GPA in the survey.

Table 6: Analysis of the significant correlation between students’ academic achievement and their attitudinal level (N=221)

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes</td>
<td></td>
<td>.015</td>
<td>.827</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>.827</td>
<td>221</td>
</tr>
<tr>
<td>N</td>
<td>221</td>
<td>221</td>
<td></td>
</tr>
<tr>
<td>GPA</td>
<td></td>
<td>.015</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>.827</td>
<td>.827</td>
<td>221</td>
</tr>
<tr>
<td>N</td>
<td>221</td>
<td>221</td>
<td></td>
</tr>
</tbody>
</table>

In Table 6, it can be interpreted that students’ academic achievement, either low or high, had equal positive attitude towards English language learning. In other words, there is no relation between academic success and positive attitudes. The finding contradicts the studies of Gardner and Lambert (1972) who claim that there is a close relation between attitude and achievement, and of Inal, Evin, and Saracaloglu (2005) whose study indicates that there is a significant correlation between student academic achievement and student attitude towards foreign language. However, the result is congruent with Lanara (1999) whose study shows that there is no correlation between academic achievement and positive attitudes of learners who learn English as a foreign language. This might be due to the fact that the present study only examined the relation between students’ attitude and their GPA, and their GPA accumulated mainly from their major courses, namely, nursing and business studies. Therefore, their positive attitude towards English does not truly count on their academic achievement (GPA) and one possible factor is learners from different cultural backgrounds may perceive English language acquisition differently from one another. This needs further analysis for other possible related factors. Additionally, Thai college students had positive attitude towards English because they perceived that English is a universal language for communication and it is important for future careers although some of them tended to dislike it or did not enjoy learning the language (Teauratanagul, 2008; Chaihiranwattana and Nookua, 2010; Thepsiri and Pojanapunya, 2012; Kitjaroonchai and Kitjaroonchai, 2012).

Since the study engaged students of different levels from freshman to senior, it is worthwhile analysing the trend of their attitudinal change between each level of study. The result of analysis is shown in Figure D.

Figure D: Chart illustrating students year of study and their attitude levels
As shown in Figure D, freshman students appear to have the highest attitude towards learning the English language compared to the other groups. However, their attitude level started to decline as they progressed to sophomore and junior. Notwithstanding the downhill trend of their attitude level started to rise when they enrolled in their last year in college. The trend of attitudinal level and orientation change imply that when these students started college, they showed highly positive attitudes towards learning the English language. This might be due to the fact that they needed to adjust themselves to a new environmental setting surrounded with foreign students whose English proficiency was better than theirs. Having observed this, they might have been motivated to improve their language skills in order to communicate and be understood by those international schoolmates. However, as the years went by while numerous courses throughout their study program were taught solely in Thai, so did the classroom interactions, and their initial attitude level shifted. Nevertheless, their attitude level gradually improved in their senior year. This might be due to the fact that they came to realize that English skills are necessary and beneficial for them to find an ideal job after college.

In spite of having positive attitudes towards English language learning, the students faced challenges in learning the language. To investigate these students’ perception of difficult language skills, an open-ended question in Part III of the survey questionnaire was added. The result of this study shows in Figure E.

Figure E: English language learning difficulties perceived by nursing and business students (N=275)

As seen from Figure E, the respondents rated listening as the most difficult language skill among the four language skills, followed by speaking, writing, and reading respectively. Such finding is in line with that of Suwanarak & Phothongsunan (2009) whose study results show that half of the undergraduate students participating in their study stated that they were unable to use English to communicate in real life situations for they are weak in listening and speaking skills, and that of Kitjaroonchai and Kitjaroonchai (2012) that Thai students majoring in English perceive listening and speaking as difficult skills to acquire due to divergence of accents. However, the result of this present study contrasts with Pawapatcharaudom’s (2007) whose study result shows that the most serious problem of Thai students in English language learning is writing skills.

To follow up students’ answers in the close-ended question number 3, an open-ended question sought for in-depth information regarding their perception of difficult language skills. The students were required to indicate specific elements that they discerned obstructed language acquisition. Of the 275 participants, 87% of them responded to the open-ended question; however, some of these subjects indicated more than one language skill. Listening was perceived as the most difficult language skill. From the analysis of the open-ended question in the research survey, 103 comments were noted regarding problems and difficulty in listening skills. The following statements are direct quotes from the respondents who perceived listening skills difficult to acquire.

“Listening to English is difficult because people from different countries have different accents and I cannot comprehend when they speak too fast.” sophomore nursing student.

“In order to communicate effectively we need to understand what people speak to us, and because of their different accents and pronunciation I cannot catch up when they try to talk to me.” freshman nursing student.
“Most of the time when I listen to the audio program that my teacher uses for class activities I cannot comprehend the main ideas because the speakers speak very fast with different accents. In addition, I only understand very little when I am familiar with those words I hear.” Junior business student.

The finding of this current study is congruent with that of Kitjaroonchai and Kitjaroonchai (2012) whose study disclosed that Thai students at Asia Pacific International University take general English courses with different teachers who come from different countries and have foreign friends who live on campus and who speak with different accents. Other factors may include listening exercises encountered in their textbooks, in which conversations or talks are voiced by different speakers both native and non-native speakers with strong and mild accents. Speaking was perceived as the second most difficult skill followed by writing. Notwithstanding, the analysis showed that these two language skills were perceived almost at equal level with frequency comments voiced at 68 and 66, respectively. Some comments from the respondents regarding speaking and writing difficulties are such as they don’t know how to select appropriate words or phrases to respond to the partners while having a dialogue, or they don’t know how to begin a conversation with someone. Some of them said, “I need to improve speaking with correct use of grammar because often times I tend to forget words that I need and I feel nervous when I speak wrongly.” Those who perceived writing a difficult language skill claimed that writing skills require knowledge of correct grammar, syntax, lexicon, and morphology. They need to retain a large volume of vocabulary or phrases and in that they can use them correctly and appropriately in different writing contexts. Some stated that they could not string words into a proper sentence since writing needs correct grammar and appropriate words and it is different from speaking. Writing is formal and more structured whereas speaking does not require complete sentences and it is less structured.

Other language learning difficulties encountered by the respondents are such as English is rich in vocabulary and they cannot remember the words when they are not frequently used in daily life. Language structures and syntaxes are complex and when they are not regularly drilled, opportunities to master the language grow less.

Interview results

This section serves as the secondary source (student interviews) in order to support and enrich the discussion of the findings from the survey questionnaires (primary source). Twenty students were randomly chosen for interviews; nine students were from the Faculty of Business Administration and eleven students were nursing students. The interviews were conducted in Thai and transcribed and then translated into English. All students who were interviewed except one agreed that they had positive attitudes towards English. Some common reasons which attributed to their positive attitudes towards the language are such as 1) English is important for career opportunity, 2) English is a universal language for global communication, 3) English is an international language for advanced studies, and 4) English will be the language used when ASEAN Economic Community 2015 is merged. Fourteen of the interviewees expressed their perception of the significant role of the English language in the upcoming of the merging of ASEAN Community. The following statement was a direct quote from a sophomore nursing student who expressed her point of view on the role of the language in nursing profession in response to the question “What do you think is the role of the English language when ASEAN Community 2015 is merged?

“...English will be a vital language for communication in nursing profession. By the time I become a registered nurse, I will definitely work with not only local people but also foreign customers who live and work in our country. I read in research articles stating that our medical services here in Thailand meet high standard and that’s why a lot of foreigners come to our country to receive medical treatment. In addition, medical expenses here are also cheaper compared to countries in Europe and many countries in Asia. Bilingual nurses will be able to cater for the needs of patients and take up their duty more effectively. ...Thai nurses are caring and service-minded to take care of patients but they lack English communication skills. Although they can do well in helping patients, they may not get to a higher position due to the lack of English skills...”

Another finding from the interview session expressed by a junior business student regarding the impact of English on her mother’s current workplace is that English becomes an instrument for ranking and promotion.
in career opportunity. The following statement is a direct quote from her expression.

“...I think English will be a very important language because I can see the current impact now at my mother’s workplace. My mother works in Siam Cement Factory and her executive manager asked her to take TOEIC exam as a means to upgrade her in a better position and also for incentive purposes. The manager urges employees to take English proficiency exam to measure their language aptitude in order to transfer and transact his employees in the company...”

In addition, there were students who stated that the general English courses required in their study programs are inadequate to help them master the language, when asked if their study program provided adequate English courses.

They perceived that the English lessons they acquired in class are too general and the lessons do not prepare them for the labour force. They mentioned that English lessons and class activities should emphasize more on communication skills instead of structural rules and morphology. These students mentioned that their teachers intend to follow activities defined in the textbook to fulfil the course objectives rather than discern students’ learning outcome and focus on knowledge application to be used in an actual setting. Five students in the nursing program stated that due to class size, they were hardly given any chances to give short speeches to drill on speaking skills, and listening exercises were rarely practiced in class; instead the teacher required them to work out in the language laboratory. These students mentioned that often times in class they learned grammar as well as how to pronounce English words or phrases correctly. They said that many of their classmates failed to use the language laboratory and they did poorly in most of the listening tests. In their major courses of study in which the medium of instructions is Thai, they wish their teachers would integrate in the lessons more terminology or technical expressions used in the business and nursing professions. They also mentioned that group presentations can be occasionally done in English to help students gain confidence to use the language. The statement below came from a sophomore nursing student in response to the question, “Do you think your current study program provides adequate English courses?”

“I think learning only 3 general English courses are not adequate. Although we learn English in class, we rarely use them outside classroom with our classmates. At the end of the course we forget those lessons because we don’t use them. It would be nice if medical terminology or phrases associated with nursing profession were used and integrated into those Thai –medium courses that we take. When we only learn general English and those lessons have nothing to do with nursing profession, we will not be able to apply them in our future. I think we need to improve our English because nursing profession is also one of the skilled professions that have been approved to mobilize freely in Southeast Asian region. We may come into contact with foreign patients at the hospital where we work, so if those major courses integrate some English instructions or medical terminology, I think they will be very beneficial to our work...”

In summary, the students interviewed have positive attitudes toward English and they perceive English as an important means for communication although they struggle to master the language due to varied circumstances such as an unsupportive environment in that they only interact with their classmates who speak Thai, current general English courses do not solely prepare them for career path, and limitation of English instruction used in class activities and learning experience.

Discussion

This section presents a discussion of the findings. For ease of references, the study results are explained based on the order of the study objectives, which are 1) the attitudes of nursing and business students of Asia-Pacific International University towards English language learning 2) difficult language skills perceived by nursing and business students of Asia-Pacific International University.

The findings show that the nursing and business students of Asia-Pacific International University had slightly positive attitudes towards English language learning due to their discernment of the language as a means for career opportunity, self development, and global communication. Most of the students agreed that English is “a universal language and it becomes the language widely used in skilled occupations including science and technology” (Zughoul, 2003; Al-Tamimi and Shuib, 2009). English must be reinforced in classes and additional courses for professional purposes should be considered for integration into the current nursing
and business studies in the Thai-medium program at Asia-Pacific International University. The reinforcement of English-medium instruction methods will prepare these students to gain confidence in competing with people from neighbouring countries since English proficiency is an effective tool for better lives (Kobayashi, 2002).

The study revealed that there is no significant difference in terms of attitude level between nursing and business students. This might be due to the fact that these students experience similar circumstances in college and both study programs require their students to undertake general English courses taught by the same language teachers from the Faculty of Arts and Humanities. Learners’ attitudes towards English are believed to be affected by social environment and educational elements (Kobayashi, 2002). Additionally, almost all of the participating students live on campus in the dormitory and their exposure to English via various extracurricular activities organized by the university and responsible departments may contribute to their positive attitudes towards the language. The student body at Asia-Pacific International University comprises over 20 nationalities and this may account for Thai students wanting to improve their English communication to understand foreign friends whom they come into contact with (Kitjaroonchai and Kitjaroonchai, 2012).

Listening was rated the most difficult language skill to acquire due to divergence of accents from mild to strong, spoken by individuals who are from diverse nationalities. For students with low English proficiency or inadequate training from former schools, listening to lectures in college classes would be unquestionably perplexing since listening is a receptive skill and language learners’ exposure to it on a regular basis is a must in order to master the language skill since effective listening comprehension skills are essential for students’ academic success (Selamat and Sidhu, 2011). The students perceive listening as the most complex skill possibly due to the fact that Thai schools under basic education do not explicitly teach students to listen to native-like accent, or their teachers occasionally if ever spoke English or used Thaiglish in the language class resulting in poor performance.

**Conclusion and Pedagogical Implications**

This study aimed to investigate the attitudes towards English language learning of nursing and business students who enrolled in the Thai-medium programs at Asia-Pacific International University. The results showed the students to have slightly positive attitudes towards English language learning. Listening is the most difficult language skill perceived by the subjects, followed by speaking, writing, and reading skills, respectively. The findings also revealed that there is no significant difference between nursing students’ attitudes and business students’ attitudes towards English language learning, nor is there significant correlation between the students’ high GPA and their attitude level. This implies that both nursing and business students had slightly equal positive attitudes towards English language learning, and their academic achievements either low or high had no relation to their positive attitudes. They perceived that English is an active instrument to help them to find a good job; that the language will help them become more knowledgeable; and that English is a means for global communication. Having discerned students’ perception towards the language, it is necessary for teachers to provide positive learning environments to help sustain the students’ positive attitudes towards the English language learning. These students’ positive attitudes may be propelled by external drive or instrumental motivation; however, such motivation may also have an influence on learners’ interpersonal purpose or learning process in the long run.

In reference to the students’ positive attitudes towards English language learning, it is pivotal for the English language teachers to maintain students’ positive view toward the language so that they will appreciate the language in the long run and make use of it more proficiently when circumstances urge them to do so. The following pedagogical implications should be taken into consideration by English teachers in the Faculty of Arts and Humanities, syllabus designers, program coordinators, and individuals who are responsible for students’ learning outcomes and achievements.

a) Constructing the English lessons or class activities that respond to learners’ needs. It is undeniable that students learn best when materials and instructions meet their demand or respond to their quest. The content of current general English courses seem to be less appropriate to prepare these students for their career path as viewed by the students interviewed. Language teachers might consider designing or compiling their own teaching materials related to English for occupational purposes such as English for nursing and business professions. This will encourage students to apply those lessons and knowledge acquired in classroom in real life situations.
b) Language teachers may opt to boost students’ listening comprehension and speaking drill by organizing listening and speech contests on a regular basis and monitoring their progress. Award presentations may be granted to honour students for their commitment and achievement in improving their language skills. If such a scheme yields positive outcome, responsible sectors should expand the activity on a continual basis with grander scale.

c) Establishing an English Corner in the Faculty of Arts and Humanities to provide Thai students more exposure to the language on a daily basis. The English Corner should be equipped with learning facilities and resources appropriate for Thai learners of the English language. Those resources must be made accessible and usable by students who come to improve their language skills. The responsible Faculty may consider delineating some regulations for the English Corner such as permitting no other languages except English when using the English Corner, or no books or materials in other languages allowed except those in English.

d) Establishing an English Clinic to provide opportunities for Thai students to improve their language skills. This can be done through mutual consent and cooperation between the Faculty of Arts and Humanities and the Faculty of Education and Psychology by requiring students with TESOL emphasis and those who undertake a teaching practicum to offer tutoring classes or voluntarily teach their Thai peers who are eager to improve their English. The English Clinic can yield a win-win situation if it is well implemented in that students who give tutoring lessons will gain valuable teaching experience while learners can improve their language acquisition without paying.

To sum up, the current study was conducted to investigate the attitudes of nursing and business students of Asia-Pacific International University towards English language learning. The findings indicated that these students have slightly positive attitudes towards the English language. The study results may provide useful guidelines for English language teachers, syllabus designers, and program coordinators who have a part in students’ academic achievement to help sustain their positive view towards the language and find means and strategies as outlined above to bolster their language learning experience since positive attitudes through learning experience will help students to learn and accomplish their goal much easier. The findings may not be representative of nursing and business students in other universities due to limitation of research population and the university context where this study was administered. Nevertheless, the researcher is confident that the study results are beneficial and will contribute in some way or another to other related studies and be of value to researchers whose interest focuses on foreign language learners’ attitudes toward English.

References


Khunasathitchai, K. (2009). *A survey study of students’ attitudes towards English I of the first year students, the Faculty of Technical Education majoring in computer technology at Rajamangala University of Technology Krungthep*. Language Institute, Thammasat University.


Teauratanagul, T. (2008). *Attitudes and motivation of learners towards English at two intervals: The Burapha University case*. Faculty of Humanities and Social Sciences, Burapha University.


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An Evaluation on the Health Promotion Behavior of Hypertension Patients Receiving Treatment at Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province

Pornpan Saminpanya, Ampaiwan Toomsan, Supatcharee Makornkan, Poomarin Intachai, Saowanee Tantipoonwinai, and Vipavadee Pongchuen

Abstract

This study gathered general information regarding health promotion behavior from the population of hypertension patients who received treatment at Langkhao Subdistrict Health Promoting Hospital, Saraburi province. A survey with questions in ten areas of behavior was given to the 69 hypertension patients at the hospital. The respondents indicated a very good conformity in two areas and the remaining eight areas showed good conformity to positive health promotion behavior. According to the results of this study, there is indication that the Langkhao Subdistrict Health Promoting Hospital is providing adequate health promotion behavior initiative for hypertension patients and they should continue with regular health promotion initiatives including training programs, brochures and establishing exercise groups within the community.

Keywords: Hypertension, Health Promotion Behavior

Background

In the industrialized world, 25% of 65–69 year olds and 50% of 80–84 year olds are affected by two or more chronic diseases at the same time (The World Health Report 2008). In 2008 cardiovascular disease was responsible for the largest proportion of NCD deaths under the age of 70 (39%), followed by cancer (27%). Chronic respiratory disease, digestive disease and other NCDs were responsible for approximately 30% of deaths (WHO, 2010).

In Thailand non-communicable diseases such as diabetes, hypertension and cardiovascular disease are rapidly increasing and the diseases are becoming more life threatening. Contributing factors for these diseases are that patients do not practice healthy habits, such as aerobic exercise and eating food; and the complications of these diseases affect the quality of patients’ life in a negative way. In 2004, the Director of the Thailand Bureau of Non-communicable Disease Department of Disease Control, Ministry of Public Health, said that “Changes in lifestyle affect the values of food consumption, adding amenities of everyday life into more urban society lead to an increased risk of heart disease and stroke that spread widely and increasingly. High blood pressure is a major cause of death. Together with stroke, ischemic heart disease and kidney disease, they are the top 5 leading causes of death in the country.” In 2010 the annual report stated that admission to the hospital of hypertension patients increased 4.7 times between 2000 and 2009 (Bureau of Non-Communicable Disease Department of Disease Control, Ministry of Public Health, 2010).

Currently, high blood pressure is increasing and can cause disease in people of all age groups. Possible causes can be from many factors, either non-modifiable such as genetics, or modifiable such as dietary habits. Thailand is a developing country; the economy has changed a lot. The people have to work to earn more money to live, so they don’t have sufficient time for self-care, choose an inappropriate diet, and lack exercise. Hypertension is a chronic disease not able to be cured, but the blood pressure can be controlled. The gradual nature of the disease is like a social disaster. In the first stage, the symptoms cannot be seen obviously. The pathology of the disease will spread slowly until the symptoms become more severe and permanent. Drugs is the only treatment to reduce the severity of symptoms; delay in treatment allows more complications, which
requires a longer term of treatment. If it is treated well continuously, the quality of life will be improved and patient’s symptoms will be decreased. If it isn’t treated well enough and patients are not able to take care of themselves, symptoms can be severe and complications occur that can lead to premature death (Bureau of Non-communicable Disease Department of Disease Control, Ministry of Public Health, 2009). Health behavior practices must be integrated consistently as part of a pattern of life to reduce health problems and prevent and control complications in the patients. This will finally lead to the well-being of life. (Pender, 1987)

The number of patients with hypertension is increasing at Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province and complications such as ischemic heart disease, myocardial infarction, stroke (broken blood vessel in the brain) and chronic renal failure are occurring. It happens because the patients don’t practice good health behavior.

Because of the above background, it was decided to study health promotion behavior of hypertension patients receiving treatment at Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province. The following objectives were to emphasize that patients behave correctly, to know how to promote good health, to reduce the risk of complications in patients with hypertension and to reduce the incidence of high blood pressure in the area of responsibility of Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province.

Objective

To study behavior practices of hypertensive patients who receive treatment at Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province.

Research Method

This research used a survey to study health promotion behavior of hypertension patients who were registered in the non-communicable disease department of Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province."

Population and Sample Group

The population used in this study is the patients who have been diagnosed by a physician as a person who is suffering from high blood pressure and are residents and registered in the non-communicable disease department of Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province. Because the population is only 69 people no random sample was taken.

Research Tool

The health behavior questionnaire was developed by the researchers and adapted from the research questionnaire of the Study of Health Promotion Behavior of Hypertension Patients Receiving Treatment at PiHarnDaeng Subdistrict Health Promoting Hospital, Mueang District, Suphan Buri Province (Nuttapus Jeanpakdee, 2010) and the research of Self Care Behavior Development of Hypertension Patients Receiving Treatment at MueangKan Municipality Community Clinic, MaeTaeng District, Chiang-Mai Province (Kornkamol Ruangvut, 2011) and refer to the concept of Pender’s health promotions (Pender, 1987).

This questionnaire was divided into two parts. Part one has ten general data questions for sex, age, marital status, education level, occupation, income, right for treatment, duration of illness, complications, and person who prepares food for hypertension patients. Part two has questions about 10 areas of health behavior that include 36 questions -- 7 for the ability of self-care in general, 6 for nutrition practices, 4 for exercise and leisure activities, 2 for sleep patterns, 4 for eliminating stress methods, 2 for realizing the value of self worth, 3 for purpose in life, 2 for relationships with others, 2 for environments control, and 5 for the use of health services. The rating scale has 4 choices: Practice regularly=4, Practice often=3, Practice sometimes=2, I never practice=1. The evaluation is based on the 10 indicators of Lifestyle and Health Habits and modified questions from The Health Promoting Lifestyle = HPLP (Walker, et al. 1987).

Interpretation of the average scores on the questionnaire of self-care behaviors of patients with high blood pressure are based on four groups as follows: 1.00 – 1.75 Need improvement , 1.76 – 2.50 Practicable, 2.51 – 3.27 Good, 3.28 – 4.00 Very good.
Quality Monitoring of Tool

1. Content Validity The researchers had modified a questionnaire and had 3 specialists proof the validity of the content and language use.

2. Finding Confidence The researchers used the proofed questionnaire with 30 hypertension patients who received treatment at Sounoi Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province. Then the questionnaire was analyzed using Cronbach’s alpha coefficient method.

Data Collection

The validated questionnaire was administered by the senior students of Mission Nursing Faculty and Langkhao Subdistrict health volunteers. They used the questionnaire to interview the hypertension patients at Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province.

Data Analysis

The 69 completed questionnaires collected from hypertension patients were analyzed in Excel. Basic statistic concepts like frequency, percentage, means and standard deviation are used for general data and health behavior scoring.

Research Result

The results of the study on health promoting behavior of patients with hypertension who received treatment at Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province are summarized in the following two tables.

Table 1 Demographic and general data of hypertension patients who received treatment at Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province.

<table>
<thead>
<tr>
<th>Item</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25</td>
<td>36.2%</td>
</tr>
<tr>
<td>Female</td>
<td>44</td>
<td>63.8%</td>
</tr>
<tr>
<td>Age Above 60</td>
<td>35</td>
<td>50.7%</td>
</tr>
<tr>
<td>Married</td>
<td>43</td>
<td>62.3%</td>
</tr>
<tr>
<td>Elementary level and above</td>
<td>45</td>
<td>65.2%</td>
</tr>
<tr>
<td>Employed</td>
<td>32</td>
<td>46.4%</td>
</tr>
<tr>
<td>Two Family Members</td>
<td>25</td>
<td>36.2%</td>
</tr>
<tr>
<td>Cook for Self</td>
<td>41</td>
<td>59.4%</td>
</tr>
<tr>
<td>Income from One Family Member</td>
<td>25</td>
<td>36.2%</td>
</tr>
<tr>
<td>Annual income less Than 5,000 THB</td>
<td>28</td>
<td>40.6%</td>
</tr>
<tr>
<td>Universal Health Care Coverage</td>
<td>59</td>
<td>85.5%</td>
</tr>
<tr>
<td>Hypertensive for 1-5 years</td>
<td>46</td>
<td>66.7%</td>
</tr>
<tr>
<td>No Complications</td>
<td>52</td>
<td>75.4%</td>
</tr>
<tr>
<td>Complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Cerebro-vascular stenosis</td>
<td>6</td>
<td>35.30%</td>
</tr>
<tr>
<td>- Angina pectoris</td>
<td>3</td>
<td>17.65%</td>
</tr>
<tr>
<td>- Myocardial infraction</td>
<td>3</td>
<td>17.65%</td>
</tr>
<tr>
<td>- Diabetic nephropathy</td>
<td>2</td>
<td>11.77%</td>
</tr>
<tr>
<td>- Hyperlipidemia</td>
<td>1</td>
<td>5.88%</td>
</tr>
<tr>
<td>- Cardiac arrhythmia</td>
<td>1</td>
<td>5.88%</td>
</tr>
<tr>
<td>- Stroke</td>
<td>1</td>
<td>5.88%</td>
</tr>
</tbody>
</table>
Over 60% were in three categories – married, female and achievement of at least an elementary level of education. More than 85% had universal health care coverage. Slightly more than half were above 50 years of age. Almost half were employed. Although 67% had been hypertensive for 1-5 years, 75% had no complications.

Table 2 The mean, standard deviation and interpretation of the ten categories of health promoting behavior of hypertension patients who receive treatment at Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province (N=69).

<table>
<thead>
<tr>
<th>Health Promoting Behavior</th>
<th>X</th>
<th>S.D</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environments control</td>
<td>3.43</td>
<td>0.81</td>
<td>Very good</td>
</tr>
<tr>
<td>Purpose in life</td>
<td>3.33</td>
<td>0.94</td>
<td>Very good</td>
</tr>
<tr>
<td>The ability to self-care in general</td>
<td>3.25</td>
<td>1.06</td>
<td>Good</td>
</tr>
<tr>
<td>The use of health services</td>
<td>3.20</td>
<td>0.99</td>
<td>Good</td>
</tr>
<tr>
<td>Eliminating stress methods</td>
<td>3.03</td>
<td>1.11</td>
<td>Good</td>
</tr>
<tr>
<td>Sleep patterns</td>
<td>2.90</td>
<td>1.20</td>
<td>Good</td>
</tr>
<tr>
<td>Nutrition practices</td>
<td>2.88</td>
<td>1.02</td>
<td>Good</td>
</tr>
<tr>
<td>Relationships with others</td>
<td>2.83</td>
<td>1.16</td>
<td>Good</td>
</tr>
<tr>
<td>Exercise and leisure activities</td>
<td>2.88</td>
<td>1.02</td>
<td>Good</td>
</tr>
<tr>
<td>Realizing the value of self worth</td>
<td>2.61</td>
<td>1.10</td>
<td>Good</td>
</tr>
<tr>
<td>Average of Total Health Promoting Behaviors</td>
<td>3.02</td>
<td>1.05</td>
<td>Good</td>
</tr>
</tbody>
</table>

Table 2 shows that purpose in life and environment control was very good, and the other health promoting behaviors were good. No behaviors fell into the practicable or need improvement level. The mean of the total health promoting behaviors is 3.02 which is good.

Discussion

According to Table 2 the overall average was 3.02 (good level) with the patients ranking very good in two areas – purpose in life and environment control. The other 8 behavior areas ranked at the good level which demonstrated that education of hypertension patients is successful but could be improved in some areas.

A similar research was done by Jeanpakdee (2010) who studied the Health Promotion Behavior of Hypertension Patients Receiving Treatment at PiHarnDaeng Subdistrict Health Promoting Hospital, Mueang District, Suphan Buri Province. The results of this study indicated that health promoting behavior was in a very good level with an overall mean equal to 3.33. The 5 areas of ability to self-care in general, eliminating stress methods, realizing the value of self worth, relationships with others and use of health services were in a very good level. Five others include nutrition practices, exercise and leisure activities, sleep patterns, purpose in life and environment control were in a good level.

Another related study conducted by Pomchan (2009) studied health promoting behaviors among hypertensive patients at the Phisalee Hospital, Nakhon Sawan Province. This study found that the patient had a moderately appropriate level of overall health promoting behaviors. The result of the study could be a developmental guideline for hypertensive patients in health promoting behavior to prevent complications. Supeekam (2008) studied the health promotion of elderly with hypertension in Phochai Sub-district, Mueang District, Nongbualamphu province, and it was found that elderly patients with hypertension practice nutrition and stress management at “sometimes right practice level” (equal to “practicable level”). For overall practice, the right and continuing practice level was significantly different at the 0.01 significance levels. Pender (1987) found that a person with higher responsibility can influence a patient in a positive way and also can help protect and decrease risk of complication.

In summary, if hypertension patients have been consistently encouraged by health personnel, it will cause them to have better quality of life and can be a role model for families in other communities.
Conclusion and Future Directions

Patients who received treatment at Langkhao Subdistrict Health Promoting Hospital, Muak Lek Distrcit, Saraburi Province, have practiced health promoting behavior at a good level. This is encouraging and it is hoped that this Hospital will continue to educate patients about health promoting behavior. Furthermore, the Hospital could disseminate best practices to other hospitals in the nearby districts. Nonetheless, there should be additional studies to develop or adjust health promoting behaviors in hypertension patients under the responsibility of Langkhao Subdistrict Health Promoting Hospital, Muaklek District, Saraburi Province. Finally, there should be initiatives placed to explore factors which may contribute to complications among patients who self-care, and those who are receiving medical attention.

References


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Modern and Traditional Perspectives of Osteoporosis:  
An Ethno-Orthopedic Study

Robin D. Tribhuwan, Joy C. Kurian, and Satish Meshram

Abstract

For centuries before the inception of modern medicine, traditional folk, the world over, had developed culture specific beliefs and practices regarding health and disease. This paper unveils the socio-cultural beliefs and practices regarding Osteoporosis among the Gond and the Thakur tribal folk inhabiting the state of Maharashtra in India. Through in-depth interviews of the patients, their families, the religious leaders and the village elders belonging to the Gadchiroli and Raigad districts of Maharashtra, valuable qualitative information was gathered and analyzed. To be more precise, qualitative data was gathered through in-depth interviews of 50 Thakurs, 50 Gonds, 5 bone setters, 5 herbalists and 5 midwives. It is interesting to note that the traditional views of the tribal folk regarding Osteoporosis and its etiology, the growth and development of the human bones, are very different and rather weird from those of the allopathic interpretations in modern medicine.  There is an urgent need to carry out more ethno-orthopedic studies on the tribal folk throughout India and to recommend practical strategies to create awareness among them about the cause and care of Osteoporosis which primarily affects the senior female population over the age of 50 but to a lesser degree the senior male population over the age of 50 as well.

Keywords: Osteoporosis, ethno-orthopedic, tribal folk (Thakurs and Gonds), risk factors

Introduction

Orthopedic surgeons today are concerned with diseases and injuries to the bones, joints, trunk and limbs. Their field includes the study of the nerves and blood vessels too. Adams and Hamblem (2001). In fact, the medical field of orthopedics is so vast, that an orthopedic surgeon takes years and decades of practice before he is considered a specialist by others in his field. There are several diseases of the limbs, trunk, joints, bones, and the skeletal system in general. It is difficult for a layman to understand these disorders and the scientific etiology associated with them. However, the concept of disease and its etiology varies from one society to another and hence the need for an ethno-orthopedic study which is the people’s view about the human skeletal system.

From time immemorial diseases, ailments, conditions, pain and suffering have been problems of every society and as such, every known society in the world have developed methods of coping with this universal problem by creating their own systems of medicine Caudil (1955). Newell (1975) has rightly stated that, throughout the ages, man has been devising ways and means of caring for the sick in their community.

As aptly pointed out by Tribhuwan and Gambhir (1995), every culture, has its own beliefs and practices regarding health and disease. It is to such beliefs and practices regarding health and disease, which are products of indigenous cultural development and not explicitly derived from the conceptual frame work of modern medicine, that the term “Ethno-medicine” is applied according to Hughes (1968).

Thus, even before the advent of modern medicine, traditional folk, the world over, had developed culture specific beliefs and practices regarding health and disease. This paper unveils the socio-cultural beliefs and practices regarding Osteoporosis among the Gonds and Thakur Tribals of Maharashtra State in India. It is based on empirical enquiry into the ethno-medical and ethno-orthopedic systems of these two tribes. Its prime concern is to show, what tribals perceive, believe and practice about an orthopedic disorder such as Osteoporosis.
Objectives of the Paper

1. To present the scientific and medical interpretation of Osteoporosis.
2. To understand the tribal perceptions of growth and development of the human bones.
3. To unveil the beliefs and practices associated with osteoporosis among the Gonds and Thakurs.
4. To recommend strategies to create awareness among tribals about osteoporosis.

Research Methodology

The present field work was carried out among two major tribes of Maharashtra in India namely the Gonds of Gadchiroli and the Thakurs of Raigad districts respectively. The Gond informants were drawn from two villages of the Armori block of Gadchiroli district namely: Thane gaon and Wadaha gaon. The Thakur respondents were selected from Nagewadi and Khondyachi wadi, two hamlets of the Pathraj village in the Karjat block of Raigad district.

Research Tools and Data Collection

Data was collected and recorded using anthropological tools and techniques. In-depth interviews of key informants from both the tribes, such as patients, family and village elders and the ethno-medical specialists were carefully registered. Participant observation was carried out by participating in rituals of diagnosis, healing and thanksgiving. Thus, qualitative data was gathered by interviewing 50 Thakurs and 50 Gonds. Besides this, in-depth interviews of 5 bone setters, 5 herbalists and 5 midwives were conducted and information gathered from the Gonds as well as the Thakurs respectively. The data was analyzed manually as it was qualitative in nature.

Osteoporosis: The Modern Perspective

According to the Mayo Clinic, Osteoporosis causes bones to become weak and brittle — so brittle that a fall or even mild stresses like bending over or coughing can cause a fracture. Osteoporosis-related fractures most commonly occur in the hip, wrist or spine. Bone is a living tissue, which is constantly being absorbed and replaced. Osteoporosis occurs when the creation of new bone doesn’t keep up with the removal of old bone. Osteoporosis affects men and women of all races. But white and Asian women — especially those who are past menopause — are at highest risk. Medications, healthy diet and weight-bearing exercise can help prevent bone loss or strengthen already weak bones. Osteoporosis is a common disease of the bone characterized by decreased bone mass and bone strength. Loss of bone mass makes the bone porous, fragile and hence more vulnerable to fractures especially at the spine, hip and wrist. In many affected people, bone loss is gradual and without any indications, or warning signs until the disease has advanced. Osteoporosis is also known as “the silent killer’ because a person usually doesn’t know they have the problem until it’s too late.

Based on the findings of Surya (1993), Osteoporosis is by far the commonest metabolic bone disease. It is characterized by a diffuse reduction in the bone density due to decrease in the bone mass. Adams and Hamblen (2001), Maheshwari (1993) and Surya (1993) have outlined the causes of Osteoporosis which are given below:

- Low bone mass density (also known as bone mineral density). For example, men have higher bone density than women. Therefore, women have a higher risk of Osteoporosis than men.
- Several etiological factors may be operative in a given patient. The common triggering factors are: senility in males and post-menopausal age of 45-50 in females.
- Protein deficiency
- Post immobilization as in bed-ridden patients.
- Life style factors like the type of work undertaken.
- Genetic or hereditary factors
- Long term use of medications containing steroids.
- Poor absorption of minerals in the body.
Table 1: Showing the Country Wise Estimated Prevalence of Osteoporosis Versus Population in 2014.

<table>
<thead>
<tr>
<th>Country or Region</th>
<th>Estimated Prevalence</th>
<th>Population in 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>14,549,755</td>
<td>157,446,000</td>
</tr>
<tr>
<td>Bhutan</td>
<td>224,985</td>
<td>754,780</td>
</tr>
<tr>
<td>China</td>
<td>133,704,906</td>
<td>1,366,980,000</td>
</tr>
<tr>
<td>East Timor</td>
<td>104,923</td>
<td>1,212,107</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>705,674</td>
<td>7,234,800</td>
</tr>
<tr>
<td>India</td>
<td>109,639,624</td>
<td>1,263,590,000</td>
</tr>
<tr>
<td>Indonesia</td>
<td>24,546,628</td>
<td>252,164,800</td>
</tr>
<tr>
<td>Japan</td>
<td>13,107,809</td>
<td>127,080,000</td>
</tr>
<tr>
<td>Laos</td>
<td>624,659</td>
<td>6,693,300</td>
</tr>
<tr>
<td>Macau</td>
<td>45,838</td>
<td>631,000</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2,421,432</td>
<td>30,423,500</td>
</tr>
<tr>
<td>Mongolia</td>
<td>283,223</td>
<td>2,986,557</td>
</tr>
<tr>
<td>North Korea</td>
<td>2,336,512</td>
<td>25,027,000</td>
</tr>
<tr>
<td>Pakistan</td>
<td>16,387,858</td>
<td>188,346,000</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>557,970</td>
<td>7,398,500</td>
</tr>
<tr>
<td>Philippines</td>
<td>8,877,821</td>
<td>100,662,800</td>
</tr>
<tr>
<td>Singapore</td>
<td>448,194</td>
<td>5,469,700</td>
</tr>
<tr>
<td>South Korea</td>
<td>4,965,240</td>
<td>50,423,955</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>2,049,061</td>
<td>20,277,597</td>
</tr>
<tr>
<td>Taiwan</td>
<td>2,341,895</td>
<td>23,417,116</td>
</tr>
<tr>
<td>Thailand</td>
<td>6,677,333</td>
<td>64,871,000</td>
</tr>
<tr>
<td>Vietnam</td>
<td>8,509,406</td>
<td>89,708,900</td>
</tr>
</tbody>
</table>

There are many ailments or conditions in Western industrialized societies that were unheard of, or at least very rare, just a century ago. The same situation prevails among non-literate peoples who do not have the “benefits” of the advancement of science and the knowledge we have today. Many scholars tell us that there is a very good reason for this: They eat what nature intended, we don’t. Hippocrates (ca. 460 BC – Ca. 370 BC), the father of modern medicine said, “Let food be thy medicine and medicine be thy food.

Dr. Love (1997) says, Central American Indian women, for example, live for an average of thirty years after menopause but they don’t get Osteoporosis, they don’t lose height, they don’t develop a dowager’s hump which is a curved spine or stooped posture and they don’t get fractures. A research team analyzed their hormone levels and bone density and found that their estrogen levels were no higher than those of white American women – in some cases they were even lower. Bone density tests by a research team showed that bone loss occurred in these women at the same rate as their US counterparts. So why didn’t they suffer fractures? Is it possible that there are multiple causes involved?

Drs. Dawson-Hughes and Harris (2002), of the Calcium and Bone Metabolism Laboratory, Tufts University, Boston, Massachusetts, USA, tested associations between protein intake and change in bone mass density in 342 healthy men and women aged 65 or over who had completed a 3-year, randomized, placebo-controlled trial of calcium and vitamin D supplements. They found that higher protein intake was significantly associated with a favorable 3-years change in total-body bone mass density in the group that took the supplements but this was not the case in the placebo group.
In Papua New Guinea along with plant medicines and traditional therapies for treating physical symptoms, patients and caregivers used rituals that were designed to overcome or ascertain the causes of sickness including mental illnesses, ruptured social relationships, the work of sorcerers, and attacks by ghosts. It is interesting to note that in many areas, women and girls were given significantly less food than men and boys, resulting in a natural weight loss, anemia, Osteoporosis, and greater susceptibility to other illnesses.

Signs and Symptoms

Orthopedic experts have revealed that Osteoporosis conditions can operate silently for decades because the disease doesn’t show any symptoms until a bone fracture occurs. In the early stages of bone loss, one usually has no pain or symptoms. But, once weakened by Osteoporosis, some of the signs and symptoms are as follows:

- Back pain
- Reduction in height
- Stooped posture
- Fracture of the vertebrae, wrist, hip and possibly other bones as well.
- Pain in the neck region
- Pain in the thoracic or chest cavity
- Loss of teeth

Significant Facts about Osteoporosis

- Eighty percent of those affected by Osteoporosis are women.
- One out of three women and one out of eight men over the age of fifty will have an Osteoporosis related fracture in their lifetime.
- Significant risk has been reported in people of all ethnic backgrounds.
- Unfortunately, Osteoporosis strikes individuals in old age.

Risk Factors

Orthopedic experts have revealed a number of factors that can increase the chances of one being affected by Osteoporosis. These factors are listed below:

1. Family history: Osteoporosis runs in families. For that reason, having a parent with the disease, puts you at greater risk, especially if you also have a family history of fractures.
2. Frame size: men and women who have small body frames tend to have higher risk because they have less bone mass to draw from as they age.
3. Tobacco use: According to research scholars, the use of tobacco contributes to weak bones.
4. Estrogen deficiency: Deficiency of estrogen, the female sex hormone, as observed in many female patients after menopause and surgical removal of the ovaries.
5. Eating disorders: Anorexia nervosa, an eating disorder, marked by an extreme fear of becoming overweight, that leads to excessive dieting to the point of serious ill-health and sometimes death; and Bulimia, a condition in which bouts of overeating are followed by under eating, use of laxatives, or self-induced vomiting. It is associated with depression and anxiety about putting on weight. Both these disorders can cause Osteoporosis.
7. Breast cancer: Post menopausal women who have had breast cancer are at risk of Osteoporosis, especially if they were treated with chemotherapy.
8. Low Calcium intake: A lifelong lack of calcium plays a major role in the development of Osteoporosis. Low calcium intake, especially before 30 years of age, contributes to poor bone density, early loss of bone tissue and an increased risk of fractures.

Given the above modern or allopathic perspective of osteoporosis, in contrast the tribal perception of osteoporosis, its signs, symptoms, causes, preventive and curative precautions as viewed by them from an insider’s or emic perspective is indeed worth studying.
Osteoporosis: Tribal Perception

In depth interviews with patients, elderly people, bone setters, midwives and herbalists reveal that both the Gonds and the Thakurs have no clear cut name for the disease, Osteoporosis. The Thakurs refer to the disease to a condition of deteriorating or degeneration of bones. The traditional name for the condition is “hadya ziyane”. The Gonds on the other give no particular name for the ailment but refer to the condition as the weakening of the bones after the age of 45.

Some of the signs and symptoms of the disease as perceived by the Gonds and Thakurs are as follows:

1. Blood of such people become reddish black. It does not have strength (takat).
2. Bones become soft like cotton or wet coconut fiber.
3. People with this condition have less flesh.
4. They complain of joint, muscle, bone and back aches.
5. They eat less.
6. Women who have heavy work load become victims of the disease.
7. They do not work nor walk around in the village.

Etiology of Osteoporosis

Some of the etiological or causal explanations for Osteoporosis by the Thakurs and Gond patients studied, are as follows:

- Wrath of gods and goddesses.
- Witch craft and sorcery.
- Bad luck.
- Breach of cultural taboo.
- Poor growth and development of bones.

Therapy

What comes spiritually must be healed spiritually and hence the role of shamans, bone setters, herbalists and midwives become crucial. Studies by Harner (1973), Schutlur (1976), Lieban (1973), Foster and Anderson (1983), Kurian and Tribhuwan (1990), Tribhuwan and Gambhir (1995), Jain and Tribhuwan (1996) Tribhuwan (1998), have revealed that tribal medical specialist called Bhagats (male) or Bhagteens (female) are looked upon with respect by their community members for their knowledge, medical skills, and for the health services they render.

Depending on the cause perceived the tribal medical practitioners provide a therapy. He or she may combine herbal, mechanical and magico-religious therapies.

Some of the major therapies are listed below:

1. Appeasing the pathogenic agents by offering a chicken as a sacrifice or a Coconut (Cocos nucifera), or “Mauha” liquor (Bassia latifolia) and at times sacrificing a goat.
2. Recommending massage of “Mauha” seed oil, Mustard or “Sarso” oil (Brassica juncea) or “Ghorpad” which is a monitor lizard (Varanus sp.) oil.
3. Recommending the patients to consume a mixture of chicken and wild boar soup and in addition, the chewing on the soft bones. Eating of other non-vegetarian meat is yet another recommendation.
4. Recommending the consumption of “Ghorpad,” the monitor lizard (Varanus sp.) meat along with a body massage with the oil prepared from the fat of the monitor lizard.
5. Consumption of vegetables such as Spinach or “Palak” (Spinacia oleracea), “Chavli Bhajee” (Amaranthus spinosus), Tomatoes (Lycopersicon esculentum), Bottle-gourd or “Dudhi Bhopala” (Lagenaria siceraria), Drum stick (Moringa oleifera), Fenugreek or Methi (Trigonella foenum-graecum) which gives strength to the bones.
6. Consumption of meat of green pigeons to strengthen the bones.
7. Consumption of Papaya (Carica papaya) is believed to reduce bone, joint, body pain and backaches.
8. The Gond tribal bone setters recommend the consumption of the soup made from the boiled hooves and head of goats. They believe that by doing so the bones become strong.

9. The elders of both the tribes stated that the powder of Babul seeds (Acacia nilotica) should be taken with milk or water and the decoction would make the muscles and bones strong and flexible.

10. The Thakur bone setters, herbalists, Shamans and midwives recommended the consumption of Nachni porridge (Eleucine coracana). They believe it makes the muscles and bones strong and also purifies the blood.

Interestingly among the tribal Thakurs as well as the tribal Gonds milk and milk products are not consumed. In fact they do not milk their cows. They believe that by milking the cows, the young calves are deprived of the milk. Both tribes consume tea without milk. Scientifically speaking, milk is rich in calcium and proteins and this could have saved many of the tribal folk from Osteoporosis. It was also observed that the first milk of the weaning mother containing colostrum, that which builds immunity in babies, was not given to the new born babies in both the tribal communities. They believe it is spoilt (Naska) milk. Instead, the new born baby was given honey or brown sugar water for two days after delivery.

The Gonds as well as the Thakurs believe that for nine months and nine days during pregnancy a woman does not menstruate. This “spoilt menstrual blood” which does not come out of the body, mixes with her normal blood. Breast milk is produced from a woman’s blood. Blood gets converted into milk. Now, the menstrual as well as the normal blood gets converted into thick milk, which is the colostrums, “the spoilt milk” (Naska dudh) and hence it is not given to the new born. They believe that it causes diarrhea, and hence it is squeezed out onto a cloth and buried. Tomar, Y.P.S. and Tribhuwan, R. (2007) have reported similar practice among the Mavchi tribals of Nadurbar district in Maharashtra. It is evident from the above facts that tribals have their own perceptions of human physiology and anatomy, which differ to a great extent from that of modern medical science.

**Concept of the Growth and Development of Bones**

Informal interviews with the Thakur and Gond respondents revealed that:

- Rice and Nachani porridge make bones strong.
- Chicken, goat’s meat, green pigeon’s meat, flesh and fat of monitor Lizard, hooves of goats and meat soup contribute in making human bones strong.
- Both the tribes recommend chewing and eating tender goat bones.
- Bones of teenagers and young people between the ages of 20-40 are very strong.
- Bones of old people are weak, their blood is reddish black.
- Degeneration of bones is associated with aging.

**Conclusion**

It is evident from the facts reported in this paper, that the beliefs and practices of the Gonds and Thakurs regarding Osteoporosis are very different from those of modern medicine or allopathy. Gonds and Thakurs are just two of the tribes that were studied by the authors. Maharashtra has 45 tribes and in India there are over 750 tribes. It is necessary to document their belief systems not only regarding Osteoporosis but other orthopedic disorders as well so we will know how to approach them and bring about change in their health and well-being.

**Recommendations**

Given below are few suggestions regarding health education and awareness programmes about Osteoporosis and other orthopedic disorders.

1. Educate the medical and paramedical staff of the Primary Health Centers, Sub-centers and rural Hospitals about this ailment.
2. Educate traditional medical practitioners among the tribes including shamans, bone setters, midwives and herbalists.
3. Conduct camps to identify patients suffering with Osteoporosis in the tribal hamlets.
4. Create awareness in schools and tribal hamlets.
5. Publish booklets and pamphlets with illustrations and diagram to educate them.

References


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Understanding the Causes of Anxiety and Coping Strategies of Student-teachers during Their Internship: A Phenomenological Study

Naltan Lampadan

Abstract

This study was intended to fulfill two purposes: 1) to identify the causes of student-teachers’ anxiety, and 2) to discover the coping strategies they employed during their internship program. The participants of this study were eight student-teachers who did their internship in the 2013-2014 academic year as required by their undergraduate program in education at a faith-based International University. The phenomenological approach was employed to understand their lived experiences in relation to anxiety and coping strategies during their teaching internship. Data were collected through individual meetings, group forums, observations and individual interviews. The study discovered that student-teachers’ anxiety was caused by various factors which can be grouped into three categories: preparation, classroom management and relationship. This study also identified four categories of coping mechanism employed by the student-teachers: adaptation, preparation, attitude and relationship. The findings of this study give cooperating teachers and internship supervisor insight into the experience of the eight student-teachers.

Keywords: Anxiety, Internship, Student-teacher, Cooperating Teacher, Coping Strategies

Introduction

Researchers have pointed out that anxiety has a direct impact on teachers’ performance as well as on the learning environment in the classroom. Wilson (2002) suggested that a limited amount of stress can have a positive impact on motivation and creativity of teachers but excessive pressure can have a negative impact on them. It can lead many teachers to withdraw from the teaching profession (Keavney & Sinclair, 1978). Similarly, Cheung and Hui (2011) discovered that highly anxious student-teachers would not join the teaching workforce after completing their internship. Knowing that anxiety may have a bearing a teachers’ longevity in the workforce, it is important to understand the causes of anxiety of student-teachers at the internship stage. The findings would inform educators and coordinators of internship programs of factors that contribute to anxiety and the possible coping strategies. In this way, student-teachers can be helped and guided so that they have a more positive internship experience.

This qualitative research study uses a phenomenological approach that aims to understand the experience of student-teachers in relation to anxiety. Creswell (2013) stated that a phenomenological study describes the meaning of experiences of each unique individual. The rationale for using a phenomenological approach lies within the belief that student-teachers are free to identify the elements that are related to “anxiety” in their personal experiences.

Literature Review

Thomas (2006) discussed anxiety of teaching as any feelings, beliefs, or behaviors that would impede on the teaching process, whether it may be the preparation, or the actual implementation. Studies have shown that anxiety does not only negatively impact relationship and performance (Keavney & Sinclair, 1978), but also serves as the main cause for teachers leaving the teaching profession (Merc, 2004; Ingersoll & Smith, 2003).
Gardner and Leak (1994) found that approximately eighty-seven percent of the psychology professors in their study had experienced anxiety associated with teaching. While no specific research finding regarding the anxiety of elementary or secondary teachers was found in this study, it is likely that teachers at all levels experience some anxiety. This is purported by Oral (2012), who indicated that teaching anxiety is experienced at any level of teaching including at the internship stage. In fact, new teachers, or pre-service teachers, reported that they experienced anxiety more frequently than experienced teachers (Alasheev & Bykov, 2002). Furthermore, the frequency of anxious instances occurred more when comparing new teachers to those who are experienced. Finally, the anxiety is greater in the first few months of joining the teaching force (Sammephet & Wanpet, 2013).

Having established that anxiety is something that is present in the classroom, it becomes imperative for causes to be identified, as a means to mitigate and regulate anxiety. One major cause of anxiety reported by both new and experienced teachers is classroom management (Goyette, Dore & Dion, 2000; Ingersoll and Smith, 2003). Another cause for anxiety is the sense of inadequacy among teachers who were non-native speakers of English and had to use English as a medium of instruction (Merc, 2004; Numrich, 1996; Horwitz, Tallon & Luo, 2009). A similar finding was made by Takahashi (2014), who observed that anxiety increased due to teachers’ insufficient English language abilities. Similarly, Klanrit and Sroinam (2012) found that non-English speaking teachers experienced anxiety when teaching English in a classroom.

Fortunately, many studies have shown that teachers are capable of regulating these anxieties by employing certain strategies. Coping strategies are mechanisms employed by teachers, or student-teachers to help them become or maintain calm and to gain confidence while teaching. Sammephet and Wanpet (2013) found that teachers employed several techniques to cope with anxiety such as positive thinking, self-talking and calming down. Bress (2006) made similar findings which include controlling personality, behavior, attitudes, and thought in order to generate contentment in classrooms. In addition, “let-it-be” strategy was one of the techniques employed to remain calm. Furthermore, being accepting of situations also allows anxiousness to go away slowly (Bawcom, 2005). Another way of mitigating anxiety is to reflect upon incidents which incurred anxiety and strategize possible coping mechanisms (Schon, 1983).

Nonetheless, the experiencing of anxiety and the coping of anxiety should not be an experience held by student-teachers themselves. Management of anxiety should come from administrators or supervisors as well. These stakeholders can intervene and ensure that the teachers, or pre-service teachers, have a positive mindset so as to ensure a continuity in teaching practice (Norris, Larke, & Briers, 1990). This is echoed by Martin and Yoder (2000), who maintained that a student-teacher’s success during their teaching practice was dependent on the supervisory climate. Having a supervisor allows student-teachers to communicate issues which may arise in their initial venture into teaching. Nevertheless, student-teachers who find it difficult to openly and freely communicate with their cooperating teachers could cause them to be anxious (DeMoulin, 1993). Student-teachers strongly believe that they must choose the right cooperating teachers who they are comfortable with and share a similar teaching philosophy. This may be considered as a type of coping strategy, since if the student-teacher and supervisor have conflicting perspectives on teaching, the pre-service period of the student-teacher may not go smoothly (Montgomery, 2000).

There are other types of coping strategies, as mentioned by Costa and Kallick (2000), such as self reflection, which may enable student-teachers to construct meaning from their work in the classroom and encourage growth and confidence. In addition, student-teachers need to remind themselves to be positive in any situation they may find themselves in.

**Research Scope**

Given the probability that these pre-service teachers will experience some level of anxiety, the purpose of this study is to then examine and explore incidents of anxiety prevalent in the teaching experiences. Since this study takes a phenomenological stance, the leading concern that will guide the interview will be the instances of anxiety throughout the teaching experiences. The semi-structure interview session was conducted and these questions were posed:

*The leading research questions were:*

1. What were the causes of anxiety during your internship?
2. How do you cope with the anxiety?
3. Supporting Interview Questions were:
4. Describe in general your days during your teaching practice.
5. Can you describe a situation which made you feel anxious during your teaching practice?
6. What other factors contributed to your anxiety?
7. What other challenges did you face during your teaching practice?
8. How did these challenges affect you?
9. Based on your experience, how did you cope with your anxiety? What strategies did you employ in coping with your anxiety?
10. If you are to advise the future student-teachers, what is your advice to them?

Sample and Research Methodology

Sample and Data Collection

Eight student-teachers from the Faculty of Education and Psychology at a faith-based International University, Central Thailand, participated in the study: five from Myanmar, two from Malaysia and one from Sri Lanka. They were all in the final year of their four-year study. The researcher assured the participants of the anonymity of their participation.

Since the purpose of this study is to understand the causes of anxiety among student-teachers and to discover the coping strategies that student-teachers employed during their internship, a qualitative method is used. Experience is a vital source of data for this study. Bogdan and Biklen (1992) proposed that everything in the world is significant and it should be understood. Furthermore, experiences have the potential of enhancing the understanding of a subject under study. Since this study is interested in the experiences of student-teachers as a means to tap into factors which may cause anxiety, a phenomenological approach is chosen. According to Leedy (1997), phenomenology seeks to understand persons’ perspectives with regards to experiences garnered from an event or even an emotion. An approach that is typical in phenomenological studies is by interviewing the subjects to collect their narratives (Creswell, 2013).

Experiences of student-teachers were collected via group forums, classroom observations and individual meeting. At these appointments, open-ended interview was conducted with each sample. Furthermore, to triangulate the findings, multiple approaches were utilized to collect data (Creswell, 2013). Using different tools to yield data also gave extensive time to be invested in the field, allowed enough time to compile detailed thick descriptions of experiences, and fostered professional trusting relationship between the researcher and the participants of the study. In order to develop a degree of trusting relationship between the participants and the researcher, the researcher openly shared and discussed the purpose of the research with the student teachers. By giving them enough information about the research, they have a sense of ownership of the findings. They understood that their experiences have a direct impact on the teaching internship program. They also learned that their input can potentially improve the quality of the internship.

In short, the data collection and triangulation were conducted in the following steps:

1. Teaching observation (general observation)
2. Individual meeting (general discussion)
3. Group meeting (general discussion)
4. Interview - main data collection (open-ended questions)

Data analysis

The researcher employed a thematic approach in analyzing the data. Thematic analysis was used to identify regularities or patterns among categories (Shank, 2006). This analysis involved examining and identifying themes within the data that were important to the description of the causes of anxiety and coping strategies. Furthermore, to enhance credibility and transferability of this research, two people familiar with qualitative research were requested to review the research study. Creswell (2013) stated that peer review, or a critical other, is crucial and it must be in place in order to keep the researcher honest. Creswell (2010) also stated that participants’ checking is an essential part of the process of trustworthiness of research study. He suggested that researchers allow the participants or any individuals closely related to the study, to have the opportunity to assess the accuracy of the data and interpretations of the data.
The researcher reported the research findings to the participants and asked for their feedback before the dissemination of the research findings. Lastly, based on the feedback received from the participants, the researcher revisited the data to confirm his analysis and interpretation.

The data were analyzed and grouped carefully. Subgroups were assigned under the three categories of the causes of anxiety as well as under the coping strategies of student-teachers. The following are the main categories that were discovered in this study:

A. Causes of Anxiety
   1. Teaching Preparation
   2. Classroom Management
   3. Cooperating Teachers

B. Coping Strategies
   1. Adaptation
   2. Preparation
   3. Attitude
   4. Relationship

Findings and Interpretation

A number of factors contributed to student-teachers’ anxiety. They were grouped into three categories in order to understand the pattern of the causes of anxiety experienced by the eight student-teachers.

Causes of anxiety identified among the student teachers

The student-teachers’ perceptions of sources of anxiety in internship varied from individual to individual. When asked to describe their normal teaching days, one student-teacher said, “Nothing much, just nervousness every time I was teaching.” Another student-teacher explained, “Overall it is okay. My days are quite busy with preparation for teaching such as preparing lesson plan and teaching materials and finding resources.” Another student-teacher admitted, “Sometimes I got so nervous and cannot focus with my teaching. I have less sleep and worry too much.

Category 1: Preparation

Language Proficiency

English language proficiency seemed to be a common source of anxiety among the student-teachers, particularly among those whose English is not their home language. The investigation showed that they were concerned about their English language competence especially in the area of grammatical correctness and pronunciation. The following are excerpts from the interview.

Extract 1: “…………….. I am well aware that my language is not good enough, I mean when speaking Standard English. I am Ok with the content of the lesson but I always worry about my ability to speak well to the students.”

Extract 2: “The kids learn and know better than me because they are in an international school and use a lot of English.”

Extract 3: “I also sometimes become anxious about my ability to speak in front of the students. English is not my first language. I sometimes pronounce the words wrongly and there are terminologies that I need to learn.”

Teaching planning

Planning and preparing for instruction is the best way to ensure that lesson is implemented well. Student-teachers acknowledged the importance of good preparation. However, since the student-teachers were new to the process of preparing lesson plan and locating materials and resources, they spent huge
amount of time to do these. This increased the student-teachers’ level of anxiety. Two student-teachers said:

**Extract 4:** “Making lesson plan and redoing it over and over is stressing.”

**Extract 5:** “I spend a lot of time preparing my lesson plan and I need to do so many research and read so many things while I am doing my lesson plan, it is so much work…………….”

**Teaching Performance**

Student-teachers were concerned about selecting the best teaching strategies for their teaching. They indicated that they needed time to learn to use effective techniques in teaching. One student-teacher said:

**Extract 6:** “I’m teaching in K2 about the rhyming words, but no one got it. Even the classroom teacher also said that she hasn’t done it before, so that made me so upset.” I feel nervous and starting to repeating it over and over again.

**Category 2: Classroom Management**

The student-teachers described classroom management as the act of managing their classroom to ensure that distracting situations were avoided and that students’ behaviors were controlled. Since the nature of activities in the classroom environment was unpredictable, student-teachers shared a common frustration.

**Classroom Order**

Some student-teachers felt very comfortable executing classroom rules but some expressed their concern about classroom management. They felt frustrated when they discovered that what they learned about classroom management in class may not always work in an actual classroom setting, as shown in the following extracts.

**Extract 7:** “I am not confidence with my classroom management. It is hard to control the kids most of the time.”

**Extract 8:** “There are some factors that can contribute to my anxiety, managing students’ behavior in the classroom. I learn from the courses I took but sometimes there are not always relevant.”

**Self-Confidence**

Student-teachers felt that since they were not the main teachers of the class, the sense of authority in implementing the teaching plan and disciplining students was not fully realized. The following are some concerns regarding their lack of self-confidence.

**Extract 9:** “I am afraid that the students would say negative things about me.”

**Extract 10:** “I want to look like a real teacher but students do not see me, only as a student teacher.”

**Extract 11:** “I feel that a few student look at me like I’m not a teacher.”

**Extract 12:** “…. sometimes they are nice and sometime they misbehaved. When they so quiet sometime I ask myself “maybe there is something wrong with me”.”

**Category 3: Cooperating Teachers**

Student-teachers suggested that in order to have a successful and meaningful teaching experience, they need to have a sound working relationship with their cooperating teachers. Cooperating teachers were in an excellent position to provide personal direction to the student-teachers. Student-teachers expressed that the first few weeks of their classroom experience were always difficult.

**Communication**

Student-teachers’ inability to openly and freely communicate with their cooperating teachers has caused
them a lot of anxious moments. One student-teacher regretted that she was not brave enough to talk and share her struggles with her cooperating teachers. Two student-teachers said:

**Extract 13:** “Sometimes I got so nervous and cannot focus with my teaching. I have less sleep and worry too much. I become shy and try to solve the problem on my own. I wish I have the courage to share my problem with my cooperating teacher.”

**Extract 14:** “I worried about what the advisor thinking about me.”

**Expectation**

The student-teachers admitted that their anxiety increased when they cannot meet their cooperating teachers’ expectation. Two of them said:

**Extract 15:** “I’m doing something but it is not accepted. Sometimes the teacher said it to me, “ok you can”,” for science or math class, let them observe more and do more research.”

**Extract 16:** “I feel upset because I feel I’m not being able to teach and the teacher was there looking at me too.……… I feel guilty because I did not do well in that part and it caused me uncomfortable feeling.”

**Possible Coping Strategies**

Student-teachers revealed that they experienced many challenges that caused anxiety during their internship. The following were strategies employed by the student-teachers in overcoming challenges during internship.

**Category 1: Adaptation**

Interruptions and disruptions are the norm in classroom setting. Therefore, a flexible attitude is really important to take control of various situations. Student-teachers felt that they needed to be flexible and open for change. They discovered that they had so much to learn because teaching in a classroom setting was different from what they had prepared for.

**Adapting to Change**

Student-teachers wished that they had learned to adapt to situation quickly. Being able to adapt to change would speed up the adjustment period. One student-teacher said:

**Extract 17:** “I changed according to the situation. I don’t think that taking internship is stressful, and if I think I can’t do something, I do not hide it. I need to be open with other and ask for help.”

**Being Reflective**

Student-teachers learned to be more reflective when they encountered challenges during their teaching practice. They engaged in a process of reflection to formulate new strategies and improve the situations. Two of them said:

**Extract 18:** “I do my reflection because I may forget what had happen on that day.”

**Extract 19:** “I tried to be attentive to everything that happens in the classroom.”

**Category 2: Preparation**

Student-teachers discovered through their experience that preparation was a crucial key to reduce anxiety. They learned that their anxiety increased when they were not prepared well.
Making Holistic Preparation

The student-teachers learned that holistic preparation was an important key to face challenges. One student-teacher said:

**Extract 20:** “Prepare yourselves, mentally, spiritually, physically and emotionally, because many things will happen in the class. In my class sometimes students will vomit and poop or what, you need all of your strength to try to and not just teaching.”

Being Well Prepared for Class

All the student-teachers agreed that seeking guidance from their cooperating teachers was important. The following extract is an evidence of the importance of being prepared.

**Extract 21:** “I felt more confident when I am prepared for the class. I prepared by talking to the homeroom teacher and getting some advice from her, preparing and knowing the content and materials well, getting feedback from the homeroom teacher and implementing those changes.”

Category 3: Attitude

Thinking Positively

The student-teachers realized that they could be in any unexpected situation and that they needed to stay positive. They understood that those challenging experiences were there to teach them.

**Extract 22:** “I helped my classroom advisor as much as I can do without complaining. I have to understand that the classroom advisor has a lot of work and need of help. Listen to the teacher rather than feeling unwanted.”

**Extract 23:** “For higher grade, you must think then you can teach them, especially about language. Because many student teacher have problem about their English language when they going to teach in international school.”

Category 4: Relationship

The relationships between student-teachers and cooperating teachers varied, complicated and delicate. As the trust relationship developed, the student-teachers experienced greater sense of belonging and acceptance.

Developing Good Relationship with Cooperating Teachers

Cooperating teachers are often very influential in the development of student-teachers as they have the most contact and communication with the student-teachers. Student teachers viewed collaboration with the cooperating teachers as a positive way to increase their confidence and effectiveness in the classroom. Despite that, it may take time to build relationships and foster mutual understanding. One student-teacher pointed that in order to be successful, the student-teachers must choose the right cooperating teacher. The extracts below exemplify the claim.

**Extract 24:** “It takes time to get to know the cooperating teachers but she usually help me to get through the teaching practice.”

**Extract 25:** “I’m not thinking to give up because I know the teacher will support me. The teacher is open with me and also I realize that we have the same mind about the school.”

**Extract 26:** “If you can, choose a good homeroom teacher.”

**Extract 27:** “It took time to get to know my homeroom teachers but I had a good relationship with the homeroom teacher and I showed that I enjoyed working with her.

**Extract 28:** “get to know your classroom teacher during the preparation week.”
Developing Positive Relationship with Student

Student-teachers discovered that a positive relationship with their students is important to foster positive learning experiences in the classroom.

Extract 29: “I put them into groups, going to student personally, and then try to have conversation and build a relationship with them. 90% work.”

Extract 30: “I loved my students.”

Findings of the Study

Table 1 shows the number of student-teachers who experienced different types of anxiety. Almost all student-teachers experienced anxiety from various factors. The result shows almost all of the student-teachers were anxious when preparing for their lesson. Language level of proficiency and classroom management were the next common causes of anxiety for this particular sample. This is followed by communication with cooperating teachers, cooperating teachers’ expectation for student-teachers, and teaching performance. There were at least four student-teachers who cited lack of confidence as a cause of anxiety.

Table 1: Causes of Anxiety Experienced by Student-teachers

<table>
<thead>
<tr>
<th>Causes of Anxiety</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Proficiency</td>
<td>8</td>
</tr>
<tr>
<td>Teaching Planning</td>
<td>7</td>
</tr>
<tr>
<td>Teaching Performance</td>
<td>6</td>
</tr>
<tr>
<td>Classroom Order</td>
<td>5</td>
</tr>
<tr>
<td>Self Confidence</td>
<td>4</td>
</tr>
<tr>
<td>Communication</td>
<td>5</td>
</tr>
<tr>
<td>Expectation</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 2 indicates various coping strategies that student-teachers had employed and recommended. Adapting to change and lesson plan preparation were the highest coping strategies identified among them. Holistic preparation, positive thinking and good relationship with cooperating teachers were effective strategies to decrease anxiety. Having a positive relationship with their students in the class enhanced a positive teaching experience among the student-teachers. Student-teachers also experienced that being reflective and responsible with their assigned tasks can decrease the possibility of becoming over anxious.
Table 2: Coping strategies that student teachers had employed and recommended.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapting to Change</td>
<td>8</td>
</tr>
<tr>
<td>Being Reflective</td>
<td>7</td>
</tr>
<tr>
<td>Making Holistic Preparation</td>
<td>6</td>
</tr>
<tr>
<td>Being Well Prepared for Lesson</td>
<td>7</td>
</tr>
<tr>
<td>Thinking Positively</td>
<td>6</td>
</tr>
<tr>
<td>Developing Good Relations with Cooperating Teacher</td>
<td>6</td>
</tr>
<tr>
<td>Developing Positive Relations with Students</td>
<td>5</td>
</tr>
</tbody>
</table>

Discussion

The lack of English language proficiency was identified as one of the causes of anxiety among the student-teachers during their teaching internship especially for the student-teachers who spoke English as their second language or foreign language. This finding concurs with that of the literature whereby a sense of inadequacy among student-teachers may be a cause for anxiety, especially among non-native speakers of English who are teaching in English (Merc, 2004; Numrich, 1996). This finding also confirms the finding that was made by Takahashi (2014) that anxiety increases when teachers have insufficient English language abilities.

One possible measure to mitigate anxiety in situations where students need to use a second language to teach is to allow these student-teachers more opportunities to develop their speaking and teaching confidence by engaging in more microteaching in an authentic setting. In addition to that, student-teachers need to learn to prepare lesson plans and teaching materials so they could increase their level of confidence in using English in the classroom.

Another point worth noting is that student-teachers indicated that their anxiety increased when they were not prepared well for the class. Moreover, being in a new school environment and working with a new curriculum were stressful to them. They had to adapt to lesson plan formats which may vary from what they have learned. This finding agrees with the previous studies that indicate new teachers experience anxiety more frequently than experienced teachers (Sammpeth & Wanpet, 2013). The student-teachers themselves suggested a number of coping strategies regarding the preparation of lesson plan: 1) to prepare ahead of time. 2) To communicate with the cooperating teacher to ensure the accuracy of lesson plans.

Another source of anxiety is the failure to implement and/or execute classroom rules that have been set. Lack of self-confidence and experience had been identified as the causes of classroom management anxiety. As such, student-teachers struggled to apply the theoretical and principles of classroom management they have learned in a real classroom setting. To mitigate this anxiety, student-teachers indicated that positive communication with the cooperating teachers should be developed to enhance their confidence in executing and implementing classroom management techniques. Student-teachers also learned that developing good relationship with students is crucial in enhancing their confidence. However, students took time to accept them as a teacher-in-charge in the classroom.

Student-teachers had also found that they need to adapt to new environment. They need to be able to remain calm and believe that they have the capability to teach and help the students in the classroom. Furthermore, they realize that they need to spend time to self-reflect upon the classes they have taught. This is a vital finding as previous studies have suggested that constructing meaning through reflection was found to increase growth and confidence (Costa & Kallick, 2000). In such, teacher education programs can add a reflection component to the internship by providing student-teachers the opportunity to reflect on their teaching behavior. In this way, student-teachers have the chance to evaluate their teaching and develop their
confidence in decision making. When they reflect on their teaching experiences, they have the opportunity to identify what is significant in their classroom experiences. In this way, it decreased their levels of anxiety when they look at their teaching in perspective.

Finally, another measure to decrease levels of anxiety is to establish a conducive rapport with other co-teachers. Cooperating teachers are often the most influential keys in the development of student-teachers. As studies have indicated (Norris, Larke, & Briers, 1990; Yoder, 2000), it is found that supervisors and cooperating teachers leave an impact on how student-teachers perceive teaching practice, which, in turn, may influence a student-teacher’s decision to remain within the profession in the future. Furthermore, various coping strategies had been identified regarding the relationship between student-teachers and their cooperating teachers. Collaboration with the cooperating teachers could increase student-teachers’ confidence and effectiveness in the classroom, similar to other studies where student-teachers and their supervisors or co-teachers maintain a positive and harmonious relationship (DeMoulin, 1993; Montgomery, 2000).

Limitations

Although the findings cannot be generalized, the study has helped the researcher to understand the causes of student-teachers’ anxiety during their internship and identified coping strategies that could be helpful to student-teachers in dealing with internship anxiety.

There are several limitations of this study. First, only eight student-teachers participated in this study. In the future, a similar research should aim for more participants until saturation point is reached. Second, the majority of the student-teachers came from non-English speaking background. They may have not been able to express themselves fully due to their language limitation.

Conclusion

In conclusion, the findings have revealed various types of anxieties and an array of coping strategies pertinent to the context of this study. The discovery of the causes of anxiety would allow teaching internship coordinators, internship supervisor, curriculum coordinators as well as the advisors of the student-teachers to make better decisions and guidance in preparing student-teachers for internship and give better support to student-teachers. Future student-teachers also will be benefited from this study as they are more aware of possible challenges they may encounter during their teaching internship.

References


Takahashi, H., (2014). Non-native English-speaking teachers’ self-perceived language proficiency levels, anxieties, and learning strategies. International Journal of Christianity and English Language Teaching, 1, 24-44. ISSN 2334-1866


About the Author

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APPENDIX A

Consent Form

I………………………………………agree to participate in the research study “Understanding the causes of anxiety and coping strategies of student-teachers during internship: Phenomenological Study.

1.1.1 The purpose and nature of the study has been explained to me in writing.

1.1.2 I am participating voluntarily.

1.1.3 I give permission for my interview with [name] to be tape-recorded

1.1.4 I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.

1.1.5 I understand that anonymity will be ensured in the write-up by disguising my identity.

1.1.6 I understand that disguised extracts from my interview may be quoted in the thesis and any subsequent publications if I give permission below:

1.1.7 Please tick one of boxes:

( ) I agree to quotation/publication of extracts from my interview
( ) I do not agree to quotation/publication of extracts from my interview

Signed…………………………………….   Date……………….
Determining the Effectiveness of Three Teaching Methods for Blood Pressure Measurement Skills

Poomarin Intachai

Abstract

The purpose of this study was to examine the effectiveness of the following three methods for teaching blood pressure measurement: 1) lecture, 2) demonstration and 3) self study using video, and to measure the effect of each method on acquired knowledge, skill performance and learning satisfaction of the nursing students at Asia-Pacific International University. The participants of this study were 90 undergraduate nursing students who had never taken the fundamental of nursing courses, in which they were assigned to one of three groups by cluster randomization. This experimental study used a Cognitive learning theory as a conceptual framework ANOVA was used to determine any statistical significance of knowledge, skill performance and satisfaction after three teaching methods were applied. There was no significant difference between the three teaching methods, though the lab demonstration produced the highest satisfaction score among the three. Nonetheless, a further study with a larger group of students may yield different results.

Keywords: Teaching effectiveness, Teaching methods, Blood pressure measurement skills

Introduction

Teaching today is a complex process which requires the highest forms of professional practice (Hoban, 2002). In Thailand, it was found through the first external evaluation by the Office of National Education Standards and Quality Assessment (ONESQA) that only nineteen percent of schools were able to pass their evaluation at the good level and only half of the teachers could pass the standard of teaching and learning, even though almost all of the teachers were qualified (Anukulboot, 2004).

Acknowledging that teaching requires meticulous preparation to appropriately equip students, this study aims to explore suitable teaching methods used in nursing education. This field is a high-risk one in that lives of patients are at stake. The study of methods and approaches for teaching in nursing education is very relevant to clinical nursing practicums. Prior to actual practice in the ward on patients, nursing students must know how to give nursing care correctly and appropriately, and have to practice to increase their clinical skill performance in both the laboratory and hospital setting. For undergraduate nursing students, clinical practice makes up 55-60 percent of the total credits (Eiamla-or, 2004). One of the required nursing subjects is Fundamental of Nursing, a very important foundation subject, which aims to teach many clinical skills to the students. In order to prepare them for authentic setting, nursing educators should identify teaching methods which are the most appropriate for nursing students to enhance and apply the knowledge to practice appropriately.

Purpose of the Study

Measuring a person’s blood pressure is one of the basic skills that nurses, and other medical practitioners need to know. In the teaching of measuring a patient’s blood pressure, a nurse educator may choose various method for the purpose of teaching and demonstration. This serves as the foundation of the study, whereby three teaching methods: 1) lecture, 2) demonstration, and 3) self study using video, are used and its
effectiveness is determined by evaluating the acquired level of knowledge, skills, and satisfaction. This three constructs are aspects which operationalizes ‘effectiveness’ within the parameters of this study.

**Research Scope**

There are three research questions this study seeks to answer. First is to determine the relative effectiveness of lecture, demonstration, and self study using video for knowledge improvement. Second is to determine the relative effectiveness of lecture, demonstration, and self study using video for skill improvement. Finally, this study also seeks to determine any significant correlation between effectiveness of lecture, demonstration, and self study using video to improve satisfaction of learning how to take blood pressure measurement.

**Literature Review**

**Teaching Effectiveness**

One way to enhance nursing education is to evaluate the effectiveness of teaching methods in nursing education programs and implement the best methods. Assessment of teaching effectiveness in nurse preparation programs includes determining effective teaching skills, teachers’ and students’ beliefs about the teaching and learning process, criteria for assessing teaching effectiveness, people responsible for evaluating the various aspects of teaching, and other important elements for guiding the assessment of effective teaching in nursing education. Identifying these components is necessary for educators to improve their teaching, and, ultimately, for helping aspiring nurses acquire the satisfaction, skills, and knowledge that are needed in nursing practice.

There are many teaching approaches that a nursing educator can choose from, from traditional oral or lecture approaches with the aid of technology, to hands-on activities. The pedagogical choice needs to be an informed, though, as teachers, is partly accountable for the students’ learning. Many studies have sought to determine whether an approach is appropriate.

Today’s world has seen an influx of classroom technological aims. In line with today’s technological advancement, studies on the efficacy of incorporating technology in the nursing class have been conducted. Cogo et al. (2007) in Brazil developed digital learning objects in nursing, and ten faculty and forty-four undergraduate nursing students evaluated their usage. The study found that the teachers and students were satisfied with the design of visual presentation and the content appropriateness of the digital learning objects. Computer technologies and visual presentation seem to encourage students to be more active both in the lecture and laboratory settings. Similarly, Cindy (2000) surveyed the use of videotape programs in classroom instruction by faculty members of the University of Kentucky Community College System (UKCCS). Fifty-two percent of faculty members from fifteen UKCCS campuses responded to the survey. The study found that most faculty members use video occasionally to show visual examples of the teaching topics and to stimulate classroom discussion, and the instructors in the humanities use video to enrich student understanding of literary works and history and focus on active learning activities. The relationship between teaching styles and how instructors used video in the classroom had a positive correlation. This suggests that technology could stimulate and motivate students to have an active part in the classroom. Another study which may concur with these findings is that of Salyers’ (2007) where a skills laboratory course was developed using a web-enhanced approach and two teaching methods were compared. The study evaluated skill performance and found that the group who learned course content by using a web-enhanced approach performed better on the final cognitive examination than the group who attended weekly lectures, observed skill demonstration by faculty, and practiced skills.

Nonetheless, the use of technological aid in the nursing classroom is not necessarily a direct cause for the successful learning of a nursing concept. Powell, Canterbury & McCoy (1998), from the University of Mississippi) studied the differences in baccalaureate nursing students’ ability to accurately administer medication. Nursing students were taught using a faculty-assisted (control group) method versus a self-directed (experimental group) method. Students (n = 50) in the control group received faculty instruction on medication administration during the laboratory practice while students (n = 48) in the experimental group viewed a faculty-generated videotape on medication administration prior to laboratory practice. The result of this study showed no significant difference (p < .05) between the two groups. Perhaps this begs the question of whether or not technological aid is really necessary to improve or increase the efficacy of
teaching approaches. This assumption is pertinent to Wellard, Woolf and Gleeson’s (2007) study, where they discovered that lectures in the laboratory led to better acute care in other areas of practice. The study also showed a need for rigorous investigation of teaching methods to support nursing students in preparation for clinical practice. In teaching undergraduate students, teachers should examine their practices to ensure that a theoretical basis is present when teaching in laboratory, clinical, and classroom settings. Moreover, as observed from relevant studies, educational innovation may increase teaching and learning effectiveness. Being effective also increases motivation among students, and it makes learning more enjoyable.

Theoretical framework

Cognitive Learning Theory

The theoretical framework that underpins this study is Cognitive learning theory. This theory is the cornerstone for the analysis of the study in which it helps in measuring the effectiveness of the teaching methods for blood pressure measurement skills.

Cognitive theory defines learning as an active, cumulative, constructive process that can be indicated from behavioral indices (Shuell, 1986). In the early 1900s, Gestalt psychologists initially focused on the cognitive aspects of learning, and they believed that people respond to a whole situation or pattern rather than parts (Shuell, 1986). Dembo (1988) studied that when a person’s perception is disorganized, order is restored by restructuring problems into a better gestalt (pattern); the restructuring may occur through a process of trial and error. Cognitive psychology was developed to explain particular aspects of learning behavior and seeks factors that explain complex learning which are concerned with meaning rather than behavior. The specific focus is on mental processes including perception, thinking, knowledge representation, and memory with emphasis on understanding and acquisition of knowledge and not merely on acquiring a new behavior or learning how to perform a task. Students have active rather than passive roles in the instruction and a new responsibility for learning. They must discover meaning by using information-processing, memories, attention and motivational mechanisms to organize and understand meaning. (Billings & Halstead, 2005). The outcomes include more understanding and acquisition of knowledge.

The cognitive learning theory is appropriate for this study because the current nursing curriculum at locality where the sample is found, namely Asia-Pacific International University emphasizes the whole rather than the parts which is similar to the concept of this theory.

Blood pressure measurement is a basic clinical procedure that nursing students need to study and know how to apply correctly. Blood pressure measurement results can detect a patient’s conditions such as internal hemorrhage, shock, and other blood vessel or circulation problems. To teach blood pressure measurement skill and knowledge, an effective teaching method with cognitive learning theory is deemed suitable.

Figure 1. Theoretical Framework

![Theoretical Framework Diagram]
Research Methodology

Participants

The participants for this study were undergraduate nursing students at Asia-Pacific International University (AIU). Some nursing students were excluded, though. These include students who had been nursing assistants or had experience in blood pressure measurement in health care institutions and students previously registered in the fundamental of nursing course. The sample size needed for this study was 90 students ($n = 90$). The nursing students were divided into three experimental groups based on their entrance examination scores ($A=85-100\%$; $B=75-84\%$; and $C<75\%$). They were randomly assigned to each group consisting of 30 students, which included 9 students from grade A, grade B, and 9 from grade C.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (85-100%)</td>
<td>27</td>
<td>30%</td>
</tr>
<tr>
<td>B (75-84%)</td>
<td>36</td>
<td>40%</td>
</tr>
<tr>
<td>C (&lt;75%)</td>
<td>27</td>
<td>30%</td>
</tr>
</tbody>
</table>

Measurement

This study used an experimental design that included both pretest and post test. Pretest-post test of knowledge and skill performance were done to compare the effectiveness of the three teaching methods: 1) lecture, 2) demonstration and 3) self-study using video. The satisfaction of learning to take blood pressure measurement was analyzed only in posttest.

The knowledge tool for measuring blood pressure was 20 multiple question items and short answer which included stem and 4 choices with one correct answer and three hints (Patiyatanee, 1998). The tool used to measure the skill performance for measuring blood pressure was a nursing skill performance checklist of the blood pressure taking steps which was developed by five nursing faculty and consisted of 10 items with a yes and no answer. The students were examined by the researcher and two nursing faculty. The faculty received instruction and information about the research study before testing the students (Patiyatanee, 1998). The students’ satisfaction in this study was measured by using the Visual Analog Scale (Maxwell, 1978) which was determined along a 10-cm line, with 1 signifying very unsatisfied and 10 signifying very satisfied.

Procedures

The researcher explained the purpose of the study and provided opportunity for the students to ask questions. The participants signed an informed consent form and were identified by a number. Students in each group had a pretest on knowledge and skill performance of blood pressure measurement. One group was lectured in the classroom about taking blood pressure measurements and the second group received a demonstration of how to take the blood pressure measurements in the laboratory setting. The third group received a video CD on how to take the blood pressure measurements for self-study. These three teaching methods were done in 30 minutes.

Analytical strategies

Descriptive statistics which included mean, variability, standard deviation, and frequency distribution. ANOVA was used to determine the significance of differences between knowledge and skill performance and the significance of satisfaction after the three teaching methods were utilized. The results were statistically significant if the $p$ value is 0.05 (Munro, 2005).

Results and Discussion

Results indicated that the mean score of knowledge ($X = 1.867$) and skill performance ($X=71.133$) were highest in lecture. The satisfaction scores are higher for demonstration and video compared to the lecture.
Table 2. Comparison of knowledge, skill performance, and satisfaction of the three teaching methods.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Lecture</th>
<th></th>
<th>Demonstration</th>
<th></th>
<th>Video</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>S.D.</td>
<td>X</td>
<td>S.D.</td>
<td>X</td>
<td>S.D.</td>
</tr>
<tr>
<td>Knowledge</td>
<td>1.867</td>
<td>2.460</td>
<td>1.233</td>
<td>2.012</td>
<td>1.500</td>
<td>2.162</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>7.493</td>
<td>1.440</td>
<td>8.900</td>
<td>1.517</td>
<td>8.100</td>
<td>1.561</td>
</tr>
</tbody>
</table>

As shown in Table 2, the mean knowledge and skill performance score were highest in lecture. The satisfaction scores are higher for demonstration and video than for the lecture.

Table 3. One way ANOVA for knowledge, skill performance, and satisfaction.

<table>
<thead>
<tr>
<th>ANOVA</th>
<th>Knowledge</th>
<th>Skill performance</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Df</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>0.62</td>
<td>0.22</td>
<td>2.73</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.541</td>
<td>0.806</td>
<td>0.071</td>
</tr>
</tbody>
</table>

As shown in Table 3, there was no significant difference in knowledge at Sig 0.54 between the three methods of teaching blood pressure measurements and no significant difference in skill performance at Sig 0.81 between the three methods. The ANOVA statistical analysis that there was no significant difference in student satisfaction at 0.07 between the three methods of teaching.

Even though the difference is not significant, it appears that the lecture teaching method has a greater effect on knowledge and skill performance compared to the demonstration and self-study video methods among the sample. Student satisfaction of learning how to take blood pressure is higher for the demonstration method. Powell et al. (1998) also found no significant difference between two different methods of instruction — nursing students who received faculty instruction on medication administration during the laboratory practice and nursing students who viewed a faculty-generated videotape on medication administration prior to laboratory practice. If a larger group were studied it would be interesting to study if there were a difference between the A, B, and C students with different teaching methods.

Conclusion

It appears that with this sample, the lecture and demonstration methods can be used to increase the knowledge and skill performance and the self-study by using video can give learners an opportunity to review and repeat the procedure as much as they need. It is necessary to determine which teaching method is the most beneficial for various types of learners and to use various methods of teaching to become a more effective teacher.

References


About the Author

Poomarin Intachai is a lecturer in Mission Faculty of Nursing, Asia Pacific International University, Thailand.
Factors Affecting the Work Performance of Employees in Seventh-day Adventist Higher Education Institution in Thailand

Samorn Namkote

Abstract

This research presents the factors affecting the work performance of employees in Seventh-day Adventist Higher Education Institution in Thailand. The data analysis involves the demographic data and participants’ satisfaction toward factors affecting the work performance of employees in the institution by answering a questionnaire. There were 145 participants and the data is collected by using questionnaires. Statistical analyses were percentage, mean, standard deviation, t-test, One-Way ANOVA. To compare all pairwise differences, Fisher’s LSD was utilized at the statistical significance level of 0.05. The result revealed only 7 factors that affect the work performance of the sample. Overall, the employees were unsure if they were satisfied. However, if their demographic characteristics were different, these would affect satisfaction level toward some of the factors affecting the work performance differently at the statistical significance level of 0.05

Keywords: Performance, Factors, Employees, Higher Education Institution, and Seventh-day Adventist

Introduction

In the era of globalization, higher education institutions need maintain the institution’s effectiveness and performance for surviving, growing, and developing continually. Several important factors contributing to an efficient operation of a higher educational institution are good potential personnel, loyalty, dedication, and willingness to work corporately with the institute. Hence, it is important that the institutions need to motivate their employees to work happily, provide good quality of work life, and make them feel being a part of the institution. In doing so, the institutions have to provide various factors in supporting their employees to dedicate their physical and mental strength for a good and efficient work for the Institution. Kaplan and Norton (1996) state that modern management principles do not use only strategic plans, but also other important management dimensions as well. In other words, effective management does not emphasize only the financial aspect, it involves four dimensions of “The Balance Scorecard” which are internal process management, finance, learning and innovating new products, and customers. For Human resource management, it is a part of internal process management which is all about recruiting, selecting, training, and retaining the employees in the organization as long as possible. From an economic principle, any productions or service businesses, a producer combines product resources together in order to produce goods and services. These product resources are called “Production Factors” which are land, labor, investment, and entrepreneurship. When these four factors are combined together, it becomes the cost of that products or services (Thanaviboonchai, Khavakool, & Thitaram, 1998). Typical to all business sectors is the importance of laborers or human resource. Therefore, human resource is a very valuable source for organizational management. An organization’s operation success depends very much on its personnel’s conduct because they are an important key factor of adding value to the business. The personnel are the ones who invent and dedicate themselves physically and mentally to create products or render services that will serve the needs of consumers. Subsequently, the organization gains income, survival status, and growth. An essential aspect that makes employees dedicate themselves physically and mentally to their work is satisfaction of work factors. If the employees are happy
with work conditions that are provided by the institution, they will dedicate themselves physically and mentally to their work. Furthermore, when the employees work willingly, their productivity becomes the most efficient ones. Nowadays, human resource management is well recognized as the key to the success of organizations. If any organization has equipped and willing personnel to work diligently, that organization has the opportunity to achieve their set goals. Conversely, if any organization lacks in efficient personnel, it is likely to fail in their operation.

Not only will institutions need to know what factors motivate personnel to operate efficiently, but also the institutions need to know there are some factors that impede the performance of the personnel currently and in the future. Furthermore, human resource management is not limited to the business of manufacturing and service, but it is applied to other types of businesses such as public and private educational institutions, non-profits organizations, research organizations, public transport organizations, and public health organizations. Every enterprise needs to emphasize their human resource management in the organization in order to achieve the set goals. Moreover, employees in all levels of an organization are essential equally to the organization whether they work in an operational level, mid-level, or executive level. Therefore, higher education institutions also need to see the importance of human resource management the same as other businesses do. This resource is crucial to the institution and will lead to achievement of the set goals. Additionally, institutions need to be aware of the least satisfaction of work factors which can become an obstacle at work and needed to be adjusted, improved, and developed for an efficient performance of employees.

Recognizing the importance of human resource in the progress of a tertiary education system, this research aims to determine relevant factors which affect the work performance of employees in a private faith-based institution in Thailand. The specific objectives of this study are:

1. To study the factors affecting the work performance of employees in Seventh-day Adventist Higher Education Institution in Thailand
2. To use the research results as a guideline for planning and developing human resource in the future.

Hypothesis

Different demographic characteristics of the personnel at the Seventh-day Adventist Institution in Thailand have different satisfaction level toward the factors affecting work performance.

Methodology

This quantitative study will use a survey as its main data collection tool. The sample group involved in this study was 145 employees of Asia-Pacific International University who have worked during the academic year of 2013. The survey-questionnaire has two parts. The first part contained closed-ended questions asking about demographic data of the respondents. The second part consisted of items scaled along a five-point Likert format measuring the satisfaction of various factors in the workplace. The reliability of the questionnaire was tested by Cronbach’s alpha coefficient, and the result was 0.91. The data obtained from the questionnaire was analyzed with descriptive statistics and results are presented as average, percentage, and standard deviation. The statistics used to test the hypothesis were t-test and F-test or One-way ANOVA Analysis of Variance. Fisher’s LSD (Least Significant Difference) was utilized to test the differences of pairwise comparison.

Results

The majority of the respondents in each category of demographic data are reported in the following: 58% were female in gender; 37% were in the age range of 31-40 years old; 39% were 1-5 years in the length of employment at AIU; 54% were supporting staffs for employment status; 42% completed Master Degree for their highest level of education; and 72% were married for marital status. Furthermore, an analysis of satisfaction levels toward factors affecting the work performance of staff in higher education institutions, Seventh-day Adventist utilized the following criteria.

Averages rating 4.50 – 5.00 means strongly satisfied
Averages rating 3.50 – 4.49 means satisfied
Averages rating 2.50 – 3.49 means not sure
Averages rating 1.50 – 2.49 means not satisfied
Averages rating 1.00 – 1.49 means strongly not satisfied

The survey questionnaire consisted of 45 items. The researcher found seven factors out of all 45 factors that were averaged as “Not Sure” in the employees’ satisfaction level as demonstrated in Table 1.

**Table 1: Mean and Standard Deviation**

<table>
<thead>
<tr>
<th>Factors Affecting the Employees’ Work Performance</th>
<th>( \bar{X} )</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Institution has adequate professional development programs for employees.</td>
<td>3.03</td>
<td>1.00</td>
</tr>
<tr>
<td>2. Employees receive a suitable remuneration.</td>
<td>3.05</td>
<td>1.09</td>
</tr>
<tr>
<td>3. Institution has a clear promotion system.</td>
<td>3.09</td>
<td>0.90</td>
</tr>
<tr>
<td>4. Assigned work does not affect employees’ family time.</td>
<td>3.29</td>
<td>1.09</td>
</tr>
<tr>
<td>5. The institution’s policy does not discriminate certain group of employees.</td>
<td>3.29</td>
<td>1.08</td>
</tr>
<tr>
<td>6. Employees receive opportunities for trainings regularly.</td>
<td>3.36</td>
<td>1.04</td>
</tr>
<tr>
<td>7. Employees have autonomy to do their job.</td>
<td>3.48</td>
<td>0.90</td>
</tr>
</tbody>
</table>

Moreover, the data analysis comparing the effect of each demographic characteristic on factors affecting the work performance of employees in higher education institutions, Seventh-day Adventists in Thailand, it showed in the followings:

*Gender*

To compare the effects of gender on factors affecting the work performance of employees, overall, there was a statistically significant effect of gender on factors affecting the work performance of employees at the level of 0.5 \( (t = -2.110, p=0.037^*) \). When considering in each factor, males were less satisfied with the clarity of the institute’s promotion system comparing to female gender.

*Employment status*

To compare the effect of employment status on factors affecting the work performance of employees, overall, there was a statistically significant effect of employment status on factors affecting the work performance of employees at the level of 0.5 \( (t = 2.546, p = 0.012^*) \). When considering each factor, the researcher found the employment status affected three factors differently. Supporting staff were more satisfied with item “Assigned work does not affect the employees’ family time.” than faculty members. However, supporting staff were less satisfied with item “Institution has a clear promotion system.” and “Employees receive opportunities for training regularly.” than faculty members.

*Age*

To compare the effect of age on factors affecting the work performance of employees, overall, there was no statistically significant effect of age on factors affecting the work performance of employees at the level of 0.5 \( (F = 1.815, p = 0.130) \). When comparing each factor, the researcher found age affected two work performance factors and they are: 1) the group of 20-30 years old were least satisfied with item “Employees have autonomy to do their job.” than the group of 31-40 years old, 41-50 years old, and 61 years old and above; 2) the group of 20-30 years old, 31-40 years old and 41-50 years old were less satisfied with the factor of “Institution has a clear promotion system.” than the 61 years old and above group.

*Educational level*

To compare the effects of educational level on factors affecting the work performance of employees, overall, there was a statistically significant effect of educational level on factors affecting the work performance of employees at the level of .05 \( (F = 3.151, p = 0.027^*) \). Considering factor by factor, the researcher found
educational level was affected differently on six factors affecting the work performance of employees, which are: 1) employees who hold a Bachelor and a Master Degree were less satisfied with “Assigned work does not affect the employees’ family time.” than those who hold a Doctoral Degree; 2) employees who hold Bachelor Degrees were less satisfied with “Employees have autonomy to do their job.” than those who hold a Doctoral Degree; 3) employees who do not have Bachelor Degree were less satisfied with “Employees receive a suitable remuneration.” than those who hold a Bachelor and Master Degree. Furthermore, employees who hold a Bachelor and Doctoral Degree were less satisfied with “Employees receive a suitable remuneration.” than those who have Master Degrees; 4) employees who have Bachelor Degree were less satisfied with “Institution has a clear promotion system.” than those who have Master and Doctoral Degree; 5) employees who have and do not have Bachelor Degree were less satisfied with “Institution has adequate professional development programs for employees.” than those who have Doctoral Degree; and 6) employees who hold and do not hold Bachelor Degree were less satisfied with “Employees receive opportunities for trainings regularly.” than those who hold Master Degree.

Years of employment at AIU

To compare the effects of years of employment at AIU with factors affecting the work performance of employees, considering both overall and each factor, there was no statistically significant effect of the years of employment on factors affecting the work performance of employees at the level of .05 (F = 0.212, p = 0.932).

Marital status

To compare the effects of marital status on factors affecting the work performance of employees, reviewing both overall and each factor, there was no statistically significant effect of marital status on factors affecting the work performance of employees at the level of .05 (F = 1.112, p = 0.332).

Figure 1: Factors that affect the work performance from a mean score of 5

Discussion

The results from the survey indicated that there are 7 primary factors which affect the work performance.

Institution has adequate professional development programs for employees

Professional development programs increase employees’ potential and motivate employees to work with all their ability. Subsequently, the employees can advance their profession. The program also encourages the determination of employees to improve their potential for their professional advancement. Therefore, the institutions and employees need to plan professional development plan for their employees together because both parties will share this joint benefits. Furthermore, the institution must try to strengthen and support the professional development opportunities of their employees. All of them in all disciplines have equal rights to participate in the professional development program according to no discrimination principle. However, those who apply for the program may have to be approved for some criteria such as the consistency in maintaining a good work performance, ability to demonstrate leadership skill, and possess the potential for development. Moreover, the institution’s role is to
set the policy and support the professional development according to the institution’s objectives and needs for now and in the future for an appropriate operational direction and the highest benefits of all parties.

**Employees receive a suitable remuneration**

One of the ways to promote good relationship between the institutions and personnel is fair remuneration. This leads to the satisfaction of both the institution and employees. Conversely, if the employees receive unfair remuneration, they will have dissatisfaction and may rebel or resign from their work. Subsequently, the institution will be damaged due to the discontinuation of operations, the lack of morale, an increase in the unit cost of production, a decrease in productivity both quantitatively and qualitatively, and unpleasant administrative reputation. Nevertheless, there are solutions to solve this problem. The institution needs to conduct a research or make a survey on salary in the same business sector and update salary structure that is fair and beneficial to both parties. Employees work not only to earn for a living, they would like to have an ideal life as much as possible. The life that is strong and healthy, be able to take care of their family happily, including be able to afford some enjoyment in life as needed. Welfare has been recognized as an important tool to maintain and motivate the employees to perform work for the organization willingly. The benefits will assist in the success of work, motivate, and control efficient performance of the employees.

**Institution has a clear promotion system**

Human beings are complex in terms of their mind and behavior. Each individual responds to changes around them differently; especially, the changes that affect morale and motivation. The promotion of employees is one of the changes that occur within an institution as an outcome of actions such as consistently doing a good job, meeting the needs of institution in special way, and properly practicing in workplace. Therefore, the institution needs to place the principles and techniques of position management in a transparent way to ensure equality, justice, and appropriateness. In addition, changing the positions properly will create morale and motivation for people to work effectively. Inevitably, employees who expect to receive promotion but got none, or those who received one but was not to their expectation may become discouraged, hopeless, and even dissatisfied with the position received as well as the institution. All of these will surely affect their performance directly or indirectly. Promotion is a sensitive issue because it involves morale and motivation of the employees; therefore, the principle of promotion system has to be established with clarity, good system, thoroughness, and conciseness.

**Assigned work does not affect employee’s family time**

Seventh-day Adventist Higher Education Institution or other educational institutions do not pay compensation for overtime work unlike other merchandise production companies or service businesses. Overtime in higher educational institutions may be from an urgent need to complete a job on scheduled time or from a special activities or projects on weekends or holidays. So far, the Institute asks for cooperation from employees to participate in such activities; hence, employees should be allowed to accumulate the overtime hours or days to be used as compensatory holidays. However, this needs to be well organized, controllable, carefully done in preventing future problem. The other method is to review job description and scope of work of each position in preventing employees from overwork. The review needs to be updated because responsibility of today may be different from the one from the past mainly from utilizing advanced technology to help at work. However, workload may increase or decrease when using the new technology. In addition, the institution can organize recreational activities for all employees and their family to participate together. This will create motivation and bonding among personnel, their families, and the institutions to become as one of their own family.

**The institution’s policy does not discriminate certain group of employees**

Equity Theory from Stacy in 1965 stated that employees tend to estimate equity between the inputs that they bring to a job and the outcomes that they receive from it. Institutions need to establish two-way communication between employers and employees for better understanding and listening to opinions which can lead to satisfaction of employees at certain level. Furthermore, institutions can try to communicate
with the employees about policies and goals of the organization. Meanwhile, listening to their concerns and opening for discussion such as system, consultation, policy, and problem solving are essential in order to meet their needs which can create high satisfaction of employees.

**Employees receive opportunities for training regularly**

Training is the process by which the participants gain knowledge from any method of learning for enhancing or developing the competencies of employees. When employees are equipped with proper skills to perform the job and understand operating procedures, they produce quality work in accordance with standards. Moreover, the training will motivate employees to be more enthusiastic, have higher morale and encouragement at work, produce better outcome, correct mistakes, constantly develop the quality of work, and decrease any errors.

**Employees have autonomy to do their job**

Power delegation technique is the power given to subordinates to freely make decision within the chain of command (autonomy) in an organization. Ones in higher command accept opinions from all levels of subordinate and allow them to participate in decision making. Delegation to subordinates is one of the best ways to promote an advancement of subordinates. This will provide opportunities for them to be creative and innovative for new ideas and solve problems at work by themselves. An effective delegation does not need micromanagement or not paying attention to the performance of subordinates. However, the autonomy at work should be given to subordinates in a certain level in terms of time, resources, and power as well. Moreover, the performance of subordinates on the assigned tasks should be reviewed periodically. Argyris and Donald (1974) said a subordinate is just like a baby in an organization, there should be no ambitions to be in as equal or higher position as others who have more seniority. In achieving one’s maturity, the person needs to cultivate his drive to do more activities, happy by being independence, multi-task oriented, or work autonomously.

**Recommendations and Future Directions**

**Human resources management**

Administrators of Seventh-day Adventist Higher Education Institution in Thailand need to focus on human resources. Recruitment and selection system need to be systematically and appropriately done because this will affect the performance of the employees and the development of institutions in the future. If the administrators are able to recruit personnel with suitable knowledge, skills, and experience to perform the required job, the institution is more likely to be success in achieving their goals. Conversely, if administrators are unable to recruit personnel who are right for the job, the institution has high tendency to make mistakes and face failures at the end.

**The motivation of personnel**

Administrators of Seventh-day Adventist Higher Education Institution in Thailand need to utilize Motivation Theory to bring up low satisfaction level of employees in some of the factors because these factors affect the performance of the employees. Motivation is the mental process that produces strength for employees to work with proper direction and not discouraged to achieve the success and efficiency of the operation. The motivations could be created from financial incentive or non-financial incentives.

For further study, researchers may analyze additional demographic characteristics such as nationality, department, and position because these variables may affect the factor affecting work performance differently.

**Conclusion**

The Seventh-day Adventist Higher Education Institution in Thailand needs to foster motivation among their personnel for their highest determination and dedication to their work in the institution physically
and mentally. Consequently, they will produce the highest performance. Furthermore, institutions need to prepare various factors and create job satisfaction for employees in order to form morale and encouragement among them. Hence, the institution needs to study the factors affecting the work performance of the employees to be aware of some factors that might cause job dissatisfaction. That way, the institution will be able to adjust, improve, and plan accordingly. If the institution is unaware of these unsatisfied factors, the employees may lose their morale and encouragement. Inevitably, this will directly affect the efficiency of the work performance.

From total of 45 factors, employees were found to be uncertain with seven factors which could probably lead to dissatisfaction. The institution needs to adjust, improve, or motivate the employees to be more satisfied with these factors up to the level of “strongly satisfied.” If the institution ignores this fact, there is a chance that the employees will have low job satisfaction and their work performance can be affected the same way. In addition, the researcher also discovered that the different demographic characteristics have an effect on some factors affecting the work performance differently as well. If the institution adjusts or improves these job satisfaction factors to increase the satisfaction of the employees, this means that institution creates motivation of their personnel; and consequently, they will perform the best of their ability and efficiency. If the employees are more motivated, they will automatically improve their performance at the highest level.

References


About the Author

Samorn Namkote is a lecturer at the Faculty of Business Administration, Asia-Pacific International University., Thailand.
TABLE 1: Mean Standard deviation and The statistics are used to test the hypothesis of comparing differently by gender.

<table>
<thead>
<tr>
<th>Factors Affecting the Employees’ Work Performance</th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
<th>t</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Overall satisfaction to the factors</td>
<td>( \bar{x} ) 3.100</td>
<td>S.D. 0.609</td>
<td>( \bar{x} ) 3.307</td>
<td>S.D. 0.526</td>
<td>-2.110</td>
<td>0.037*</td>
</tr>
<tr>
<td>Assigned work does not affect employees’ family time.</td>
<td>( \bar{x} ) 3.12</td>
<td>S.D. 1.15</td>
<td>( \bar{x} ) 3.36</td>
<td>S.D. 1.04</td>
<td>-1.243</td>
<td>0.216</td>
</tr>
<tr>
<td>Employees have autonomy to do their job.</td>
<td>( \bar{x} ) 3.37</td>
<td>S.D. 0.98</td>
<td>( \bar{x} ) 3.55</td>
<td>S.D. 0.85</td>
<td>-1.162</td>
<td>0.248</td>
</tr>
<tr>
<td>Employees receive a suitable remuneration.</td>
<td>( \bar{x} ) 3.03</td>
<td>S.D. 1.09</td>
<td>( \bar{x} ) 3.02</td>
<td>S.D. 1.09</td>
<td>0.050</td>
<td>0.960</td>
</tr>
<tr>
<td>The institution’s policy does not discriminate certain group of employees.</td>
<td>( \bar{x} ) 3.16</td>
<td>S.D. 1.23</td>
<td>( \bar{x} ) 3.39</td>
<td>S.D. 0.98</td>
<td>-1.199</td>
<td>0.233</td>
</tr>
<tr>
<td>Institution has a clear promotion system.</td>
<td>( \bar{x} ) 2.86</td>
<td>S.D. 0.98</td>
<td>( \bar{x} ) 3.24</td>
<td>S.D. 0.82</td>
<td>-2.455</td>
<td>0.015*</td>
</tr>
<tr>
<td>Institution has adequate professional development programs for employees.</td>
<td>( \bar{x} ) 3.05</td>
<td>S.D. 1.07</td>
<td>( \bar{x} ) 3.04</td>
<td>S.D. 0.97</td>
<td>0.079</td>
<td>0.937</td>
</tr>
<tr>
<td>Employees receive opportunities for trainings regularly.</td>
<td>( \bar{x} ) 3.19</td>
<td>S.D. 1.00</td>
<td>( \bar{x} ) 3.52</td>
<td>S.D. 1.02</td>
<td>-1.879</td>
<td>0.062</td>
</tr>
</tbody>
</table>

Table 2: Mean Standard deviation and The statistics are used to test the hypothesis of comparing differently by employment status.

<table>
<thead>
<tr>
<th>Factors Affecting the Employees’ Work Performance</th>
<th>Faculty</th>
<th></th>
<th>Supporting staff</th>
<th></th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction to the factors</td>
<td>( \bar{x} ) 3.350</td>
<td>S.D. 0.488</td>
<td>( \bar{x} ) 3.109</td>
<td>S.D. 0.603</td>
<td>2.546</td>
<td>0.012*</td>
</tr>
<tr>
<td>Assigned work does not affect employees’ family time.</td>
<td>( \bar{x} ) 3.06</td>
<td>S.D. 1.13</td>
<td>( \bar{x} ) 3.49</td>
<td>S.D. 1.01</td>
<td>-2.356</td>
<td>0.020*</td>
</tr>
<tr>
<td>Employees have autonomy to do their job.</td>
<td>( \bar{x} ) 3.62</td>
<td>S.D. 0.86</td>
<td>( \bar{x} ) 3.36</td>
<td>S.D. 0.93</td>
<td>1.733</td>
<td>0.085</td>
</tr>
<tr>
<td>Employees receive a suitable remuneration.</td>
<td>( \bar{x} ) 3.18</td>
<td>S.D. 1.01</td>
<td>( \bar{x} ) 2.94</td>
<td>S.D. 1.16</td>
<td>1.350</td>
<td>0.179</td>
</tr>
<tr>
<td>The institution’s policy does not discriminate certain group of employees.</td>
<td>( \bar{x} ) 3.47</td>
<td>S.D. 1.08</td>
<td>( \bar{x} ) 3.13</td>
<td>S.D. 1.06</td>
<td>1.863</td>
<td>0.065</td>
</tr>
<tr>
<td>Institution has a clear promotion system.</td>
<td>( \bar{x} ) 3.38</td>
<td>S.D. 0.86</td>
<td>( \bar{x} ) 2.84</td>
<td>S.D. 0.86</td>
<td>3.717</td>
<td>0.000*</td>
</tr>
<tr>
<td>Institution has adequate professional development programs for employees.</td>
<td>( \bar{x} ) 3.12</td>
<td>S.D. 1.05</td>
<td>( \bar{x} ) 2.96</td>
<td>S.D. 0.97</td>
<td>0.952</td>
<td>0.343</td>
</tr>
<tr>
<td>Employees receive opportunities for trainings regularly.</td>
<td>( \bar{x} ) 3.64</td>
<td>S.D. 0.93</td>
<td>( \bar{x} ) 3.11</td>
<td>S.D. 1.07</td>
<td>3.184</td>
<td>0.002*</td>
</tr>
</tbody>
</table>

Significance 0.05

Table 3: The statistics are used comparing differently by age.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variance</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between group</td>
<td>4</td>
<td>2.245</td>
<td>0.561</td>
<td></td>
<td>1.815</td>
<td>0.130</td>
</tr>
<tr>
<td>Within group</td>
<td>132</td>
<td>40.811</td>
<td>0.309</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>43.056</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05
<table>
<thead>
<tr>
<th>Factor</th>
<th>Variance</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees have autonomy to do their job.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between group</td>
<td>4</td>
<td></td>
<td>9.114</td>
<td>2.279</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within group</td>
<td>136</td>
<td></td>
<td>104.091</td>
<td>0.765</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>140</td>
<td></td>
<td>113.206</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

<table>
<thead>
<tr>
<th>Age</th>
<th></th>
<th>20 - 30 years</th>
<th>31 – 40 years</th>
<th>41 – 50 years</th>
<th>51 – 60 years</th>
<th>60 years above</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 - 30 years</td>
<td>2.88</td>
<td>3.52</td>
<td>3.48</td>
<td>3.65</td>
<td>4.00</td>
<td>3.52</td>
</tr>
<tr>
<td>31 – 40 years</td>
<td>3.52</td>
<td>0.64*</td>
<td>0.60*</td>
<td>0.77*</td>
<td>1.12*</td>
<td></td>
</tr>
<tr>
<td>41 – 50 years</td>
<td>3.48</td>
<td>0.04</td>
<td>0.13</td>
<td>0.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51 – 60 years</td>
<td>3.65</td>
<td>0.17</td>
<td>0.52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 years above</td>
<td>4.00</td>
<td>1.12*</td>
<td>1.12*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

<table>
<thead>
<tr>
<th>Age</th>
<th></th>
<th>20 - 30 years</th>
<th>31 – 40 years</th>
<th>41 – 50 years</th>
<th>51 – 60 years</th>
<th>60 years above</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 - 30 years</td>
<td>2.76</td>
<td>2.92</td>
<td>3.17</td>
<td>3.24</td>
<td>3.90</td>
<td></td>
</tr>
<tr>
<td>31 – 40 years</td>
<td>2.92</td>
<td>0.16</td>
<td>0.41</td>
<td>0.47</td>
<td>1.14*</td>
<td></td>
</tr>
<tr>
<td>41 – 50 years</td>
<td>3.17</td>
<td>0.25</td>
<td>0.31</td>
<td>0.98*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51 – 60 years</td>
<td>3.24</td>
<td>0.07</td>
<td>0.73*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 years above</td>
<td>3.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

Table 4: The statistics are used comparing differently by educational level.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variance</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction to factors affecting work performance by educational.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between group</td>
<td>3</td>
<td></td>
<td>2.933</td>
<td>0.978</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within group</td>
<td>126</td>
<td></td>
<td>39.105</td>
<td>0.310</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>129</td>
<td></td>
<td>42.038</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

<table>
<thead>
<tr>
<th>Educational Level</th>
<th></th>
<th>Under Bachelor</th>
<th>Bachelor</th>
<th>Master</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.786</td>
<td>3.106</td>
<td>3.327</td>
<td>3.389</td>
<td></td>
</tr>
<tr>
<td>Under Bachelor</td>
<td>2.786</td>
<td>0.321</td>
<td>0.542*</td>
<td>0.603*</td>
<td></td>
</tr>
</tbody>
</table>
### Assigned Work Does Not Affect Employees' Family Time

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variance</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Between group</td>
<td>3</td>
<td>12.413</td>
<td>4.138</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Within group</td>
<td>129</td>
<td>141.948</td>
<td>1.100</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>132</td>
<td>154.361</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

### Educational Level

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>$\bar{x}$</th>
<th>Under Bachelor</th>
<th>Bachelor</th>
<th>Master</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>3.16</td>
<td>0.60</td>
<td>0.31</td>
<td>0.62*</td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

### Employees Have Autonomy to Do Their Job

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variance</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Between group</td>
<td>3</td>
<td>6.999</td>
<td>2.333</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Within group</td>
<td>129</td>
<td>102.099</td>
<td>0.791</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>132</td>
<td>109.098</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

### Employees Receive a Suitable Remuneration

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>$\bar{x}$</th>
<th>Under Bachelor</th>
<th>Bachelor</th>
<th>Master</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>3.18</td>
<td>0.11</td>
<td>0.32</td>
<td>0.64*</td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05
<table>
<thead>
<tr>
<th>Educational Level</th>
<th>$\bar{x}$</th>
<th>Under Bachelor</th>
<th>Bachelor</th>
<th>Master</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Bachelor</td>
<td>3.00</td>
<td>0.19</td>
<td>0.21</td>
<td>0.56</td>
<td></td>
</tr>
<tr>
<td>Bachelor</td>
<td>2.81</td>
<td></td>
<td>0.40*</td>
<td>0.74*</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>3.21</td>
<td></td>
<td></td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>Doctoral</td>
<td>3.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>$\bar{x}$</th>
<th>Under Bachelor</th>
<th>Bachelor</th>
<th>Master</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Bachelor</td>
<td>2.33</td>
<td>0.59</td>
<td>0.72</td>
<td>1.22*</td>
<td></td>
</tr>
<tr>
<td>Bachelor</td>
<td>2.93</td>
<td></td>
<td>0.13</td>
<td>0.63*</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>3.05</td>
<td></td>
<td></td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Doctoral</td>
<td>3.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>$\bar{x}$</th>
<th>Under Bachelor</th>
<th>Bachelor</th>
<th>Master</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Bachelor</td>
<td>2.33</td>
<td>0.59</td>
<td>0.72</td>
<td>1.22*</td>
<td></td>
</tr>
<tr>
<td>Bachelor</td>
<td>2.93</td>
<td></td>
<td>0.13</td>
<td>0.63*</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>3.05</td>
<td></td>
<td></td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Doctoral</td>
<td>3.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05
<table>
<thead>
<tr>
<th>Educational Level</th>
<th>$\bar{x}$</th>
<th>Under Bachelor</th>
<th>Bachelor</th>
<th>Master</th>
<th>Doctoral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Bachelor</td>
<td>2.67</td>
<td>0.35</td>
<td>1.01*</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>Bachelor</td>
<td>3.02</td>
<td></td>
<td>0.65*</td>
<td>0.54</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>3.67</td>
<td></td>
<td></td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Doctoral</td>
<td>3.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

Table 5: The statistics are used comparing differently by years of employment.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variance</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction to factors affecting work performance by year employment.</td>
<td>Between group</td>
<td>4</td>
<td>0.274</td>
<td>0.069</td>
<td>0.212</td>
<td>0.932</td>
</tr>
<tr>
<td></td>
<td>Within group</td>
<td>132</td>
<td>42.781</td>
<td>0.324</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>136</td>
<td>43.056</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05

Table 6: The statistics are used comparing differently by marital status.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variance</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction to factors affecting work performance by marital status.</td>
<td>Between group</td>
<td>2</td>
<td>0.703</td>
<td>0.352</td>
<td>1.112</td>
<td>0.332</td>
</tr>
<tr>
<td></td>
<td>Within group</td>
<td>134</td>
<td>42.353</td>
<td>0.316</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>136</td>
<td>43.056</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significance 0.05
Teaching Writing to Students with Diverse Writing Background

Shelley Agrey

Abstract

Teaching writing in an international university is rewarding because teachers cross paths with students from different walks of life. As such, it makes the English writing class more interesting because students come in with different writing experiences. This could be an issue, though, as teachers will need to meet the objectives of the course whilst attending to the different writing needs of the students. This academic article presents some pertinent issues for writing courses in an international setting. It is hoped that this paper will give insights to teachers who find themselves teaching in a similar setting.

Keywords: Teaching writing; diverse writing experiences; international students

Introduction

It was about a year into my career as a writing teacher in Thailand when I realized just how diverse my students’ writing skills were. Working in an international university gave me the opportunity to cross paths with students from over thirty countries around the world, especially regions around Southeast Asia. Our diverse student body not only brought different English language varieties, but also diverse backgrounds in writing in the English language.

Typically, on the first week of classes, writing classes in the department would assess incoming students’ writing and grammar level by administering a simple diagnostic test or assigning an in-class essay at the beginning of the semester. This gives insight into what grammar concepts need to be reviewed and serves as a guide in lesson planning. The results from this preliminary assessment provide a baseline of each student’s writing competency as well, so that individual improvement can be checked as the semester progresses.

Being a university with a diverse student body, it is normal to find students who have extensive English writing experiences, and those who have minimal. Some students have actually never written an essay until they were in senior high; some of them had only written short paragraphs throughout their primary and secondary education; and some of them had never composed their own original work; instead, they had memorized essays in their writing classes. These experiences shared resonate with research done in the field of ELT (Ho, 2002).

Writing, as all of us have experienced, is an intricate skill (Ismail, 2011). Good writing requires an understanding of a genre, mastering correct language mechanics, and developing a personal voice, are just a few of the many processes a student needs to know. All of these plus an array of writing experiences adds up to the complexity of the teaching process. The following paragraphs will highlight some major issues found in the writing classroom, as well as some possible solutions.

Writing Issues and Possible Solutions

Application of Grammar Rules

The first issue is the failure to apply proper English grammar from students’ textbooks or workbooks into a piece of writing. Textbooks for writing are typically made up of chapters organized according to different genres. There are a few readings to support the genre, and some specific grammar points are also presented,
along with some corresponding grammar exercises. Though the grammar exercises may be a useful activity, what we often observe is that the grammar lesson does not easily transfer into the students’ written work. In other words, grammar rules which students may know in isolation may not be transferable to practical and contextual use. This is common especially in Thailand, where English language classes have been found to prioritize the teaching of discrete forms of the language (Foley, 2005). In fact, on a grammar quiz, students will be able to recite the grammar rule and apply it in an exercise. Yet, they will continue to make the grammar mistake in their essay writing, where the grammar exercise is no longer the focus.

Some of the problematic areas found in my students’ writing are:

- **Articles.** Most Asian languages do not use articles, hence learners have a difficult time deciding which article, if any, to use (Shintani & Ellis, 2013)
- **Verb tense.** Many Asian languages, including Thai, do not add tense markers to verb to indicate time. Instead, a word indicating time is added.
- **Prepositions.** Small words are hard to learn, and perhaps equally hard to teach. When should you use to, for, in, on? These words do not have as much concrete meaning attached to them as do nouns and verbs.
- **Sentence structure errors.** Fragments, faulty parallelism, and run-on sentences are frequent errors from all L2 writing backgrounds.
- **Word-choice.** For example, students often write “in the bad way” or “do the bad thing” or other similar constructs.

### Corrective Feedback for Grammatical Errors

To help students identify errors in grammar, or in their writing, feedback is typically provided. Feedback, on another hand, is an issue. First, questions of the value of corrective feedback in writing have intensified in the past decade or so with Truscott’s (1996) controversial paper on the ineffectiveness of corrective feedback. Though Truscott’s position on corrective feedback may appear quite radical, it has encouraged teachers to become more cautious about the type of feedback they provide. Second, direct feedback is almost always expected from the teacher, especially within the Asian cultural context. We have observed in our classes that students struggle in editing and revising their essays when indirect feedback is given.

From the ongoing discussion about corrective feedback, there are some considerations worth noting. First, writing teachers need to decide which feedback fits the best. There are several types of feedback a writing teacher can choose to give, such as being direct or indirect, focused or unfocused, or providing explanation on the margin, or even arranging for a personal conference with students. What a teacher should bear in mind is that the type of feedback chosen will affect students’ learning process, as well as their motivation to write better. When a feedback does not encourage students to recognize why there are errors, then the feedback has not really accomplished anything.

Second, writing teachers must help their students realize that writing is not a one-off activity. Writing involves several steps. To illustrate this process, what we do in our English classes is have between two to three drafts for one writing assignment. During this process, we encourage our students to incorporate the suggested corrections on language mechanics, as well as content. Multiple drafts help students see their overall progress. We also make sure that students will not take the initial drafts of their essay lightly by scoring the first drafts. Furthermore, some of the teachers do not grade later revisions. This encourages students learn to revise and edit for themselves at the very beginning of the writing process. This allows teacher-generated revisions to be learning tool for future papers, rather than a grading component. The whole process of revision seems to help students become more aware of what they need to work on. Nonetheless, this does not equate to a higher level of grammatical accuracy.

Finally, students can improve their own writing as a group in class. This should be done anonymously to prevent embarrassment, but it appears that students enjoy working on each other’s sentences or paragraphs, and everyone is motivated to try to correct the problem with their friends. The student-suggested corrections are typed in immediately so they can see the result, and if necessary, let students make further suggestions. We try our best to use each student’s writing at some point, and mix in exemplary examples as well, so that this is not a negative experience, and as a way to encourage a sense of ownership in the learning process.
Academic Honesty

Another issue is academic honesty. In this region, it is a common practice for language learners to memorize essays. What encourages this practice could be the plethora of exemplar essays that are marketed to students sitting for a high-stakes exam. This poses a problem, as learners will be led to accept that using someone else’s work can be passed as their own.

To date, plagiarism continues to present a problem for some of our students. Whether it is because they like to “cooperate” in learning here in Southeast Asia, face high parental pressure to excel (certainly an issue in many cultures here), do not understand the assignment and are afraid to ask for help, (again, this is culturally significant), have poor time-management skills, or are simply unmotivated, plagiarism must be dealt with almost every semester in writing classes. Moreover, the ease of using the Internet to find essays is certainly causing the problem to escalate.

Monitoring and Maintaining Academic Honesty

Thankfully, technology helps writing teachers to outsource the task of ensuring originality of students’ work to other tools. Plagiarism checker programs are useful, but too expensive for small institutions. There are free online programs that do help to catch some plagiarism, but not all. If possible, teachers can try to prevent it from happening in the first place. One basic way is for the teacher to really get to know each student’s level of writing. Having several drafts for an essay will help keep track on students’ writing performance, and any suspicious inconsistencies can be identified by comparing different drafts. Nonetheless, when doing this, teachers need to bear in mind that students may have enlisted help with more proficient English writers.

Another approach is to teach students to cite correctly, so that they know the difference between plagiarism and proper citations and references. Assigning writing topics and supplying students with relevant references in the form of articles, newspapers, or books seems to reduce plagiarism, perhaps because it takes some pressure off from the students to come up with all the ideas and words themselves. Another method is to tailor assignments and the setting to make it almost impossible to plagiarize. For the final exam, we use a computer lab with the Internet disconnected and give specific writing topics on the spot, then monitor students as they write. This type of in-class writing on a teacher-generated topic is useful to prevent plagiarism and is important for a high-stakes exam, but it doesn’t allow for longer writing assignments, creative choice of topics, and serious student editing.

Writing in the 21st Century

Most students will be required to work on a computer in their future careers, so writing directly on a computer, without handwriting first, is an important skill. Keyboarding is a challenge when many of the students have never typed in English. Many of our L2 students prefer hand-writing because of this problem. When students use the computer to write, we teach them to use features such as spell-check, how to format, and how to revise with cut and paste functions, and they quickly improve efficiency over hand-writing. One idea for a computer lab writing class is to have the students write an introductory paragraph, for example. Then ask them to highlight their attention-grabbing opening statement in red. Some of the students will search in vain for this feature, and they are then given time to write it in. Then they highlight the thesis statement in green, the background information in blue, and so on. This visual activity challenges them to focus on particular aspects of writing an essay, recognize what is missing, and immediately self-correct the problem before they move on to the next paragraph. This works especially well for the first essay of the semester.

Conclusion

Having a classroom with varying degrees of English writing proficiency may seem overwhelming. It is almost impossible for us to treat individual writers the same, yet, we need to ensure that every single student is moving along towards achieving our writing classes’ learning objectives. Nonetheless, we hope that the issues we shared will help English writing teachers have an idea of what to expect when teaching students from different writing backgrounds.
References


About the Author

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More Fun with Pythagoras

Martin Bredenkamp

Abstract

Students may be introduced to a set of formulae that defines all primitive Pythagorean triples: For all positive integers \(i\) and \(j\) where \(i\) is an uneven number and \(j\) is an even number and \(i\) and \(j\) have no common factors, \(h = i^2 + ij + j^2/2\), \(e = ij + j^2/2\), \(u = i^2 + ij\) where \(h\) is the hypotenuse, \(e\) is the even-numbered leg and \(u\) is the uneven-numbered leg of the Pythagorean triangle. A collection of well-defined subsets of the universal set of triangles described by \(i\) and \(j\) form sequences of triangles that approach in proportion a triangle which has one side defined by an irrational number while the other two are positive integers. This also creates sequences of rational numbers that approach an irrational limit. Finding and defining these series of triangles and numbers require the use of good algebra, giving relevance to the student’s learning of factorising and manipulating algebraic expressions.

Introduction

As part of the Mathematics curriculum of most high schools across the world, pupils are introduced to the theorem of Pythagoras. It provides an interesting opportunity in algebra and geometry, where the square of the hypotenuse of a right-angled triangle is equal to the sum of the squares of the legs of the triangle. As model triangle, the 3,4,5-triangle is used most often, and now and then the 5,12,13- and the 15,8,17-triangles also appear.

This paper provides an infinite matrix of Pythagorean triangles\(^1\) for pupils, which may be generated by indices related to the hypotenuse (\(h\)), the even (\(e\)) and the uneven (\(u\)) legs with very simple algebra, well within reach of the high school pupil. From this matrix of triangles, infinite series of triangles may be selected that in their proportions approach a triangle that has one side irrational with respect to the other two sides.\(^2\) From these series of triangles, series of rational numbers are generated that also have as their limit an irrational number. These are all concepts that are taught in high school mathematics, thus these series of triangles and rational numbers provide an opportunity for pupils to find application for some of these concepts.

These concepts also require rigorous algebra of high school standard because in converting from the formulae of the indices of these triangles to the formulae for respective sides of the triangles, algebra is required that includes factorisation, dealing with differences of squares, radicands and their manipulation, etc. The pupil is thus exposed to good algebra and geometry, and at the same time sees that all this mathematics has some kind of application.

Often the schooling systems across the world have a tendency to discourage original thought. This paper illustrates how children can be stimulated to pursue their own ideas and be creative, using the tools they acquire at school. Indeed, mathematics can be fun, even for children, and children that have been stimulated at school to have fun, turn out to be original thinkers, becoming engineers, architects, businessmen, politicians, and a whole lot of other vocations where creativity is required.

History

The author would like to share a little of the history of this Pythagorean mathematics, which in itself will model to the pupils how an idea and creative thinking came to fruition in providing the concepts of this paper.

As a primary school youngster at the age of around 10, I was playing with a Meccano set, making structures...
with right angles that had to be stabilised with diagonal girders. My grandfather (a carpenter by profession but very interested in mathematics) introduced me to Pythagoras’ theorem to help me build structures with right angles. I was very fascinated by Pythagoras’ theorem. My father (a primary school teacher who taught me mathematics) showed me a mathematical concept in which the sequence of perfect squares was lined up. Their differences formed a new sequence that was all the uneven numbers. The differences of the differences was therefore 2.

Bringing together what my grandfather had taught me, and my father had shown me, it dawned on me that if the differences of perfect squares was the sequence of all the odd numbers, then it quite clearly the perfect squares of all the odd numbers are a part of the sequence of differences. All these situations where the difference of two perfect squares was also a perfect square, each created a new Pythagorean triangle. For example, 9 is the difference between $5^2$ and $4^2$, and is in itself 3$^2$, therefore (3,4,5) is a Pythagorean triple. Similarly, 25 is the difference between $13^2$ and $12^2$, and is in itself 5$^2$, therefore (5,12,13) is a Pythagorean triple, etc. This provided an infinite series of Pythagorean triangles where the hypotenuse and the even leg differed by 1. Fibonacci$^3$,4 and Stifel$^5$,6 were aware of this infinite sequence of triangles. In a similar manner, I discovered the infinite series of triangles where the hypotenuse and the uneven leg differ by 2. This series has also already been described by Ozanam.7

I then went about seeking a series of triangles where the legs differed by only 1, and as a high school pupil, found it as well: \{(3,4,5), (21,20,29), (119,120,169), (697,696,985), \ldots \} An interesting aspect of this series of right-angled triangles is that the shape of the triangle more and more resembles the 45° right-angled triangle as the series progresses. Using this sequence of triangles, it is quite obvious that a series of rational numbers derived from dividing the hypotenuse with either of the legs may be produced, that have as their limit, an irrational number.

This is where my childhood exploration of right-angled triangles stopped, but since, I had wondered whether it would be possible to find other sequences of triangles that would approximate other non-rational right-angled triangles such as the 30/60° right-angled triangle. In the past five years I have had the opportunity to discover such series.

The indices

All primitive right-angled triangles are defined by a pair of indices $(i,j)$ where $i$ is an uneven positive integer, and $j$ is an even positive integer, on condition the $i$ and $j$ do not have any common factors.1 (If they do have a common factor, then the triangle will not be primitive.) The hypotenuse ($h$), the uneven leg ($u$) and the even leg ($e$) of the right-angled triangle are defined as follows:

\[ u = i^2 + ij \]  
\[ e = ij + j^2/2 \]  
\[ h = i^2 + ij + j^2/2 \]

This provides an infinite two-dimensional matrix of right-angled triangles which form the universal set from which the series of triangles are selected (Scheme 1).

The series of triangles were manually searched until a pattern was observed.2 Once a pattern was identified for finding the next member of the series, the series was extended algebraically. To illustrate this concept, the series for the 45° triangle is used. The series is provided above and the formula for finding the next member of a series is:

For the series $(i, j, n, (i, j))_{n+1} = (i_n + j_n, 2i_n + j_n)$ where $(i, j)_1 = (1, 2)$ (4)
Series in terms of the sides of triangles

Now converting this series of indices into the triangles they represent, requires combining what we have in terms of the indices, and converting that to $h$, $u$ and $e$. This demands command of good algebra from the pupil, but also shows the pupil good application of many of the tools he has acquired in algebra. Continuing with the $45^\circ$-triangle the algebraic process is illustrated:

\[
\begin{align*}
\tan(i+1) &= \tan(i) + j_{n+1}h_{n+1} \\
&= (i_n + j_n)^2 + (4i_n + j_n)(2i_n + j_n) \\
&= i_n^2 + 2i_nj_n + j_n^2 + 2i_n^2 + 2j_n^2 + 3i_nj_n + j_n^2 \\
&= 3i_n^2 + 5i_nj_n + 2j_n^2 \\
\text{However } h &= h^2 + e \\
&= \sqrt{h} - e \\
\text{and } e &= ij + j^2/2 \\
&= 2j\sqrt{h} - e + j^2 \\
&= j^2 + 2j\sqrt{h} - e - 2e \\
\therefore j &= -2(h - 2j\sqrt{h} - 2e)/2 \\
&= \sqrt{h} + e - \sqrt{h} - e \\
\therefore u &= 3(\sqrt{h_n - e_n})^2 + 5\sqrt{h_n - e_n} \cdot (\sqrt{h_n + e_n} - \sqrt{h_n - e_n}) + 2(\sqrt{h_n + e_n} - \sqrt{h_n - e_n})^2 \\
&= 3h_n^2 - 3e_n + 5(\sqrt{h_n - e_n}^2 - h_n + e_n) + 2(\sqrt{h_n + e_n} - 2\sqrt{h_n - e_n} + h_n - e_n) \\
&= 3h_n^2 - 3e_n + 5(u_n - h_n + e_n) + 2(2h_n - 2u_n) \text{ by Pythagoras} \\
&= 2h_n + 2e_n + u_n \\
\therefore e &= j_{n+1}/2 + i_{n+1}/h_{n+1} \\
&= 2(2i_n + j_n)^2 + 2(i_n + j_n)(2i_n + j_n) \\
&= 4i_n^2 + 4i_nj_n + j_n^2 + 4i_n^2 + 6i_nj_n + 2j_n^2 \\
&= 8i_n^2 + 10i_nj_n + 3j_n^2 \\
&= (4i_n + 3j_n)(2i_n + j_n) \\
&= (\sqrt{h_n - e_n} + 3(\sqrt{h_n + e_n} - \sqrt{h_n - e_n}))(2\sqrt{h_n - e_n} + \sqrt{h_n + e_n} - \sqrt{h_n - e_n}) \\
&= (\sqrt{h_n - e_n} + 3\sqrt{h_n + e_n})(\sqrt{h_n - e_n} + \sqrt{h_n + e_n}) \\
&= 4h_n + 2e_n + 4u_n \\
\therefore e &= 2h_n + e_n + 2u_n \\
\text{from (3)} \\
\text{from (2)} \\
\text{from (3)} \\
\text{from (2)} \\
&= i_{n+1} + j_{n+1}/2 \\
\therefore h &= i_{n+1} + j_{n+1}/h_{n+1} \\
&= 2h_n + 4i_n + 3h_n + 3e_n \\
&= 4h_n + 2e_n + 4u_n \\
\text{from (6) and (7)} \\
\text{by Pythagoras and diff. of squares} \\
&= 10(\sqrt{h_n - e_n})^2 + 14\sqrt{h_n - e_n} \cdot (\sqrt{h_n + e_n} - \sqrt{h_n - e_n}) + 5(\sqrt{h_n + e_n} - \sqrt{h_n - e_n})^2 \\
&= 10h_n - 10e_n + 14(\sqrt{h_n - e_n}^2 - h_n + e_n) + 5(h_n + e_n - 2\sqrt{h_n - e_n} + h_n - e_n) \\
&= 10h_n - 10e_n + 14(u_n - h_n + e_n) + 5(2h_n - 2u_n) \\
&= 6h_n + 4e_n + 4u_n \\
\therefore h &= 3h_n + 2e_n + 2u_n \\
\text{from (5) and (7)} \\
\text{by Pythagoras}
The algebra may seem quite formidable, but all the steps are within the reach of high school mathematics, maybe just a little long. After an exercise as long as this, it is useful to test the newly generated formulae by applying them to the already established series of triangles. For example, tested at the first level, we generate the second triangle from (3,4,5):

Indeed, we have reached the second member of the series of triangles, and therefore know that the algebra was developed without a hitch.

The algebraic formula to find the series of triangles that lead to the 30/60°-triangle follows:

\[
(i, j)_{n+1} = (2i + 2j, 2i + 3j)
\]

(13)

The pupil may want to try his own hand at finding formulae to generate the next triangle in terms of the sides of the triangle, deriving it from the indices as was done above for the 45°-triangle.

Other triangles

Besides the 45°- and the 30/60°-triangles, there are many more. Table 1 illustrates a sequence of triangles that are the limits of series of primitive Pythagorean triangles. Note that the square roots of 9 (3) and of 25 (5) do not feature in these series because these numbers are not irrational, yet they are displayed in the table to provide continuity to the sequence of irrational triangles:

Table 1: A sequence of triangles with one side irrational.

<table>
<thead>
<tr>
<th>hypotenuse</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>rational leg</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>irrational leg</td>
<td>√3</td>
<td>√5</td>
<td>√7</td>
<td>3</td>
<td>√11</td>
<td>√13</td>
<td>√15</td>
<td>√17</td>
<td>√19</td>
<td>√21</td>
<td>√23</td>
<td>√27</td>
<td>√29</td>
<td>√31</td>
<td>√33</td>
<td></td>
</tr>
</tbody>
</table>

The pupil may want to try a few more. Below are the formulae for finding the series of triangles in terms of the indices. Try converting the indices to \( h, u \) and \( e \).

For the \( √5 \) triangles \((i, j)_{n+1} = (i + 2j, 2i + 3j)\) where \((i, j)_1 = (1, 2)\)

For the \( √7 \) triangles \((i, j)_{n+1} = (5i + 9j, 6i + 11j)\) where \((i, j)_1 = (1, 2)\)

For the \( √11 \) triangles \((i, j)_{n+1} = (7i + 15j, 6i + 13j)\) where \((i, j)_1 = (3, 2)\)

For the \( √13 \) triangles \((i, j)_{n+1} = (13i + 30j, 10i + 23j)\) where \((i, j)_1 = (3, 2)\)

For the \( √15 \) triangles \((i, j)_{n+1} = (3i + 7j, 2i + 5j)\) where \((i, j)_1 = (3, 2)\)

For the \( √17 \) triangles \((i, j)_{n+1} = (3i + 8j, 2i + 5j)\) where \((i, j)_1 = (3, 2)\)

For the \( √19 \) triangles \((i, j)_{n+1} = (131i + 351j, 78i + 209j)\) where \((i, j)_1 = (3, 2)\)
For the √21 triangles \((i, j), (i, j)_{n+1} = (43i_n + 120j_n, 24i_n + 67j_n)\) where \((i, j)_1 = (3, 2)\)

For the √23 triangles \((i, j), (i, j)_{n+1} = (19i_n + 55j_n, 10i_n + 29j_n)\) where \((i, j)_1 = (3, 2)\)

Some of these series operate on big coefficients and will require extra vigilance to not make mistakes, but may all be verified by testing as illustrated above.

**Series of rational numbers**

Having established the series of triangles, choice of the right pair of sides will lead to a series of numbers that will converge to an irrational number as the limit. The 45º-triangle will again serve as an example. The 45º-triangle may be represented as having the two legs equal to 1, then the hypotenuse is. Taking the hypotenuse and the even leg of every triangle in this series as a rational number where the hypotenuse is the numerator and the even leg the denominator, we have a series of numbers that approach the \(\sqrt{2}\) as their limit:

\[
\begin{align*}
\{1.20, & 1.45, 1.408333, 1.4152298, \ldots\}
\end{align*}
\]

Turning these rational numbers into decimal fractions, notice how they are approaching the approximated decimal value for the \(\sqrt{2}\) (1.4142135):

\[
\{1.20, 1.45, 1.408333, 1.4152298, \ldots\}
\]

The pupil may apply this same procedure for \(\sqrt{3}, \sqrt{5}, \text{etc.}\) Just bear in mind that for \(\sqrt{5}\) and upward, to get the approximation of the root, the even side has to be multiplied by a factor in the numerator. This is because none of the sides in the triangle for \(\sqrt{5}\) are one but a bigger integer. For \(\sqrt{5}\) the formula is \(2e/u\), derived from the \(2,\sqrt{5},3\)-triangle (see Table 1). Likewise, for \(\sqrt{7}\) the formula is \(3e/u\), derived from the \(3,\sqrt{7},4\)-triangle, etc.

**Conclusion**

New developments in the classical field of mathematics with respect to Pythagorean triangles have opened new avenues in the training of mathematics at the upper high school level. Pythagorean triangles form an infinite two dimensional matrix defined by indices \((i, j)\) where \(i\) is an uneven positive integer and \(j\) is an even positive integer. Pupils can use these indices to find new triangles by substituting numbers for the indices and determining the lengths of the respective sides of the triangles.

Series of triangles may be found in the infinite matrix that have as their limiting triangles, a triangle with one side irrational. For example, for the 45º-triangle:

\[
\begin{align*}
\text{the series } (i, j)_n: & \quad (i, j)_{n+1} = (i_n + j_n, 2i_n + j_n) \quad \text{where } (i, j)_1 = (1, 2)
\end{align*}
\]

and for the 30º/60º-triangle:

\[
\begin{align*}
\text{the series } (i, j)_n: & \quad (i, j)_{n+1} = (i_n + j_n, 2i_n + 3j_n) \quad \text{where } (i, j)_1 = (1, 2)
\end{align*}
\]

Algebraic formulae define the \((n+1)\text{th}\) triangle in the series where the \(n\text{th}\) one is known (the 1\text{st} triangle is defined) in terms of the indices. Formulae may then be algebraically developed to redefine the \((n+1)\text{th}\) triangle in the series in terms of the sides of the \(n\text{th}\) triangle. For example, for the 45º-triangle (the first triangle is \((3,4,5)\)):

\[
\begin{align*}
\mu_{n+1} &= 2h_n + 2e_n + u_n \\
e_{n+1} &= 2h_n + e_n + 2u_n \\
h_{n+1} &= 3h_n + 2e_n + 2u_n
\end{align*}
\]
This requires rigorous algebra, but well within the scope of high school algebra. The series of triangles in terms of the sides of triangles, provide an easy way to generate series of rational numbers that have as their limit an irrational number. For example, in the 45º-triangle, the square root of 2 may be found by using \( h/u \) or \( h/e \) of the series of triangles to define the respective series that will have as their limit the square root of 2.

This mathematics should boost the quality of the high school mathematical curriculum in that it provides meaningful application to many of the aspects of algebra. Pupils get an opportunity to see how mathematics may be applied in solving real problems. This will also provide the more gifted students with something that may grip their attention, generating interest in mathematics, and possibly opening doors to careers that are more mathematically inclined such as engineering, statistics, economics and other related occupations.

**References**


**About the Author**

Martin Bredenkamp is an Assistant Professor at the Faculty of Science, Asia-Pacific International University, Thailand.
Book Review


Sabbath is part of The Ancient Practices Series which examine the shared religious concepts of Judaism, Christianity and Islam. For Allender, the journey into a deep and profound understanding of Sabbath began at the Mae Sot refugee camp in Thailand.

The book comprises three sections, Sabbath Pillars, Sabbath Purpose and Sabbath Performance. The Pillars of Sabbath are sensual, holy time, communal feast and play day. Allender argues that above all else, Sabbath is a festive, celebrational concept. He contends, ‘Many who take the Sabbath seriously and intentionally ruin it with legislative and worrisome fences that protect the Sabbath but destroy its delight’ (p.8). Sabbath is not so much about a break from work, but rather a redefinition of how and why we work and the creation of freedom through work (p.82).

According to Allender, the purpose of Sabbath is threefold: to engender ‘a radical entry into shalom’ (p.106), to enable us to say ‘Thank you’ to God (p.126) and to allow such gratitude to open our hearts to freedom and joy (p.140). If these things hold true, then Sabbath eliminates worry for ‘worry is anti-Sabbath’ (p.136).

In the final segment of the book, Allender explores the practice of Sabbath through rituals, symbols, silence and a quest for justice. For Allender, the Sabbath ‘is the day God has created for us to celebrate’ (p.194) creation, redemption and re-creation. Sabbath does not merely look back to creation and redemption but also forward to the re-created joy in God’s presence.

Allender has produced a truly monumental exploration of Sabbath theology. The narrative style of writing and the blend of conceptual work with personal illustration make for compelling reading. However, there is one missing element in the book; it does not raise the issue about which day is Sabbath. It appears to deliberately leave that option open-ended, as if expecting the readers to figure it out for themselves. Nevertheless, I highly recommend this book to every believer seeking a heightened relationship with God.

About the Reviewer

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Book Review


**Introduction**

The author’s vast experience allows him to have a wide personal and professional experience in uncovering the secret of emotional intelligence in leadership. He presents a comprehensive collection of his renowned keys on leadership. It is a proven-effective book that will help develop effective management, performance and innovation.

This book is an excellent device or toolbox for everyone. We all know and notice our emotions and their impact on others. This book will enhance our knowledge as it offers a very comprehensive array of real-world examples ranging from the top leaders, coaches, human resources officers, managers, educators to normal people. Each chapter has a unique and useful advice and guidelines for “leaders”.

**Body**

Goleman, the author of *The Power of Emotional Intelligence* passionately unearths the importance of emotional intelligence in leadership. He believes that the fundamental principles of emotional intelligence are self-awareness, self management, social awareness, and relationship management. This book is an absolute game-changer for anyone wanting to be more successful in their personal or professional lives and want to understand things they are doing that are contributing to their hardship and failure. The author recognizes that both IQ and EI are essential to achieve success in leadership but the author strongly believes that without emotional intelligence, he or she still cannot become a great leader. The author believes that leaders are more art than science.

The author offers a solution in which every leader from all walks of life need to learn and adopt. Every human being is gifted with emotion. Emotion is powerful that can lead to successful collaborations and at the same time if the emotion is not managed in a positive manner, it can lead to destruction. The outcomes can be possibly defined based on how intelligence we are emotionally. Probably you are not an emotionally intelligence individual. Do not worry. This book will shows us that emotion can be learned. The book will show us how emotion is learned through a systematic period of time. Emotion can be learned and can be understood so that we can act it the right way. You may wonder why I need this book because you are already gifted emotionally. This book shows more about the potential and the vastness of emotional intelligence in a sense that you can be more successful leader, the book has it all.

Throughout the book, the author emphasizes the importance of knowing what leadership actually is. He believes that leadership is not domination as many leaders think it should be. Leaders are in a position to persuade people to work toward a common goal.

The focus in this book is not just to define what makes a leader but he goes beyond a definition of what a leader is. He shows the “how”, “where” and “when” leadership styles work. The author has definitely able to clarify various issues related to different stages of leadership. It identifies practical steps to achieving emotional intelligence. The most alluring implication of *Leadership: The Power of Emotional Intelligence* is that greater awareness and control of our emotions on a large scale would mean that greater success can be achieved.
Conclusion

This book has presented various fascinating information about emotions in the workplace. The theories of leadership, particularly in emotional intelligence, has been presented and explored with plenty of scientific evidence written in an accessible style. The content of this book can be utilized for any level and type of leadership. This book is highly recommend to everyone because leaders are indeed in need in so many ways.

About the Reviewer

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Catalyst Publishing Guidelines

Institute Press (IP)
(Revised 2014)

Following are some general guidelines for Catalyst article writing and submission.

1. Catalyst Publishing Guidelines

1.1. Manuscripts should be no more than 12-15 pages in length.
1.2. Manuscripts should be written in correct and standard UK English.
1.3. Manuscripts should be single-spaced.
1.4. Manuscripts should use Calibri font size 11.
1.5. Manuscripts should contain minimal formatting (bold and italics commands are acceptable).
1.6. Manuscripts should not contain editorial controls of any kind.
1.7. Manuscripts which involve tables/diagrams should submit the tables/diagrams in JPEG files and send the files as separate attachment (use a separate JPEG file for each table/diagram).
1.8. Manuscripts should also contain a 150-200 word abstract of the article, a list of key words (optional) and a brief descriptor of the author.

2. Referencing Format

2.1. In order to maintain a consistent look for Catalyst, the APA format is mandatory. While authors may be accustomed to formats that are specific to their particular disciplines, Catalyst would have greater consistency if one format is followed. This APA format would provide the consistency that IP is aiming for.
2.2. Catalyst follows the APA style for endnotes (preferred), in-text citations and references.
2.3. Referencing Samples: Please refer to http://www.apastyle.org/ for questions about referencing, heading and serialisation on the APA format.

3. Submissions Procedure

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3.2. Manuscripts should adhere to the Catalyst Publishing Guidelines; failure to comply with the guidelines may result in the rejection of a submission.
3.3. Manuscripts may be submitted through the online submission system found in "submission request."
3.4. Manuscripts should be submitted by the 30th of April for the July issue, or the 30th of September for the December issue.

4. Review Process

4.1. Manuscripts will undergo a blind review process that may take 1-2 months (depending on the response rate of individual reviewers).
4.2. Authors will be informed of reviewers' comments as soon as they are available.
4.3. Authors will be given about 1 month to revise their papers (should that be necessary) and should return the revised papers to IP by the 1st of July/December.