

## Engineering Students' Views on the Task-Based Project Learning Approach and the Effectiveness of Task-Based Project Learning toward English Courses

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### Abstract

*The objectives of this study were to identify students' perceptions on the project-based learning (PBL) and investigate the effects of the PBL on language achievement, as well as the students' perspective on English, favorable characteristics of English teachers and English language teaching strategies. The sample included students from King Mongkut's University of Technology North Bangkok (KMUTNB), Thailand. There were two groups of students. The first group consisted of 495 first-year students and the second group 325 third- and fourth- year students. To examine the students' perception on the PBL settings, all respondents in this study were asked to complete the questionnaire at the end of the semester. To investigate the effect of the PBL environments, intra-rater reliability was employed. Quantitative data were analyzed via analysis of descriptive statistic and inferential statistic, using the computer program SPSS 17.0. The open-ended information was grouped and qualitatively reported. The results of the study indicated that the students believed that their language skills had improved and they had positive attitudes towards the PBL. The results also revealed that the PBL instruction helped improve the students' creative thinking skills, and collaborative (team work) skills. Importantly, the students reported that they had fun and were happy learning with the PBL activities. These findings can be a valuable resource for language teachers who would like to use the PBL. Discussion and suggestions of the study are included.*

**Keywords:** Project-based learning (PBL), task-based project learning, collaborative learning, perception

### 1. Introduction

Today, English is playing an important role in global communication and is increasingly recognized as an international language in the academic and occupational fields (Gilsdorf, 2002). English is one of the compulsory subjects, from primary school up to college education (Office of the Education Council, 2004). In Thailand, twelve credits of English are now required for a university degree; namely, six in general English and six in English for academic or specific purposes (Foley, 2005). English is also required in the national tests organized by the Office of the Basic Education Commission for students of grades 6 and 9 (Office of the Education Council, 2004: 92).

In order to meet the demands of global economics, a revised English language curriculum in Thailand as well as curriculum development, materials, and teaching and learning facilities were introduced in 1996 (Wongsothorn et al., 2003). As there has been a paradigm shift in the English curriculum in Thailand, from elective to a compulsory subject, language knowledge needs to concentrate on independent work, autonomous learning, and innovation and new technology in English language teaching (Wongsothorn et al., 2003).

However, several researchers have found gaps between what learners have learned and what employers want (Chandavimol et al., 1999; Chuaichuwong and Jarubrut, 2003; Meemak, 2002; Rungnirundorn and Rongsa-ard, 2005; Sawangwarorose, 1994; Supatakulrat and Wasanasomsithi, 2005; Sunthornwatanasiri, 2000; Wongsothorn et al., 2002). That is, the Thai students that scored well on their exams could not perform well at work. The undeniable truth is that Thai students are not encouraged to be vocal or inquisitive; their goal is only to pass the English exam and get the degree or certificate (Simpson, 2011). Most importantly, Thai language learners have exhibited unsatisfactory proficiency in the four skills of English: writing, reading, listening, and speaking, based on the research conducted by the Office of Educational Testing of the Department of Curriculum and Instruction, the Ministry of Education, during the years 1997 and 1998 (Wiriya-chitra, 2001).

The low level of English proficiency of Thai university graduates was confirmed in the studies of Prapphal (2001) and the studies of English proficiency skills in Southeast Asia by Bolton (2008) and Bunnag (2005a, 2005b), as cited in Khamkhien (2010). In 2010, Thailand ranked 116<sup>th</sup> out of 163 countries on the Test of English as a Foreign Language (TOEFL) (Noom-ura, 2013). Consequently, many scholars have attempted to find the causes of the low language ability of Thai learners (Biyaeam, 1997; Dhanasobhon, 2006; Kaewmorakot, 2005; Noom-ura, 2013; ONEC, 2003; Silapasatham, 2007) and concluded that two key factors were probably involved: teachers and learners (Biyaeam, 1997). Thai teachers usually have heavy teaching loads and insufficient English language skills (Biyaeam, 1997; Dhanasobhon, 2006; Noom-ura, 2013; Silapasatham, 2007), and the majority of English teachers simply follow the textbook and choose only the activities that they can teach (Silapasatham, 2007). They lack motivation due to poor pay (Biyaeam, 1997) and there are too many students in a class, while the classrooms are inadequately equipped with educational technology. Moreover, university entrance examinations usually demand a tutorial teaching and learning style (Biyaeam, 1997; Noom-ura, 2013; Silapasatham, 2007).

On the learner side, there are many reasons that cause their low language proficiency. First, they lack the opportunity to use English in their daily lives and do not have confidence in communicating in English (Biyaeam, 1997; Dhanasobhon, 2006; Kaewmorakot, 2005; Noom-ura, 2013; ONEC, 2003; Silapasatham, 2007). They also face interference from the mother tongue (Thai), particularly regarding pronunciation, syntax, and idiomatic usage (Biyaeam, 1997). Many Thai learners are passive learners and are too shy to speak English with their classmates and teachers (Biyaeam, 1997; Pande, 2013). Passing the English examination seems to be the main goal of students in Thailand (Biyaeam, 1997; Silapasatham, 2007). Furthermore, Thai learners are not responsible for their own learning (Biyaeam, 1997; Noom-ura, 2013; Pillay, 2002; Raktham, 2008).

In order to improve the quality of language learning and teaching in Thailand, project-based learning (PBL) has emerged as one of the potential solutions. The PBL has been part of educational practice since the 16<sup>th</sup> century and was first introduced in the architecture schools of Italy (1590-1765) (Tongsakul et al., 2011). PBL is “a systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks” (Buck Institute of Education, 2008). Mapes (2009) stated that traditional and project-based instruction has the same course goals, objective, and outcomes. That is, they have the same dilemma of getting students “to know materials” in a restricted time frame, whereas PBL gives students an opportunity to apply their knowledge in creating their final products (Felder et al., 2000). PBL helps improve communication and collaborative skills, which are considered to be the two important professional skills at work (Hadim and Esche, 2002; Mapes, 2009). PBL improves students’ motivation and gives them a sense of satisfaction (Blumenfeld et al., 1991; Green 1998; Hadim and Esche, 2002; Seet et al., 2010; Tongsakul et al., 2011) and focuses on learning through student-centered, interdisciplinary, and integrated activities in the real world (Solomon, 2003). Many studies (Solomon, 2003; Willie, 2001; Simpson, 2011) have concluded that PBL helps improve students’ language skills, content learning, and cognitive ability, and enhances their confidence, self-esteem, and learning autonomy.

Nonetheless, it is not easy to design a PBL environment that provides a condition which improves students’ motivation (Blumenfeld et al., 1991). PBL is very time-consuming (Helle, Tynjala and Olkinuora, 2006) and usually applies collaborative learning (CL) settings in the classroom. That is, students that are inexperienced in the CL environment may find it difficult (Johnson and Johnson 1989). Moreover, in CL settings, teachers and members of the group have to be able to control the issues or conflicts and keep good relationships among themselves (Roger and Johnson, 1994). If students fail to work together as a group, they may develop a negative attitude toward the CL settings and exhibit negative social interaction behaviors. As some students feel more comfortable with the lecture method, they remain quiet and shy in class (Panitz, 1997). Some studies found that the students felt that the project work took their attention away from their learning since they have to work hard to complete a project (Beckett, Mouton, and Holmes, as cited in Beckett and Slater, 2005). Many studies, however, have demonstrated the advantages of using PBL in educational settings (Meyer, 1997; Blumenfeld et al., 1991; Green, 1998; Hadim and Esche 2002; Tongsakul et al., 2011), though they rarely examined this methodology in the language classroom. Some researchers examined the students’ perception and found positive attitudes toward PBL (Tongsakul et al., 2011; Poonpun, 2011).

In Thailand, a few studies investigated the effectiveness of PBL quality in terms of Thai students' English achievement, most of which investigated the use of PBL with secondary school and primary school students (Moonsarn, 2006; Pansawat, 2008; Simpson, 2011; Sritiwong, 2000; Suriya, 2000; Termprayoon, 2002). Only one study, that of Simpson (2011), investigated the effectiveness of PBL in relation to Thai university students' English language proficiency. This study attempted to investigate engineering students' perception and the effectiveness of PBL, which was implemented as task-based project learning in an English course at King Mongkut's University of Technology North Bangkok (KMUTNB), Thailand. Using the PBL in language learning and teaching for engineering students was rather new at KMUTNB, even though the students were familiar with PBL as it was used as a teaching method for other subjects. To graduate a bachelor degree, they are required to create a project related to their major and interests, and to develop it in a group of three students for two years and then submit it to a committee. However, in this study using the PBL in the English classroom was new for these students; the study examined the learners' perception of PBL, as well as its effectiveness, on a small scale before implementing it on a full scale.

In the PBL environment, the students had to organize their own work and manage their own time in group work environment (Mapes, 2009). If this study were able to prove that the students had positive attitudes toward the PBL instruction, the issue of the irresponsibility of Thai language learners might be solved. As a result, the PBL could be used as a language teaching and learning method in practice, and in the future, other researchers might want to thoroughly investigate how the PBL methodology can enhance the four language skills. On the other hand, if the study were to reveal the negative impacts of PBL, the researcher would be able to examine the causes, figure out possible solutions, and make suggestions to other researchers that are interested in implementing PBL in the language classroom.

## ***II. Purposes of the Study***

The purposes of the study are:

1. to examine the students' perspectives of the roles of English in Thailand
2. to investigate the characteristics of KMUTNB students
3. to investigate the students' viewpoint of PBL (i.e. task-based project learning)
4. to investigate the students' viewpoint of the PBL used for English courses in terms of genders and gender characteristics (i.e. introverted vs. extroverted), and
5. to examine the effectiveness of PBL when it is implemented as a task-based project

## ***III. Research Questions***

This study attempts to answer the following questions.

1. What are the students' perspectives of the role of English in Thailand?
2. What are the key characteristics of KMUTNB students?
3. How do students perceive PBL (i.e. task-based project learning)?
4. Do females have the same perception of PBL as males? Do extroverts have the same perception of PBL as introverts?
5. How effective is PBL when it is implemented as a task-based project?

## ***IV. Research Methodology***

### ***4.1 Respondents***

There were two groups of students in this study. The first group comprised the first-year students enrolled in English Foundation II. The population of the first group was approximately 2,439 students and the sample was 495 first-year students of KMUTNB (i.e. 20.35%). Of the 495 students, 72% (357) were male and 27% (135) female. Three people did not identify their gender. The average grade for the English Foundation I course was "C" and the average time studying English was 12.5 years. The second group comprised the second- or third-year students enrolled in English for Work, totaling 866 students. The sample for this study was 325 third- and fourth-year students of KMUTNB or 37.5% of the population. Of the 325 students, 87% were male (282) and 13% were female (42). One person did not identify his/her gender. The average grade for the English II course (prerequisite course) was "C" and the average time studying English was 13.1 years.

## 4.2 Settings

The students in this study were in the science field, most of whom were in engineering following by applied science, technical education, and information technology as their major studies. They studied in the English Foundation II course and English for Work course for about 3 hours a week. The first group of students was required to make VDO clips of topics related to what they learned in the classroom as their final product. The second group was required to make company presentations. The students were asked to set up a company and used the VDO clips as a medium for advertising the company products. The task-based project work in this study aimed at improving the students' reading, writing, listening, speaking, vocabulary, and communicative competence, to help them apply their knowledge from what they had learned in the classroom, as well as to enhance their collaborative learning skills and increase their motivation and achievement.

*Group one.* The first group was assigned to work in a group of five members and to prepare a video presentation on topics from the textbook (Global–Pre intermediate). The students were free to select topics under five themes (i.e. science & technology, time & money, home & away, health & fitness, and new and old). The video had to last for at least 7 minutes. At the end of the semester, nine of the thirty-five teachers that taught this course were selected to distribute the questionnaire (Appendix 1) to the students within the same week so as to have a high response rate.

*Group two.* The second group was assigned to work in a group of seven to nine members and prepare a presentation. The students had to set up their own business and presented their company profile, including history, policy, plans, targets, trends, and so on. They were required to apply the 4'Ps' (i.e. products, price, place and promotion) marketing mix to their VDO presentation in order to advertise their company's products. The time allotted for the presentation was 20-30 minutes. In order to achieve a high response rate, the questionnaire was distributed by four of ten teachers that had taught the course immediately after the presentation. All of the students returned the questionnaire in person to the teachers that had taught them. Approximately ninety-eight percent of the students that received the questionnaire completed and returned it. In order to investigate the quality of the task-based project work, the performance of three groups of each class was assessed using marking criteria and an evaluation rubric for the video clip or oral presentation (Appendix 2). Table 1 shows the details of the selected clips used to evaluate the students' performance.

## 4.3 Instruments

The three instruments used in this study included (1) the questionnaire for eliciting the students' points of view of PBL, (2) the marking criteria and evaluation rubric for their oral presentation skills, and (3) the marking criteria and evaluation rubric for the video presentation. These three instruments were designed by the researcher and the quality was assessed by three experts.

*4.3.1 The attitude questionnaire.* In order to measure the students' viewpoint on the PBL approach, the questionnaire was based on two characteristics of communication and interaction or learning styles, introverted and extroverted, suggested by Brown (2002). The questionnaire consisted of three parts (Appendix 1).

Part one entailed general information about the students (items 1-3), the necessity of studying English (item 4), the students' opinion on the characteristics of an English teacher they liked (item 5), and their favorite teaching strategies (item 6). Item 4 entailed 9 sub-items of the five-point Likert scale questionnaire (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, and 1 = strongly disagree). Part two contained nine items, based on the two characteristics of communication and interaction with other people: extroversion and introversion (Brown, 2002). Part three consisted of fifteen statements on the project the students were assigned to work on for the whole semester. The 15 statements used a five-point Likert scale questionnaire (i.e. 5 = very satisfied, 4 = satisfied, 3 = neither satisfied nor dissatisfied, 2 = dissatisfied, 1 = very dissatisfied). In order to obtain useful suggestions or opinions, a place for an open-ended answer was provided.

*4.3.2 Marking criteria and evaluation rubric for the video clip.* The quality of the VDO clip was assessed by the marking the criteria and evaluation rubric adapted from rubric of the University of Wisconsin, consisting of five domains: preparation, language use, content, production quality, and extra credit (Appendix 2).

*4.3.3 Marking criteria and evaluation rubric for the oral presentation skills.* The final products for the English for Work course were the VDO clips and oral presentation skills (spoken language).

There are five indicators of the assessing criteria for students' oral business communication (i.e. language use, performance, presentation techniques, and teamwork) (Appendix 2).

#### 4.4 Data Analysis

The students' perspectives on PBL were analyzed using descriptive statistics and inferential statistics. The arithmetic mean and t-test independent sample were calculated using the SPSS 17.0 program. The open-ended information was compiled and assessed qualitatively. In order to investigate the effectiveness of PBL, the final products of group 1 and 2 were selected, using the convenient sampling technique.

#### V. Limitations of the Study

1. The fact that intra-rater reliability–Pearson correlation coefficient ( $r$ ) was used in assessing the effectiveness of the task-based project learning. As the researcher knew the students very well, it might not fair to ask other raters to justify their performance. Therefore, intra-rater reliability was applied instead. The final products were evaluated twice over a 2-week duration. In the future, other researchers may apply inter-rater reliability as an instrument to evaluate students' language performance, and if other researchers would like to know about the students' performance and behavior, the rater should be one of the teachers that teaches the students in the classroom in order to accurately evaluate their language performance. Furthermore, the students' viewpoint on PBL should be included as evidence of PBL's quality as well.
2. None of the participants was interviewed since the information from the questionnaires was sufficient for answering the research questions. However, if other researchers wanted to recheck the results or obtain in-depth information, the interview method was useful.
3. The instruments used in this study, namely, the questionnaire and evaluation criteria for assessing students' performance, might not be able to be generalized because they were developed to suit the objectives of this study.
4. In practice, the completed PBL settings might not be easy to implement. For example, the two English courses (i.e. English I is a compulsory course and English for Work is an elective course) are required to have evaluation criteria set and controlled by the Faculty of Applied Arts, where the students are required to attend class regularly and take mid-term and final exams, and the researcher had no right to control the evaluation criteria. However, the researcher was able to control the criteria for assessing the students' performance for the VDO project and presentation. Secondly, since it was the first time that the PBL settings were introduced in the language classroom at KMUTNB, it may have been unfair to place the KMUTNB students in an unfamiliar language learning environment with completed PBL settings.

#### VI. Results and Findings

**Analysis of Research Question One: Students' Perspectives on English.** The results of the arithmetic means regarding the students' perspectives on English are presented in Table 2. As shown there, it appears that overall, both groups of respondents had positive attitudes toward the English language. That is, they reported that they were happy to study English (group 1:  $M=3.66$ , group 2:  $M = 3.72$ ). The respondents thought that English had an important role in the global community (group 1:  $M=4.66$ , group 2:  $M = 4.74$ ) and that knowledge of English offered more opportunity for getting good jobs (group 1:  $M=4.68$ , group 2:  $M = 4.78$ ). Interestingly, the respondents reported that English was one of the difficult subjects to study (group 1:  $M= 3.15$ , group 2:  $M = 3.25$ ) and they indicated that they always lost their confidence when communicating in English (group 1:  $M=3.54$ , group 2:  $M =3.72$ ). In this part, two statements were asked in an attempt to learn the students' viewpoints about their favorite English language teachers' characteristics and teaching strategies.

**English Language Teachers' Characteristics.** The findings showed that the characteristics of the English teacher had a great influence on their English learning (96.8%). Only 1% (5 respondents) believed otherwise, and there was no answer from 11 respondents (2.2 %).

The open-ended statement was completed by 427 students in group 1 and 282 students in group 2. 241 of 427 students (56.44 %) and 166 of 282 students (58.86%) reported that they would like to have teachers that are kind, friendly, and humorous, and teachers that give clear explanations and use good examples (i.e. group 1–group 2:123–89 students). Some (i.e. group 1–group 2:108–75 students) mentioned that they wanted to have a teacher that was patient and had a caring attitude, and some suggested that they wanted to have English native speakers as their English teachers (i.e. group 1–group 2:15–4 students).

Twelve students reported that teachers should listen to students and focus on error correction. Eight students would like to have teachers that are sexy, attractive, cute, and beautiful.

*English Language Teaching Strategies.* The teaching strategies or styles that students preferred were reported in this part. The students mentioned that teachers should provide interesting and meaningful activities, especially games (i.e. group 1–group 2: 104–82 students). Some suggested using technology (i.e. online and video presentations) in the classroom (i.e. group 1–group 2: 16– 6 students). Other thought that relevant real world examples, and personal and professional life experience, should be included (i.e. group 1–group 2: 7–6 students). Nine students wanted to learn integrated English in one lesson (i.e. group 1–group 2: 7–2 students).

*Analysis of Research Question Two: Characteristic of Learners.* There were two learner characteristics in this study, namely, introverted and extroverted. The findings suggested that the KMUTNB respondents were extroverted students, who liked to practice their English with other people and talk with their classmates when doing group work in class (in Table 3). Both groups preferred group work (i.e. group 1–group 2: 415–275 students). Interestingly, the findings reported that the respondents usually felt peaceful and calm when they were alone (i.e. group 1–group 2: 298–210).

*Analysis of Research Question Three: The Students' Perception of Task-Based Project Learning.* The results of the students' perception of PBL activities are shown in Table 4. Overall, the respondents had positive attitudes towards the PBL activities. That is, the arithmetic mean for the positive attitude statements was high ( $M > 3.50$ ). The results also suggested that the respondents believed that the PBL activities helped them develop team work skills (group 1:  $M = 3.97$ , group 2:  $M = 4.10$ ) and that their English abilities had improved after studying using the PBL activities (group 1:  $M = 3.77$ , group 2:  $M = 3.94$ ). Most importantly, most respondents believed that the project activities were applicable, especially in applying the knowledge in everyday life.

*Analysis of Research Question Four: A Comparison of the Respondents' Perception of the PBL Activities Based Regarding Gender and Characteristics.*

*Based on gender.* There were 357 males and 135 females in group 1. As shown in Table 5, overall, the females had the same perception of PBL as the males. That is, the respondents had positive attitudes toward the PBL activities. The arithmetic mean showed that the respondents believed that the project activity was an interesting method (males:  $M = 3.72$ ; females:  $M = 3.81$ ) and that PBL helped them to develop their teamwork and creative thinking skills (males:  $M = 3.80$ ; females:  $M = 3.96$ ). However, there were significant differences in perception between males and females regarding certain issues (i.e. items 3, 4, 5, 7 and 8).

The members of group 2 comprised 282 males and 42 females. The results showed that there were no differences in the respondent's perception of the PBL activities based on gender (in Table 6). That is, both males and females had positive attitudes towards the PBL activities. However, there were significant differences in the perception between the males and females regarding two issues (i.e. item 6 and 9).

*Based on the characteristics of learners (i.e. extroverts and introverts).* There were 357 extroverts and 127 introverts in Group 1 (in Table 7). In general, there was no difference in the viewpoints regarding the PBL activities between them. That is, both extroverts and introverts had positive attitudes towards the PBL activities. The report revealed that the respondents believed that the project was interesting, that they were happy and had fun learning English with the PBL activities, and that the PBL activities helped them improve their creative thinking skills. However, the extroverts and introverts had different perceptions of the PBL activities regarding five issues (i.e. items 3, 4, 5, 7, and 8). As shown in Table 8, 217 respondents in group 2 were extroverts, 104 were introverts. Overall, there was no significant difference in the viewpoints between them regarding the PBL activities. Both extroverts and introverts had positive attitudes toward the PBL activities. They reported that the project helped them improve their English, team work, and creative thinking skills, and provided them with an opportunity to improve their democratic thinking skills. Most importantly, they were happy and had fun learning English with the PBL activities (extroverts–introverts:  $M = 4.02$ – $M = 3.88$ ). There was only one issue that the extroverts and introverts viewed differently (i.e. item 15).

*Analysis of Research Question Five: The Effectiveness of the PBL Activities.* The consistency of the VDO clips and oral presentation scores–Pearson coefficient ( $r$ ) correlation was 0.97 and 0.98, indicating that the scores were reliable (in Table 9 and 10). Overall, when comparing the two main criteria (i.e. content and language use), the average scores for the VDO suggested that the students performed very well regarding the “content” indicator (i.e. VDO: 29.49 points out of 42 = 70.21 percent).

Similarly, the average scores for the oral presentation suggested that the students performed impressively regarding the “content” indicators (i.e. content: 26.31 points out of possible 42 = 62.63 percent). As shown in Table 9, the highest scores was the “preparation script” indicator (i.e. 12.68 out of possible 15 = 84.54 percent) whereas the lowest scores was the “language” indicator (i.e. 22.03 points out of possible 36 = 61.19 percent). This suggested that the respondents worked well in groups (i.e. 4.11 points out of possible 5:82.2 percent). As shown in Table 10, the students performed very well regarding the “presentation technique” indicators (i.e. 10.03 points out of possible 12 = 83.56 percent). The lowest scores was the “language” indicator (i.e. 22.53 points out of possible 36 = 62.58 percent). Table 10 firmly confirms that the respondents worked well in groups (8.22 points out of 10 or 82.22 percent).

### **VII. Discussion and Recommendations**

This study aimed to explore the students’ point of view of PBL and its effectiveness used in the language class. The findings of the study are systematically discussed in five parts according to the research questions.

**Roles of Learning English in Thailand.** The finding clearly confirmed that students have a positive attitude toward the English language and recognize that English is important in the global community. They also realize that employers in Thailand demand fluent English communication skill from employees. These results are in line with the studies of Meemak, (2002), Rungnirundorn and Rongsa-ard (2005), Supatakulrat and Wasanasomsithi (2005), Wongsothorn et al. (1980), Chandavimol et al.(1999), Wongsothorn et al. (2002), Sunthornwatanasiri (2000), Kanchanasatit(1980), Sawangwarorose (1994), Chuaichuwong and Jarubrut (2003).

A plausible reason for the students' low ability was that they believed that English is a difficult subject to study and that they lose confidence when communicating in English. Details are as follows.

First, as Thai is the official language in Thailand, students lack an opportunity to use English in their daily life (Biyaeam, 1997; Dhanasobhon, 2006; Kaewmorakot, 2005; Noom-ura, 2013; ONEC, 2003; Silapasatham, 2007). Since the students are placed in an environment that does not allow them to practice English much (Wiriyaichitra, 2003), it is very difficult for them to be proficient in all four skills of English.

Next, in order to learn a foreign language, motivation or willingness to learn is key to helping students enjoy L2 learning (McDonough, 1983; Ellis, 1994). The students’ motivation comes from their beliefs (Bernat, 2008). If the students believe that English is important, their motivation may increase and their achievement in the second language is likely to increase as the two factors are related (Ehrman, Leaver and Oxford, 2003). Therefore, an “appropriate teaching method and learners’ motivation” could be the solution to the students' low ability. This study discussed only motivation. Research on the factors that induce practice with the target language in real life is very important, even though there are complex phenomenon and many other important components, such as individual drives, the need for achievement and success, curiosity, the desire for stimulation, and so on (Pande, 2013).

One interesting factor found in this study was the characteristics of English teachers. The findings confirmed that teachers’ characteristics had a great influence on the students' English proficiency and their fascination. Students also reported that they really loved games or fun activities and believed that these types of activities could be included in the learning process in class. This study was in substantial agreement with the studies of Biyaem (1997), Chanseawraamee (2012), Nguyen (nd.), and Young (2013), which concluded that teaching and learning in Thailand should include “fun” activities. This is also in line with the educational policy issued by the Thai government in 2002. Young (2013:p.6) gave important advice on the incorporation of “sanok or fun” in the classroom to enhance the learning process:

“...Without the ability to analyze, question, and challenge information presented by the Thai teacher, a “fun” lesson may be seen as just that, with entertainment becoming the detrimental factor in learning, thus diminishing the importance of the learning process as well as turning one’s grade point average into an indication at how well one “played” rather than achieved.” A “fun” lesson is a useful strategy and seems to be a favorite strategy in Thailand. However, the teachers should use it very carefully. When introducing a game in class, language teachers must design it meaningfully and the number of students, proficiency level, cultural context, timing, learning topic, and the classroom settings must be taken into consideration (Nguyen and ThiKhuat, 2003).

**The Characteristics of KMUTNB Students.** The characteristics of Thai learners as summarized by many scholars might cause difficulty in teaching and learning the English language in Thailand. For example, Hofstede (2001) concluded that Thai national culture is characterized by high power distance, high uncertainty avoidance, low individualism, and low masculinity. Thais like to be “calm” since it might not be proper to express anger, dislike or argument in public (Tetiawat and Huff, 2002) and to express one’s ideas or any arguments within the class or outside the class seems to be inappropriate behavior (Jarvis and Atsilarat, 2004). This particular characteristic affects the learning style of Thai students as they are passive learners and nonverbal in class and need a lot of guidance from the teachers (Boondao, 2003). The passive learning style is deeply rooted in Thai students because of the traditional teacher-centered instruction in Thailand (Miller et al., 2004). Thai students are told to sit “neatly and silently” since it is an acceptable behavior in society (Tetiawat and Huff, 2002). They possibly believe that keeping quiet seems to be the best way to protect themselves from losing face in front of the classroom.

In terms of social orientation, many studies (Ehrman and Oxford, 1989; Polizer, 1983; Oxford and Nyikos, 1989) have concluded that females show greater social orientation. However, the findings of this study were different. The findings indicated that KMUTNB students (most were male) were extroverted. They liked to practice their English with other people and talk with their classmates when doing group work in class. These results are in agreement with those of Young (2013), who concluded that Thais usually look primarily to their referent social groups in order to make sense of their roles and behavior. That is, they behave or believe in the same direction of the group and their opinions need to be respected by the group. The relationship between extroversion and learning success was not examined in this study and is a potential research topic for the future. Another interesting characteristic of KMUTNB students is that they are familiar with collaborative learning or group work. This is because they have to complete an undergraduate project or thesis in groups of three or four. However, the task-based project used in this study was new to the students since it was introduced in an English course, with English as the medium of communication for the first time. Although the students' language ability was relatively low, it did not obstruct their creative thinking. Another surprising behavior was that the majority of students, including those that were “quiet” in class performed differently in the VDO project and VDO advertising clip. They showed their enjoyment in creating resourceful and fun clips. One possible reason might be the visual media, which can help protect them from losing face in front of the class (Biyaem, 1997; Noom-ura, 2013; Pillay, 2002; Tetiawat and Huff, 2002).

**Students' Perception of Project-Based Learning.** The results showed that the respondents had positive attitudes towards the PBL activities. Moreover, overall, both genders had the same perception (i.e. positive attitudes) of PBL. Most importantly, the percentages of the two groups, as shown in Table 9 and 10 (i.e. group 1– 4.11 points out of possible 5: 82.22 percent and group 2–7.25 out of possible 10: 82.22 percent) confirmed the effectiveness of PBL in collaborative learning settings. This finding is in line with others studies, for example, those of Beckett & Slater (2005), Benson (2001), Hadim and Esche (2002) Hung et al. (2012), Mapes (2009), McCarthy (2010), Moulton and Holmes(2000), Tongsakul et al. (2011), Simpson, (2011), and Wilhelm (1999). They all suggested that the PBL environment is a suitable EFL learning process. Interestingly, the respondents in this study were happy and had fun learning English with the PBL activities and they viewed them as an interesting learning method. As mentioned before, in Thailand the methods of teaching and learning a target language should apply fun activities (Fry, 2002). The “fun” environment for the PBL activities in this study might have helped the students improve their creative thinking skills, as shown in Table 4 and 5.

**Effectiveness of Project-Based Learning.** As shown in the content indicator in Table 9 and 10, the KMUTNB students performed very well. They were able to apply what they had learned in actual academic situations. Despite their low English ability, their “persistent” effort (especially students in Group 2) illustrated a positive attitude toward language learning. The students'willingness to give English presentations in front of the class, talk about an unfamiliar business topic, and contribute to formal discussions (in English) during their presentation proved their potential language proficiency.Their positive attitudes toward English learning could lead them to being successful language learners in the future, as concluded by Skehan (1989) that positive attitudes contributed to the success of language learning. Interestingly, as mentioned before, one significant obstacle in this study was the low language proficiency of the students. However, the features of the PBL contributed an excellent way to promote creative thinking, since the students did not have to follow strict guidelines under the framework of PBL. Rather they could improvise, come up with solutions to the problems they encountered, and find alternative ways to do a task (Iakovos, 2011).

The final products of this study and the students' view on the quality of PBL (Table 4) provide evidence that PBL can foster creative thinking on the part of students. This finding was in substantial agreement with that of Hung (2009), Iakovos (2011), and Tully (2009)—creative thinking skills should be taken into consideration when teaching, as a friendly, supportive, and non-threatening classroom atmosphere can have positive impacts on the student's motivation and language performance (Little, 1997).

The final products (VDO clips and oral presentation) and the students' performance provided good empirical evidence that the students understood, recalled, analysed, and applied what they had learned and created with their own projects. That is, the process of acquiring knowledge took place. The students also agreed that whenever they have a chance to attend an English course, they really want to have a project activity since they believed that a project can help them improve their English more effectively (Table 4). The success of PBL might be attributed to safe learning environment features (i.e. PBL features, collaborative learning, and VDO features). Since under PBL students can choose their topics of study, and can set their own learning goals and process. As a result, the students' confidence, motivation, and attitudes toward learning English were engaged. This study was in substantial agreement with several studies (Finch, 2003; Green, 1998; Hadim and Esche, 2002; Mapes, 2009; Newell, 2003; Stanley, 2000; Stoller, 2006; Tongsakul et al., 2011). The students stated clearly that the project activities helped them feel confident and relaxed (Table 4). The findings also provided evidence that PBL can help improve the students' English skills, as shown in Table 9 and 10. In addition, as the students had to interact with each member of their group, share their ideas, provide feedback, and make conclusions, they reported that their collaborative learning skills had improved and they were happy to work in group. Most importantly, the students worked collaboratively, put great effort into completing their projects, and tried very hard to use English so that each member of the group could make effective and meaningful presentations. The findings of this study were in line with Cheng (2006), Poonpun (2011), Simpson (2011), Srikrui (2008), and Stanley (2000). Hence, PBL should be used more frequently in the English classroom in Thailand as it has proven to be a fun and effective method of enhancing language learning, creative thinking, and teamwork skills with many supporting studies by Beckett and Slater (2005), Benson (2001), Brenna and Hugo (2013), Hung, et al. (2012), Moulton and Holmes (2000), Simpson (2011), Tongsakul et al. (2011), and Wilhelm (1999). The VDO features contributed to the students' confidence in learning the target language. Since their L2 performance anxiety was reduced, their L2 self-confidence increased. This study was in substantial agreement with those of Horwitz et al. (1986), Park and Lee (2005), Philips (1992), Roed (2003), Toth (2008), Xiaoyan (2009), and Woodrow (2006), which investigated the correlation between anxiety and performance. For example, according to Roed (2003), a low level of inhibition and anxiety could be advantageous in foreign language learning.

### ***VIII. Conclusion and Suggestions***

This study explored the students' opinion about project-based learning and the effectiveness of PBL in enhancing their language skills. The findings led the researcher to believe that PBL is beneficial and suitable for the language classroom since the students stated that the project helped them improve their English skills and their confidence in using English and that they would like to learn language using the PBL method if they have a chance. Although the task-based project learning in this study was implemented as "activities" in the course, it has proved to have incredible value for language education. The experience of the task-based project learning in the English courses at KMUTNB indicated many positive results. The challenge is in the grading system design if PBL is used in a language course where assessment criteria are based completely on language performance. Other challenges for full PBL implementation include the following questions: 'Are the students ready in terms of language proficiency for full-scale PBL?', 'Are the students actively involved in the end-product of the project?', 'Do the teachers have reliable resources for the students to learn in a PBL environment?', 'Do the instructors created an appropriate classroom atmosphere for the PBL activities?', 'Do the instructors have the necessary skills to implement PBL?' For example, non-English major students may find it difficult to learn English in the PBL environment. Even English major students need to have appropriate guidance or support from teachers in such an environment.

It is also important to acknowledge the limitations of this study, and to be careful when generalizing the findings. Further studies may want to investigate the effect of project-based learning on academic achievement or language achievement, the attitudes of teachers and learners toward PBL, and the levels of L2 anxiety, self-confidence, self-efficacy, and motivation of students when they are placed in PBL settings.

The advantages and disadvantages of PBL implementation regarding the development of thinking and professional skills should be examined as well. In conclusion, there is certainly room for the PBL approach in language learning and teaching. The challenge is how teachers can design a “safe” environment so that learners can learn effectively and enjoyably in the Thai context.

**Note:** Appendices 1-2 are available

[http://www.mediafire.com/view/wo6naxdo8amy219/Rubric\\_for\\_VDO\\_and\\_Presentation.pdf](http://www.mediafire.com/view/wo6naxdo8amy219/Rubric_for_VDO_and_Presentation.pdf)

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**Table 1: Details of Selected Clips to Evaluate Students' Performance**

Class	Group 1			Group 2		
	1	2	3	1	2	3
Numbers of clips or presentations	3 clips	3 clips	3 clips	3 presentations	3 presentations	3 presentations

**Table 2: Mean Scores of the Students' Attitudes towards English language**

No.	Statements	Arithmetic mean			
		Group 1		Group 2	
		No.	Mean	No.	Mean
1	Learning English helps develop my skills to living global community.	495	<b>4.66</b>	325	<b>4.74</b>
2	Learning English helps increase myself-confidence.	495	4.04	325	4.17
3	Learning English does not help improve my life condition.	493	1.99	321	1.89
4	When I have to speak English, I always lose myself-confidence.	490	3.54	323	3.72
5	English is very difficult subject.	494	3.15	323	3.25
6	I do not like studying English.	495	2.53	322	2.57
7	Learning English helps create my creative ability.	491	3.60	323	3.64
8	Knowledge of English offers a high opportunity to get good jobs.	493	<b>4.68</b>	324	<b>4.78</b>
9	I am very happy to study English.	495	3.66	324	3.72

**Table 3: Frequency and Percent of the Characteristics of KMUTNB Students**

No.	Statements	Frequency and Percent			
		Group1		Group2	
		missing	answer	missing	answer
1	I usually like working with other people.	9(1.8%)	397(80.2%)	5(1.5%)	265(81.5%)
	I like working alone.		89(18.0%)		55(16.9%)
2	I am easy for people to talk with.	10(2%)	358(72.3%)	4(1.2%)	217(66.8%)
	I am somewhat shy.		127(25.7)		104(32.0%)
3	I am happy when I am with other people.	23(2.6%)	401(81.0%)	4(1.2%)	257(79.1%)
	I am happy when I am alone		81(16.4%)		64(19.7%)
4	At a party, I start conversations with people I do not know.	10(1.8%)	242(48.9%)	7(2.2%)	165(50.8%)
	At a party, I wait for someone to talk with me.		243(49.1%)		153(47.0%)
5	I solve problems better by talking with others about it.	11(2.2%)	314(63.4%)	5(1.5%)	198(60.9%)
	I solve problems better by analyzing them in my own.		170(34.3%)		122(37.5%)
6	In my free time, I prefer to go out with other people.	13(2.6%)	214(43.2%)	5(1.5%)	140(43.1%)
	In my free time, I prefer to stay at home by myself.		268(54.1%)		180(55.4%)
7	Talking with people I do not know is interesting and exciting.	13(2.6%)	355(71.7%)	5(1.5%)	237(72.9%)
	Talking with people I do not know is difficult and makes me tired.		127(25.7%)		83(25.5%)
8	When I am by myself I usually feel lonely and anxious.	12(2.4%)	185(37.4%)	6(1.8 %)	109(33.5 %)
	When I am by myself I usually feel peaceful and calm.		298(60.2%)		210(64.6 %)
9	In a classroom I prefer group work with other students	12(2.4 %)	415(83.8%)	4(1.2%)	275(84.6%)
	In a classroom I prefer individual work on my own.		68(13.7%)		46(14.2%)

**Table 4: Mean Scores of the Students' Perception on the PBL activities**

No.	Statements	Group 1		Group 2	
		Mean	rank	Mean	rank
1.	The project was an interesting method	3.73	6	3.81	5
2.	I really like the project activity.	3.35	10	3.42	8
3.	The project helped improve my English skills at present and in the future.	3.77	5	<b>3.94</b>	<b>2</b>
4.	The project helped develop teamwork skills.	<b>3.97</b>	<b>1</b>	<b>4.10</b>	<b>1</b>
5.	The project provided an opportunity to improve democracy thinking skills. Now, listened to my colleagues' opinions and accepted the different points of views.	3.78	4	3.88	4
6.	The project helped improve my creative thinking skills.	<b>3.83</b>	<b>2</b>	3.90	3
7.	Learning English with the project-based activity made me happy and fun.	3.79	3	<b>3.94</b>	<b>2</b>
8.	The project made me feel bored and I did not want to study with this method	2.51	12	2.58	11
9.	I did not like working group because our group was involved in the fighting.	2.27	14	2.35	13
10.	There was no English skills improvement after using the project activity.	2.29	13	2.43	12
11.	If I have chance to study English course, I really want to have a project activity.	3.44	9	3.57	7
12.	The project activity was timewasting and time consuming.	2.08	15	2.21	14
13.	The project activity helped create opportunity for communication. Whenever I made mistakes, I could revise them to be a perfect assignment.	3.55	7	3.60	6
14.	The project activity made me feel confident and relaxing.	3.47	8	3.40	9
15.	The project activity makes me stress and exciting. I am somewhat shy when I was being part of the activity.	2.81	11	3.30	10

**Table 5: A Comparison of the Respondents' Perception toward the PBL Activities Based on Gender Differences (Group 1)**

No.	Statement	Gender		M	SD	Mean differences	t	P
1.	The project was an interesting method.	male	357	3.72	1.076	-.09	-.962	.337
		female	135	3.81	.824			
2.	I really like the project activity.	male	357	3.35	1.186	-.07	-.655	.513
		female	135	3.41	.949			
3.	The project helped improve my English skills at present and in the future.	male	357	3.71	1.168	-.27	-2.677	<b>.008*</b>
		female	135	3.99	.946			
4.	The project helped develop teamwork skills.	male	357	3.92	1.141	-.25	-2.663	<b>.008*</b>
		female	135	4.17	.860			
5.	The project provided an opportunity to improve democracy thinking skills. Now, listened to my colleagues' opinions and accepted the different points of views.	male	357	3.71	1.151	-.33	-3.388	<b>.001*</b>
		female	135	4.04	.876			
6.	The project helped improve my creative thinking skills.	male	357	3.80	1.121	-.16	-1.570	.117
		female	135	3.96	.937			
7.	Learning English with the project-based activity made me happy and fun.	male	357	3.74	1.191	-.24	-2.288	<b>.023*</b>
8.	The project made me feel bored and I did not want to study with this method	male	357	2.58	1.246	.23	2.101	<b>.037*</b>
		female	135	2.35	1.046			
9.	I did not like working group because our group was involved in the fighting.	male	357	2.31	1.189	.11	1.033	.303
		female	135	2.21	.947			
10.	There was no English skills improvement after using the project activity.	male	357	2.35	1.238	.19	1.882	.061
		female	135	2.16	.929			
11.	If I have chance to study English course, I really want to have a project activity.	male	357	3.43	1.625	-.07	-.563	.573
		female	135	3.50	1.029			
12.	The project activity was timewasting and time consuming.	male	357	2.11	1.263	.07	.601	.548
		female	135	2.04	1.050			
13.	The project activity helped create opportunity for communication. Whenever I made mistakes, I could revise them to be a perfect assignment.	male	357	3.54	1.191	-.09	-.935	.351
		female	135	3.63	.920			
14.	The project activity made me feel confident and relaxing	male	357	3.45	1.195	-.12	-1.191	.235
		female	135	3.57	.869			
15.	The project activity makes me stress and exciting. I am somewhat shy when I was being part of the activity.	male	357	2.83	1.268	.04	.351	.726
		female	135	2.79	.923			

p &lt; 0.05

**Table 6: A Comparison of the Respondents' Perception toward the PBL Activities Based on Gender Differences (Group 2)**

No.	Statement	Gender		M	SD	Mean differences	t	P
1.	The project was an interesting method.	male	282	3.79	.952	-.14	-.894	.372
		female	42	3.93	.778			
2.	I really like the project activity.	male	282	3.41	.992	-.06	-.398	.691
		female	42	3.48	.943			
3.	The project helped improve my English skills at present and in the future.	male	282	3.94	.986	.04	.230	.818
		female	42	3.90	1.185			
4.	The project helped develop teamwork skills.	male	282	4.10	.944	-.05	-.340	.762
		female	42	4.14	.899			
5.	The project provided an opportunity to improve democracy thinking skills. Now, listened to my colleagues' opinions and accepted the different points of views.	male	282	3.87	.953	-.08	-.753	.454
		female	42	3.95	.582			
6.	The project helped improve my creative thinking skills.	male	282	3.86	.972	-.30	-1.972	<b>.049*</b>
		female	42	4.17	.621			
7.	Learning English with the project-based activity made me happy and fun.	male	282	3.92	1.035	-.20	-1.192	.234
		female	42	4.12	.889			
8.	The project made me feel bored and I did not want to study with this method	male	282	2.54	1.208	-.35	-1.735	.084
		female	42	2.88	1.173			
9.	I did not like working group because our group was involved in the fighting.	male	282	2.28	1.209	-.53	-2.591	<b>.010*</b>
		female	42	2.81	1.401			
10.	There was no English skills improvement after using the project activity.	male	282	2.39	1.224	-.35	-1.743	.082
		female	42	2.74	1.191			
11.	If I have chance to study English course, I really want to have a project activity.	male	282	3.54	1.135	-.20	-1.048	.296
		female	42	3.74	1.083			
12.	The project activity was timewasting and time consuming.	male	282	2.17	1.136	-.30	-1.566	.118
13.	The project activity helped create opportunity for communication. Whenever I made mistakes, I could revise them to be a perfect assignment.	male	282	3.59	1.017	-.11	-.626	.532
		female	42	3.69	1.024			
14.	The project activity made me feel confident and relaxing	male	282	3.40	1.110	.00	-.003	.998
		female	42	3.40	.939			
15.	The project activity makes me stress and exciting. I am somewhat shy when I was being part of the activity.	male	282	3.26	1.226	-.36	-1.784	.075
		female	42	3.62	1.081			

p &lt; 0.05

**Table 7: A Comparison of the Respondents' Perception toward the PBL Activities Based on Characteristics of Learners (Group 1)**

No.	Statement	Learners' characteristic		M	SD	Mean differences	t	P
1.	The project was an interesting method.	extrovert	357	3.79	1.076	.08	.854	.337
		introvert	135	3.81	.824			
2.	I really like the project activity.	extrovert	357	3.35	1.186	.36	3.207	.513
		introvert	135	3.41	.949			
3.	The project helped improve my English skills at present and in the future.	extrovert	357	3.71	1.168	.18	1.596	<b>.008*</b>
		introvert	135	3.99	.946			
4.	The project helped develop teamwork skills.	extrovert	357	3.92	1.141	.19	1.836	<b>.008*</b>
		introvert	135	4.17	.860			
5.	The project provided an opportunity to improve democracy thinking skills. Now, listened to my colleagues' opinions and accepted the different points of views.	extrovert	357	3.71	1.151	.21	1.965	<b>.001*</b>
		introvert	135	4.04	.876			
6.	The project helped improve my creative thinking skills.	extrovert	357	3.80	1.121	.26	2.486	.117
		introvert	135	3.96	.937			
7.	Learning English with the project-based activity made me happy and fun.	extrovert	357	3.74	1.191	.38	3.442	<b>.023*</b>
		introvert	135	3.98	.981			
8.	The project made me feel bored and I did not want to study with this method	extrovert	357	2.58	1.246	-.09	-.810	<b>.037*</b>
		introvert	135	2.35	1.046			
9.	I did not like working group because our group was involved in the fighting.	extrovert	357	2.31	1.189	-.12	-1.074	.303
		introvert	135	2.21	.947			
10.	There was no English skills improvement after using the project activity.	extrovert	357	2.35	1.238	-.11	-.897	.061
		introvert	135	2.16	.929			
11.	If I have chance to study English course, I really want to have a project activity.	extrovert	357	3.43	1.625	.34	2.293	.573
		introvert	135	3.50	1.029			
12.	The project activity was timewasting and time consuming.	extrovert	357	2.11	1.263	-.05	-.444	.548
		introvert	135	2.04	1.050			
13.	The project activity helped create opportunity for communication. Whenever I made mistakes, I could revise them to be a perfect assignment.	extrovert	357	3.54	1.191	.40	3.634	.351
		introvert	135	3.63	.920			
14.	The project activity made me feel confident and relaxing	extrovert	357	3.45	1.195	.38	3.435	.235
		introvert	135	3.57	.869			
15.	The project activity makes me stress and exciting. I am somewhat shy when I was being part of the activity.	extrovert	357	2.83	1.268	-.11	-.890	.726
		introvert	135	2.79	.			

p &lt; 0.05

**Table 8: A Comparison of the Respondents' Perception toward the PBL Activities Based on Characteristics of Learners (Group 2)**

No.	Statement	Learners' characteristic	M	SD	Mean differences	t	P	
1.	The project was an interesting method.	extrovert	217	3.88	.882	.105	1.559	.120
		introvert	104	3.72	.875			
2.	I really like the project activity.	extrovert	217	3.48	.982	.113	1.004	.316
		introvert	104	3.37	.882			
3.	The project helped improve my English skills at present and in the future.	extrovert	217	3.98	.964	.115	.467	.641
		introvert	104	3.92	.972			
4.	The project helped develop teamwork skills.	extrovert	217	4.17	.857	.105	1.259	.209
		introvert	104	4.04	.924			
5.	The project provided an opportunity to improve democracy thinking skills. Now, listened to my colleagues' opinions and accepted the different points of views.	extrovert	217	3.94	.864	.103	.682	.496
		introvert	104	3.87	.860			
6.	The project helped improve my creative thinking skills.	extrovert	217	3.97	.871	.106	1.459	.146
		introvert	104	3.82	.932			
7.	Learning English with the project-based activity made me happy and fun.	extrovert	217	4.02	.943	.116	1.156	.249
		introvert	104	3.88	1.027			
8.	The project made me feel bored and I did not want to study with this method	extrovert	217	2.56	1.216	.173	-.877	.381
		introvert	104	2.68	1.151			
9.	I did not like working group because our group was involved in the fighting.	extrovert	217	2.31	1.277	.147	-.911	.363
		introvert	104	2.44	1.122			
10.	There was no English skills improvement after using the project activity.	extrovert	217	2.41	1.233	.144	-.987	.325
		introvert	104	2.55	1.165			
11.	If I have chance to study English course, I really want to have a project activity.	extrovert	217	3.60	1.151	.131	.277	.782
		introvert	104	3.57	.983			
12.	The project activity was timewasting and time consuming.	extrovert	217	2.19	1.181	.138	-.649	.517
		introvert	104	2.28	1.119			
13.	The project activity helped create opportunity for communication. Whenever I made mistakes, I could revise them to be a perfect assignment.	extrovert	217	3.64	1.023	.117	.628	.531
		introvert	104	3.57	.879			
14.	The project activity made me feel confident and relaxing	extrovert	217	3.49	1.089	.125	1.365	.173
		introvert	104	3.32	.968			
15.	The project activity makes me stress and exciting. I am somewhat shy when I was being part of the activity.	extrovert	217	3.18	1.185	.140	-3.213	<b>.001*</b>
		introvert	104	3.63	1.151			

p &lt; 0.05

Table 9 and Table 10 are available [http://www.mediafire.com/view/y43py6mpyywa7st/Table\\_9-10.pdf](http://www.mediafire.com/view/y43py6mpyywa7st/Table_9-10.pdf)