



Application of Peer-Assisted Learning in a University Extra-Curricular Program

An Interactive Qualifying Project Report

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Respectfully by:

Derek Andersen
Tiffany Chau
Austin Noto-Moniz
Yuchen Xu

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Submitted to:

Professor Zhikun Hou
Worcester Polytechnic Institute, Project Advisor

Professor Robert E. Kinicki
Worcester Polytechnic Institute, Project Advisor

Brenda Yuen
Hong Kong University of Science and Technology, Liaison

Abstract

This project assessed an extracurricular peer-assisted learning program entitled the English Language Buddy Scheme established at the Hong Kong University of Science and Technology. Our project focused on the effectiveness of the types of activities administered, organizational structure and its potential benefits. Analysis of existing documentation, a participant survey, and interviews with organizational staff provided recommendations to future implementations. Recommendations include returning to a central documentation system, supporting identified effective activities, and investigating effects of group size and problem-solving activities.

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Authorship

Section Name	Primary Author(s)	Primary Editor(s)
Abstract	Derek/Tiffany	All
Acknowledgements	Derek	All
Executive Summary	Derek	All
Chapter 1: Introduction	Tiffany	All
Chapter 2: Background	All	All
Chapter 3: Methodology	All	All
3.1 Document Analysis	Yuchen	All
3.2 Participant Survey	Austin	All
3.3 Buddy Feedback	Derek/Tiffany	All
3.4 Interviews	Derek/Tiffany	All
Chapter 4: Results	All	All
4.1 Results of Document Analysis	Yuchen	All
4.2 Results of Electronic Survey with Participants	Austin	All
4.3 Interview Results	Derek/Tiffany	All
Chapter 5: Discussions	Austin	All
Chapter 6: Conclusion	Tiffany	All

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Executive Summary

Second language acquisition is more than learning vocabulary and grammar; it involves developing a confidence in speaking the language. Although conventional lectures remain the main teaching mode in higher education, peer support is a supplement to these methods. The Hong Kong University of Science and Technology (HKUST) took the initiative to establish their own adaptation of an English as a second language (ESL) peer support program known as the English Language Buddy Scheme (ELBS) in 2009. ELBS consists of activity facilitators that organize weekly unstructured extracurricular activities to encourage English use and confidence in small groups of participants. A division of the Language Center, the Language Enrichment Activities Programme (LEAP) is responsible for the operation of the program and occasionally organizes structured activities open to all students. Although some documentation on ELBS currently exists, further analysis of its structure, benefits and the applications of peer-assisted learning (PAL) strategies are required. The purpose of this project is to provide feedback and recommendations to future ELBS implementations, specifically addressing the organizational structure and activities implemented to achieve the intended learning outcomes of ELBS.

To meet this goal, the project team conducted a literature review investigating different theories and case studies concerning second language and aimed efforts towards three objectives. These objectives are: identify the most engaging ELBS activities, analyze the effectiveness of the ELBS organizational structure, and identify the potential benefits of peer learning methods in an extracurricular program. To achieve these objectives, the methodology involved an extensive document analysis supplemented by an electronic survey with past participants, and semi-structured interviews with LEAP staff and activity facilitators.

Over the course of the three past ELBS implementations (rounds), the LEAP staff maintained an electronic collection of data and documentation pertinent to ELBS. This component is the only source of data that the research team did not generate from research. With this information, the project team focused on three main areas for document analysis: participant demographics and attendance, pre-event and post-event questionnaires regarding participant self development in English, and activity facilitator feedback.

The survey distributed to participants revealed their overall impression of ELBS and the types of activities that students found most engaging and encouraged participation. Questionnaires were distributed to 241 participants via email and eighty-seven provided completed responses.

Activity facilitators and LEAP staff provided feedback through nine semi-structured interviews. Of the nine interviewees, five were conducted with LEAP staff members that provided insight about the organizational structure and their opinions about PAL programs. The four activity facilitators shared their experiences with the program about their role and participant interactions.

Document analysis revealed that the group size potentially effects attendance rate of participants. A group size of four or five participants yields a higher attendance than larger group sizes. There also appears to be a direct relationship between attendance rate and English improvement. In addition, from pre-event and post-event questionnaires, significant changes were identified to be in listening competencies and English confidence level.

Surveys indicated that the most popular and engaging activities were socializing over food or tea, board games and workshops. The team deemed these activities the most effective, however it is important to note that participants only benefitted from a variety of activities. For example, if a

participant played board games every week, the effectiveness of using board games decreases. In addition, questionnaires from the survey and document analysis both suggested that participants developed an intermediate confidence in the English language. Furthermore, the survey indicated that participants found the peer interaction resources offered by ELBS to be the most beneficial. Specifically, students felt interaction with activity facilitators and other participants assisted in improving their confidence and general English skills, as did the weekly meetings. While some participants felt structured activities and the LEAP staff were helpful, peer interaction resources garnered the strongest consensus.

The interviews provided insight on the structure and implementation of ELBS. The two main concerns mentioned were document management and task delegation. Initial use of the Learning Management and Evaluation System (LMES) was advantageous for the LEAP staff because of the organizational structure LMES provided. Timesheets, proposals and other documents alike could be filed in an orderly manner. However, activity facilitators found the system to be inconvenient when required to upload documents. Task delegation also proved to be a concern because there were some misconceptions about responsibilities. Activity facilitators were unsure of the role of the LEAP staff and a clearer definition of task delegation would stimulate program efficiency.

From research, the data indicates that ELBS is a successful PAL program, and is meeting its intended learning outcomes. However, there are areas of improvement as indicated from research methods. For further ELBS development, we suggest the following: an implementation of a structured documentation system, further support for both popular and effective unstructured activities, and the increased availability of structured activities. A structured documentation

system would provide a framework for organized document storage and convenient document access. Further support for unstructured activities improves the quality of the activity, hopefully improving the effectiveness of the activity as well. Increased availability of structured activities would satisfy participant desires and encourage interactions between groups. Project research introduced potential areas of research in the future. The personality of activity facilitators could have an effect on the development of participants' English improvement. Further investigation into the characteristics of activity facilitators could yield a more successful program. Group size is also an area of interest. As suggested by both document analysis and the participant survey, group size appears to have an effect on multiple facets of ELBS. Future detailed research on this hypothesis would provide ELBS with a target number of participants per group.

1 Introduction

Second language learning has become more important than ever in today's globalized world. This increased amount of international communication requires the ability of people to communicate with a language other than their mother tongue. Thus, English education was made available to a larger amount of non-native speakers in various formats. Many Hong Kong schools implement language programs that integrate both literature approaches and applied linguistics (Crisp, 2006). However, most students opt to take literature based courses since they feel more comfortable and familiar with literary context. As a result of this unbalanced language learning, verbal communications skills often suffer. To solve this problem, initiatives exist at the Hong Kong University of Science and Technology (HKUST) that aim to enhance students' English language competency. One such example is the Language Enrichment Activities Programme (LEAP), an extracurricular language program sponsored by the HKUST Language Center.

Educational approaches evolve over time. Scholars continue to formulate different theories about teaching and learning strategies. Although conventional lectures remain the main teaching mode in higher education, peer support is becoming a popular supplement to the traditional methods in second language learning (Deegan, 2006). Huang and Eskey (1999) claim that the most effective way to teach a language is to teach it in the same manner in which a native speaker learned their native language. This mode remains through interactions with speakers of the language and their peers, in the form of peer support. There are two types of peer support: peer tutoring and peer-assisted learning (PAL). Peer support differs from conventional methods in that it stimulates all of the

student's learning capacities: "receiving and producing comprehensible input" and "negotiating the meaning of oral and written communication" (Maltese, 2005). Many learning institutions across various disciplines apply PAL techniques to their own curriculums and investigate the associated benefits. Medical educational institutions and secondary language programs alike implement their own approach to maximize retention.

The Language Center at HKUST established their own adaptation of peer support with a program known as the English Language Buddy Scheme (ELBS). Operation and execution of ELBS is the responsibility of LEAP. To date, LEAP has implemented three semester-long rounds of ELBS, starting in the fall semester of 2009. Because ELBS is a fairly new initiative, further analysis of its structure, benefits and application of peer-assisted learning strategies is necessary.

Throughout the three rounds, ELBS organizers accumulated documentation including attendance records, participant demographics, activity facilitator feedback, participant questionnaire results, orientation presentations and other forms of activity records. LEAP completed preliminary analysis of participant questionnaire results and considered much of the qualitative feedback provided by program participants to improve future implementations. While these documents provided some information necessary to prompt adjustments, staff resources are limited and attention to analysis of these documents is minimal. The need for additional information, particularly feedback from those involved with the program, formed the basis of this project.

The project goal is to provide feedback and recommendations to future ELBS implementations, specifically addressing the organizational structure and methods to

achieve the intended learning outcomes of ELBS. To meet this goal, we addressed three objectives: identify the most engaging ELBS activities, analyze the effectiveness of the ELBS organizational structure, and identify the potential benefits of peer learning methods in an extracurricular program. Methods to target these objectives included a critical document analysis, an electronic survey with participants, and semi-structured interviews with LEAP staff and Buddies.

Beginning with a literature review encompassing ideas of second language learning and peer support, this report details the methods used to consider different ELBS components that could be improved. Following the methods, results from the document analysis, survey, and interviews are shown and significant findings are discussed. The research team's recommendations for program improvement and further research subjects conclude the report.

2 Background

This research focuses on investigating the theories behind peer-assisted learning and relevant case studies examining the different approaches to second-language development. Beginning with an introduction to the sponsoring university, the Hong Kong University of Science and Technology (HKUST), this chapter continues with a description of the specific extracurricular program in study. Following this is theory behind second language learning with specific research involving the theoretical elements provided.

2.1 Hong Kong University of Science and Technology

The Hong Kong University of Science and Technology is a public university in Hong Kong founded in 1991. It was conceived in the mid-1980s as “a university that could propel [Hong Kong] towards a knowledge-based economy, and provide the entrepreneurs and innovative ideas; the scientists and groundbreaking research; the engineers, global business managers and other leaders necessary” (HKUST, 2010b). Presently, HKUST consists of approximately 6,000 undergraduate and 3,000 post-graduate students majoring in science, engineering and business (HKUST, 2010a).

Similar to other Hong Kong universities, English is the primary language of instruction at HKUST. However, a relatively small proportion of the HKUST’s student population speaks English as their native tongue. This often introduces a language barrier in the classroom. To address this educational obstacle, HKUST’s Language Center offers courses, tutoring programs and extracurricular activities intended to improve the language skills of their students.

The Language Center implemented the Language Enrichment Activities Programme (LEAP) in 2009. Composed of English instructors and administrative staff, the LEAP Task Force organizes different initiatives with a variety of approaches to English language development. One of these initiatives, the English Language Buddy Scheme (ELBS), uses peer-assisted learning (PAL) as its foundation, and is the focus of this research project.

2.1.1 Language Center

The Language Center's mission is "to empower students, to advance learning and knowledge through teaching and research, and to assist in the economic and social development of Hong Kong" (Language Center – Center Information, 2010). As courses at HKUST are taught in English, the students are expected to possess a certain level of English proficiency. Although the Language Center offers courses in various languages, their primary responsibility is to assist students with English (Humphrey et al., 2008).

In order to empower students to study independently in the university and to work and communicate in a language that is not their native tongue, the Language Center offers a variety of language programs (Language Center Handbook, 2009). The Language Immersion by Residence Abroad program offers overseas opportunities to study language for students meeting the requirements. Language exchange programs and foreign-language conversation groups provide opportunities for language practice in different social contexts. The Writing and Speaking through the Curriculum program sponsors student activities, such as mini-workshops and in person tutorials with assessors. In addition, "the Language Center will continue and expand its provision for guidance to

students entering for the International English Language Testing System and [Putonghua] State Commission examinations, [and] will extend its provision of extra-curricular and co-curricular courses, including on-campus residential immersion programmes” (p. 4). Implemented within the last two years, one of its newest programs is LEAP, which focuses on providing extracurricular English programs for students on campus, as described in Section 2.1.2.

2.1.2 Language Enrichment Activities Programme (LEAP)

The Language Center’s LEAP initiative aims to enhance students’ English language competency, with an emphasis on peer support (Language Center – LEAP, 2010). Through collaboration with the student body and various university departments, LEAP provides students with extracurricular experiences to create and extend English learning opportunities outside of the classroom. This serves to enhance language acquisition while enabling peer-supported learning. LEAP offers three initiatives, as well as campus-wide events, such as the Student Conference “Communication & Cultural Values: Connecting the Dots” (see Appendix A).

The three initiatives offered by LEAP consist of CAMPUS WRAP, the Mini-Immersion Programme (MIP), and ELBS (Language Center, 2010). CAMPUS WRAP is an English-language camp for incoming first-year students that helps them acquire English skills needed to succeed in their future studies in a fun and interactive environment. The MIP initiative is a series of day-camps offering an immersive environment for the participants to hone their verbal English skills. Finally, ELBS attempts to aid students in

developing confidence and comfort in speaking English through structured LEAP organized activities and unstructured weekly social gatherings.

2.1.3 English Language Buddy Scheme (ELBS)

The ELBS initiative was designed to provide students with an environment that encourages casual communication in English. In social settings, students often communicate in their native Cantonese because of the convenience (Lawrence Chan, personal communication, 2011). English is rarely used in these situations because of the presence of a preferred language. The goal of ELBS is to increase students' confidence in English, even if their actual language ability improves an insignificant amount. The idea is that if a student becomes more confident in their English, they will be more likely to speak it and interact with those who are proficient. Thus, with more practice, their actual English ability indirectly improves. The ELBS initiative is not concerned with immediate results, but is focused rather on providing the tools for English improvement over a longer period of time.

The first implementation of ELBS occurred during the fall semester of 2009 (Brenda Yuen, personal communication, 2011). Designed as a semester-long program, it ran for the majority of the semester, encompassing ten weeks from September to November. The LEAP Task Force divided participants interested in improving their English, into small groups based on similar interests, and then assigned them to an activity facilitator (also referred to as a "Buddy"). The Buddy organized unstructured activities for the group, ranging from playing board games in the LEAP office to nature walks. The LEAP Task Force required Buddies to submit proposals for these weekly unstructured activities

in order to obtain approval. By using this approach, ELBS exposed students to a variety of situations with their peers encouraging the practice of English in a non-academic setting, thus removing the pressure to perform well.

To date, ELBS has completed three full semester-long implementations, known as rounds: Fall 2009, Spring 2009 and Fall 2010. However, the underlying concept has varied little across these three implementations (Brenda Yuen, personal communication, 2011). The most significant changes occurred between the first two semesters. Between the two semesters, changes primarily occurred in organizational structure and document management. Changes in organizational structure are shown in Figure 2-1.

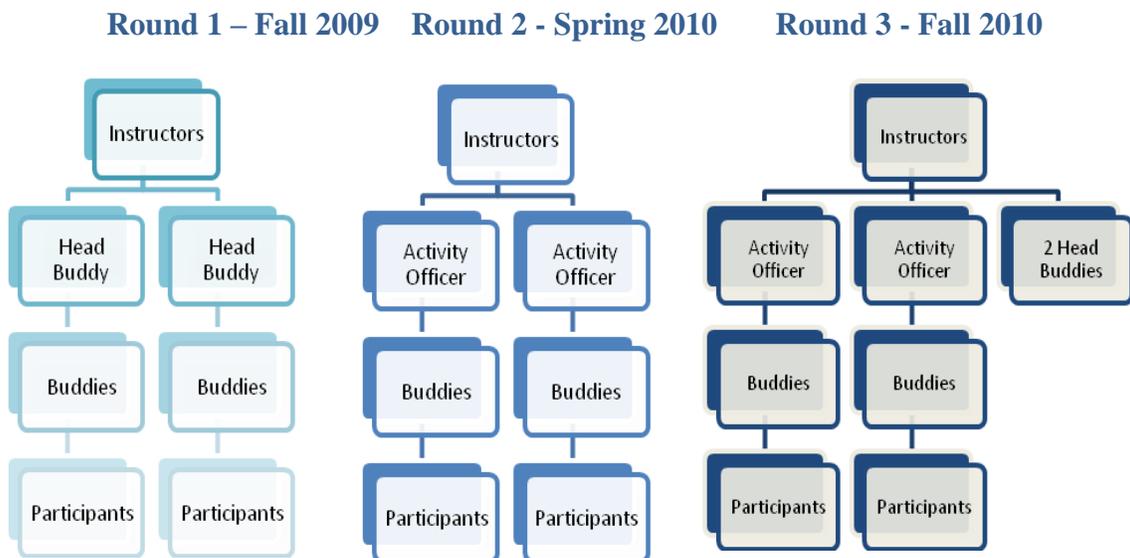


Figure 2-1 ELBS Organizational Structure

As the diagram displays, the first round consisted of a hierarchy with Instructors, Head Buddies, and Buddies. Instructors are LEAP Task Force members overseeing ELBS. Head Buddies and Buddies are second or third year undergraduate students responsible for running the weekly unstructured meetings. In particular, Head Buddy responsibilities included initial approvals of activity proposals and management of Buddies.

The second round introduced two members to the LEAP Task Force, known as Activity Officers. The Activity Officers acted as intermediates between the Instructors and the Buddies, replacing the role of the Head Buddies from the first round (Brenda Yuen, personal communication, 2011). This change in management occurred because Instructors felt overwhelmed with their responsibilities. Initially, the Instructors were responsible for reviewing all activity proposals submitted by the Buddies and observing the weekly unstructured meetings. This role was transferred to the Activity Officers in the second round. Activity Officers responsibilities also included planning structured activities, managing Buddies, design and marketing of publicity materials and administrative work related to ELBS. With the addition of the Activity Officers, more structured activities were planned such as a photo scavenger hunt, hiking, American football games and a cultural dinner.

Beginning in round two, Buddies met on a bi-weekly basis with the Activity Officers to discuss a variety of topics, such as strategies for student involvement, successful techniques, and any problems that arose (Brenda Yuen, personal communication, 2011). Based on internal evaluations, these adjustments had a positive impact on the program, so they remained in place for the third round. In round three, Head Buddies were reintroduced into the organizational structure. However, their role became more administrative and they acted as assistants to the Activity Officers.

Additional changes to the ELBS program involve document management (Lawrence Chan, personal communication, 2011). With activity proposals, Buddy timesheets, attendance records and other program documents, document management is a factor to

consider when evaluating the functionality of a program. In the first round, LEAP made use of an online learning management system called Learning Management Evaluation System (LMES) (What is LMES?, 2010). Features included in LMES are announcements, course content, discussion, assignments, news, web content and drop boxes. Some HKUST professors use this program to facilitate communication between students, post assignments, conduct informal quizzes and display grades. ELBS made use of the additional ability enabling student organizations to use the online interface. However, Buddies found LMES to be inconvenient due to a required login before access to necessary documents. Thus, the second round did not use LMES. Instead, all forms were sent to an email account managed by the Activity Officers. This provided Buddies with more convenient methods of communication but reduced Activity Officer efficiency because it was often difficult to find documents. The third round continued to use email submission.

In summary, ELBS is a program focused on encouraging the use of English in social contexts. This concept aims to create a relaxing environment to encourage students to speak English. It does not aim to improve their proficiency directly, although it is an extra benefit if that happens. ELBS is interested in building the confidence of its participants, which assists them in becoming proficient in the long term. The focus of this project is to examine previous ELBS implementations and make recommendations for any changes to sustain its participants' interest and increase overall program efficiency.

2.2 Second Language Education

The development of second language education has been explored by many researchers. These experts have developed widely accepted hypotheses on student engagement in order to encourage language acquisition. This section examines recent case studies supporting and challenging these hypotheses.

2.2.1 Stephen Krashen's Model of Second Language Acquisition

Of the numerous theories of second language (L2) acquisition, the model developed by Stephen Krashen is one of the most well-known (Huang and Eskey, 1999). Krashen's full model consists of multiple hypotheses developed over a number of years from his own innovation and adaptations of pre-existing hypotheses. The most relevant aspects of his model are the acquisition-learning hypothesis, the input hypothesis, the reading hypothesis, and sheltered subject matter teaching. These concepts are discussed in detail later in this section. In addition, Krashen discusses some potential pitfalls to the L2 learning process, known as the affective filter hypothesis and fossilization.

Krashen's most widely accepted hypothesis is the acquisition-learning hypothesis (Huang and Eskey, 1999). His premise is that L2 learners engage in two kinds of learning processes: learning and acquisition. Learning is a conscious process by which one is trained on the rules and patterns of a language. These rules are used to internally review and polish speech before vocalization. Learning accounts for a minor part of L2 development, as it merely develops an internal editor, also known as a monitor. Acquisition plays a much larger role in the development of fluency in the L2. It is the subconscious process of developing language skills and understanding through focus on

meaning rather than content. “[Acquisition] requires meaningful interactions in the target language in which speakers are concerned not with the form of their utterances but with the messages they are conveying and understanding” (Krashen, 1981, p. 5). As acquisition closely models the process of learning one’s mother tongue, triggering this process can significantly improve fluency in the L2.

The remainder of Krashen’s relevant learning hypotheses emphasize this distinction between learning and acquisition. He discusses different techniques for stimulating acquisition rather than learning (Huang and Eskey, 1999). The input hypothesis states that acquisition can occur when the learner receives a sufficient amount of comprehensible input, which consists of messages in the L2 that the learner can understand. In addition, “comprehensive input automatically contains all the grammatical structures the acquirer is ready to acquire, in the right order and right quantity” (p. 3). The reading hypothesis is a special case of the input hypothesis, where the comprehensible input is in the form of reading. Through studies, this specific type of comprehensible input has been shown to have a positive impact on L2 learners.

In light of these techniques, activities used to facilitate L2 learning should be carefully planned to engage student interest (Huang and Eskey, 1999). The affective filter hypothesis states that many L2 learners have a filter that prevents input from reaching them. This is largely fueled by low motivation, high anxiety, and low self-esteem. In addition, many L2 learners do not view their language class as an opportunity to improve their language skills, but as a situation displaying their weaknesses. Combining these factors yields a high barrier, inhibiting student acquisition of the language. A tension-

free environment that reduces the learners' obstacles can be achieved using a variety of strategies, such as choosing activities from the learners' interests, deemphasizing grades, and generally encouraging a more casual atmosphere.

If the learner's affective filter is not sufficiently lowered to allow comprehensible input to reach them, the danger of fossilization presents itself. Fossilization indicates that a learner has stopped learning the L2 (Huang and Eskey, 1999). According to Krashen, fossilization is due to a lack of access to appropriate material, such as authentic books or native speakers of the language.

2.2.2 Activities

This section reviews further research that supports the correctness and provides practical applications of Stephen Krashen's model of second language acquisition. Both of the following studies arose due to interest in examining Krashen's model and testing its success. Specifically, the studies support Krashen's reading hypothesis through the use of subtitles in conjunction with video.

2.2.2.1 Closed-Captioning Television

Language classes have traditionally shown videos to expose learners to natural usage of the L2 (Huang and Eskey, 1999). This utilizes Stephen Krashen's input hypothesis, where the video serves as the comprehensible input. Additionally, studies investigating the reading hypothesis, a specific instance of the input hypothesis, have supported the thought that reading can be a very effective form of comprehensible input. Huang and Eskey wondered what the outcome would be if the two ideas were combined as television

with closed-captioning. The subjects of the study were the students in an ESL summer course at The Language Academy at the University of Southern California. During a regular class session, the students were shown an episode of *Family Album U.S.A.*, an American sitcom developed explicitly for ESL instruction. The experimental group watched the episode with closed-captioning, while the control group watched the episode without it. Huang and Eskey hypothesized that the exposure to both the spoken and written words would help to increase the students' understanding of the events in the episode, and produce an overall increase in their comprehension of the L2.

The results of the follow up quiz seem to confirm the researchers' hypothesis (Huang and Eskey, 1999). The students in both groups were administered a multiple choice quiz, containing 16 questions, that analyzed their comprehension of the episode and their acquisition level for key vocabulary and phrases. Out of a possible sixteen points on this quiz, the experimental group scored three points better on average than the control group, outscoring them on both the comprehension and vocabulary sections. In addition, the students were asked their opinions on the effect of closed-captioning on their comprehension. Most students agreed that it assists with understanding of the story, vocabulary, and listening skills. They also agreed that it was an enjoyable way to learn English.

2.2.2.2 Student Responses to Film

As a supplementary tool in language classrooms, film clips are often studied (Chapple and Curtis, 2000). It is only recently that feature length films have found their way into language courses. This is primarily due to reasons such as time constraints, the

perception that feature length films hold little educational value for L2 learners, and the difficulty of the language used in these films. However, Chapple and Curtis believe that feature length films offer more benefits to students than simple film clips. Feature length films engage their viewers more than short clips. As a film narrates a story, the viewer naturally desires to know what happens next. The storyline encourages them to pay closer attention and use more than simple language skills to follow the events of the film. These additional comprehension skills, along with the foreign culture portrayed in the films, assist students in developing skills and interests that overflow into their everyday lives. This allows the students to see language as a tool to “talk and read and write about the world” (p. 4).

Chapple and Curtis (2000) considered a course already offered at the Chinese University of Hong Kong. The course, titled “Thinking through the Culture of Film,” is based around the viewing of foreign films, which are largely (but not exclusively) in English. Additionally, English subtitles were provided, if available. Chapple and Curtis made no modifications to the course itself, and instead had the students complete a survey after its completion.

The survey required the students to assess their own improvement in six skills on a scale from one to four (one indicating minimal improvement, and four indicating significant improvement), none of which were explicitly taught in the course. The six skills were speaking, writing, listening, vocabulary, presentation, and confidence. More than half the students rated themselves at least a three for each skill. They were also asked what they learned from the course. Their responses fell into four main categories: critical thinking,

English language skills, broadened worldview, and technical knowledge. More than eighty percent of the students believed they learned critical thinking skills and English skills, although neither was explicitly taught in the course. These results support Chapple and Curtis' belief that feature length films are valuable for L2 learners.

2.3 Peer Support

The most significant component of ELBS is that it implements a peer support system. That is, the students are primarily interacting with their peers, and ideally learn content and gain confidence through these exchanges. This section explores different theories of peer support and reviews multiple case studies relating to the theory of peer support.

2.3.1 Theory

“Peer support is a system of giving and receiving help founded on key principles of respect, shared responsibility, and mutual agreement of what is helpful” (Mead, Hilton, and Curtis, 2001, p. 6). To summarize this statement, peer support consists of a mutual agreement between the two involved parties. This mutual agreement allows peer support learning techniques to succeed in areas where structured teaching may fail. In practice, peer support is not simply a general and static framework for learning. Rather, it is tailored to the individual students' needs. Thus it can provide support for students in the areas they need most, instead of targeting the collective class needs.

2.3.1.1 Overview of Peer Support

Two types of peer support are germane to this investigation: peer tutoring and peer assisted learning (PAL). Peer tutoring is a one-on-one method of support in which a

more experienced student tutors a less experienced peer. Peer assisted learning is often a group activity in which all involved students are at roughly the same skill level.

Although different in their approach, both strategies have shown to be quite effective.

As a method of instruction, peer tutoring has existed in some form since at least as early as Ancient Greece, although current implementations differ in several respects (Topping, 1996). In Ancient Greece, tutoring was a very linear method of transmitting knowledge: it began with the teacher imparting knowledge on the tutor, who in turn transferred it to the student. Thus, peer tutoring in Ancient Greece consisted of “more able students helping less able students to learn in co-operative working pairs or small groups carefully organized by a professional teacher” (p. 3).

As peer tutoring has developed, its treatment of information transfer has deviated from the traditional linear schema (Topping, 1996). Peer tutoring has come to be a dynamic exchange of information; it is no longer simply a one-way transfer of knowledge.

Modern peer tutoring is better defined as “people from similar social groupings who are not professional teachers helping each other to learn and learning themselves by teaching” (p. 3).

According to Barbara Rogoff’s *Apprenticeship in Thinking*, interaction with peers is the best method to stimulate learning (Topping, 1996). Students tutored by a peer are more active and engaged in their learning. Due to the low pupil to teacher ratio, students are more likely to receive immediate feedback. Moreover, as they are primarily interacting with their peers rather than an authority figure, tutees are more likely to lower their affective filter. As for the tutors, Topping’s study provides support for an old adage:

“The best way to learn something is to teach it to someone else.” The act of teaching seems to solidify the tutors’ own knowledge of the material. Students preparing to be a peer tutor are generally more motivated and attentive to the material. To assist the tutors, the knowledge is simplified, clarified, and exemplified for them. Thus, they receive strong reinforcement in the material as a consequence of preparation.

Peer assisted learning is an instructional strategy in which students assist each other in study (Topping and Ehly, 1998). While peer tutoring has a slight hierarchy (one student is the tutor while the other is the tutee), PAL has no such structure. Students involved in PAL help each other, emphasizing the two-way transfer of knowledge between both involved parties. This kind of student-centered learning style creates a more effective learning environment. The environment encourages the students to be responsible for their own learning process, in terms of both academic achievement and social development (Glynn, MacFarlane, Kelly, Cantillon, & Murphy, 2006).

This lack of hierarchy helps to encourage communication amongst students while discouraging social isolation (Topping, 1996). Students found peers are more likely to understand their problems and seem more interested in their personal interests and characteristics than an authority figure. This lack of an authoritative presence assists in the lowering of the students’ affective filter, triggering acquisition and allowing them to focus more on the task at hand.

Despite the many benefits of the PAL strategy, there are a few shortcomings (Bursztyn, 2007). Establishing a PAL scheme may consume significant resources, especially time. In many cases, extra time is required for the teachers to train inexperienced students to be

teaching assistants. Generally, a tutor's mastery of the material is less than that of the teacher, so the quality of content transferred to students may vary by tutor. If the end result does not meet the teacher's expectations, more resources and time will likely be consumed in an attempt to better the PAL implementation.

2.3.1.2 Theories of Peer Support

Peer support stems from the idea of one person helping another person with a similar disability (What is Peer Support?, 2007). With the theory of peer support dating back to 1838, it is by no means new. However, its application is becoming more innovative with time (Deegan, 2006). Considering this concept, many educational institutions have been taking advantage of the perceived benefits of peer support and implementing PAL programs. Professional health institutions, primary schools, and educational institutions have utilized peer support in an attempt to improve their programs (Hammond, Bithell, Jones, and Bidgood, 2010; Lawrence, 1978).

According to Ralph Maltese (1991), there are three philosophical pillars that support collaborative learning: space of appearance, active engagement, and ownership. These three components explain the benefits of peer-to-peer interaction to the learner.

The first pillar parallels one of the most basic needs human beings exhibit (Maltese, 1991). It is the need to “appear before their peers, to have a public image, to announce before the world that they exist as a part of the community” (p. 20). Maltese defines this need as the “space of appearance”. In conventional lecture-style settings, there are limited opportunities for students to participate in conversation, as the discussions are

usually led by the teacher. Often, only a few students are engaged. However, in collaborative learning styles, multiple spaces of appearance are created in a single teaching period. Maltese also suggests that students are more likely to participate in small group discussions because of the decreased pressure of performing for the teacher, leading the students to be more honest.

Active engagement forms the second collaborative learning pillar (Maltese, 1991). In addition to being presented with spaces of appearance, students also need to be actively involved with the material. This involvement yields new insights and new combinations of ideas, ultimately allowing the information to be retained for the long-term.

Finally, Maltese identifies ownership as the last piece to support collaborative learning. When identifying the information as their own, students internalize the information as well as take ownership of the material, and therefore fully understand it on a deeper level. Another scholar supports this idea, stating that “in order to clarify complex concepts it is proposed that students would need to seek meaning, relate ideas and use a variety of cognitive skills” (Hammond et al., 2010).

A study conducted by Laura Saenz, Lynn Fuchs, and Douglas Fuchs (2005) supports the work done by Ralph Maltese. Saenz et al. recognize that L2 learning depends on receiving comprehensible input, producing comprehensible output, and negotiating the meaning of oral communication and text. In a classroom environment, students are constantly receiving ample input, but there are few opportunities to produce output. This is similar to Maltese’s finding that students often lack a space of appearance. Peer

assisted learning programs are part of the solution, as they are designed to give students a space of appearance during which they can form comprehensible output.

2.3.2 Activities

The idea of peer support is widely implemented and largely accepted as effective, although it is certainly better suited to some situations than others. It is a method of instruction that has received widespread support, and many studies have suggested that this support is well deserved. The following studies investigated different aspects of peer support and their effectiveness in varying situations.

2.3.2.1 Active Learning in Higher Education

There are two main models of PAL: cross-level peer tutoring and same-year PAL groups (Hammond et al., 2010). In the cross-level model, a higher level student leader runs classroom-based activities or discussion with lower level students. This is the most commonly used and studied model. Thus, Hammond et al. were interested in the less studied same-year PAL model, and were especially interested in student opinions. Same-year PAL groups consist of students with the same level of understanding. Over the course of multiple meetings, students are encouraged to switch between tutor and tutee roles. This helps eliminate the feeling of an authoritative presence while still allowing each group to have a leader.

This particular study began with the introduction of same-year PAL sessions into the first year of an undergraduate physiotherapy program (Hammond et al., 2010). Data was gathered over three implementations of the program in successive years. Students who

volunteered for the program were given an introductory session on PAL and were required to attend PAL sessions held three times during the term. Outside of those mandatory sessions, students were encouraged to arrange their own meetings. Their satisfaction with the PAL experience was measured through a questionnaire after the conclusion of each year of the three-year study. The survey asked students to rate their agreement with a number of statements on a five-point scale. The topic of the statements included development of study skills, preparation for assignments, awareness of course expectations, reassurance about course related concerns, and development of confidence.

After the first year, the general consensus was that there was not sufficient emotional support because students did not believe PAL sessions “contributed to emotional aspects such as reassurance, confidence or enjoyment of learning” (Hammond et al., 2010, p. 205). In order to remedy this issue, a stand-by tutor was available the following year to help with group functions. Additionally, further emphasis was given on role selection and rotation of responsibilities within the PAL groups. This resulted in an increase in survey response rate and increased student participation in the second implementation of the PAL system. It was noted that students felt improvement in the problematic areas from the previous year but there was still room for improvement in other areas.

Evaluations from the third year yielded responses similar to those of the second, with the most noticeable difference being the decrease in ambiguous responses.

The students responded favorably to many aspects of the PAL scheme (Hammond et al., 2010). They felt they achieved a better understanding of basic material through their discussion with others, and they also came to value others’ perspectives. This study also

suggests that same-year PAL helps students in social areas, such as confidence building and comfort with the material. However, the students did not feel that the complex material benefits much from PAL. Additionally, the students did not feel PAL improves their more general skills, such as study skills and assignment preparation.

2.3.2.2 Extensive Reading and the Development of Language Skills

As part of his input hypothesis, Stephen Krashen acknowledges “reading may also be a source of comprehensible input in a second language” (Hafiz and Tudo, 1989). There are two main types of reading as comprehensible input discussed by Hafiz and Tudo:

intensive reading and extensive reading. In intensive reading, learners are exposed to relatively short texts, which are used to demonstrate specific aspects of the L2 and show these aspects in use in a natural setting. Extensive reading aims to flood readers with large quantities of text in the L2, without focus on any specific structures or aspects of the language. Following Krashen’s input hypothesis, the thought is that structured exposure to the language in a format that engages the learner will trigger acquisition.

Students in an ESL course were split into three groups (Hafiz and Tudo, 1989). Both control groups simply attended class, and received no special treatment. The experimental group attended an hour long extended reading session each weekday for twelve weeks in addition to class. Students were allowed to choose any English language book they desired, and underwent no explicit language skills training. Additionally, once a week they gave an informal oral book report on what they read. This was not a prepared book report, but rather a summary aimed at getting the students to exercise their English. The goal of this setup was to create a tension-free environment for the students,

allowing them to “derive a maximum of pleasure from the reading materials available to them” (p. 4). This allows for easier language acquisition due to the lowering of the student’s affective filter.

Each group was administered a set of seven exams (three testing reading and four testing writing) before and after the twelve week period (Hafiz and Tudo, 1989). After the twelve weeks, neither control group showed much improvement. However, the experimental group showed significant improvement on each of the exams. Specifically, they showed the most improvement in their writing skills. Hafiz and Tudo offer two possible explanations for this unexpected result. First, it is possible that the large range of language features present in the reading allowed the students to acquire the tools needed for more complete expression, which would assist them in answering the open-ended writing questions. Second, it is possible that the program had a large affect on their confidence, thus encouraging the students to experiment with their writing. Regardless, Hafiz and Tudo’s study reinforces Krashen’s reading hypothesis.

This study also demonstrates the importance of social ties in learning a second language (Hafiz and Tudo, 1989). The learners saw the experiment as a “group project focused around the shared experience of reading a variety of accessible and motivating materials for pleasure” (p. 6). This added to the enjoyment of the reading and the formation of a social bond between participants. This social bond further lowered students’ affective filters, thus increasing the chance that acquisition would be triggered. “It emerged from the present study that, ultimately, what learners read matters far less than *how much* they read and the degree of enjoyment they derive from their reading” (p. 6).

2.3.2.3 Peer Influences on Second Language Competency

Studies show that peer interactions affect the development of L2 competency (De Guerrero and Villamil, 1994; Lynch, Klee, and Tedick, 2001; Parks and Raymond, 2004). Many studies have been conducted examining the influence social and peer environments have on L2 acquisition. De Guerrero and Villamil investigated student interactions from a social and cognitive perspective by studying peer revision in an English communication skills classroom. The subjects were intermediate ESL students at the Inter American University of Puerto Rico. Lynch, Klee, and Tedick studied the relationship between social factors and language proficiency in a postsecondary Spanish immersion program. The students, enrolled in a major Midwestern university in the United States, were learning Spanish as their second language. Parks and Raymond were interested in strategies used in learning English by nonnative speakers enrolled in a Masters of Business Administration (MBA) program at a Canadian university. All students were from the People's Republic of China (PRC) and aged in their mid to late twenties. While each study involved different settings, overall themes were present that contributed to the development of L2 competency.

Peer writing review is a widely used technique for improving student writing. This is not only true in standard writing classes, but also in foreign language classes. While much research has been done that show its effectiveness, little has been done to investigate what actually occurs between students during these revision sessions (De Guerrero and Villamil, 1994). To study this concept, De Guerrero and Villamil took audio recordings during peer review sessions of intermediate ESL students at the Inter American University of Puerto Rico. The students were compared in pairs and categorized for

analysis based on productivity and interaction. The majority of student pairs were observed using an interactive revision system, where both students were actively involved. This type of interaction proved to be most successful. Some pairs elected to go with a hierarchical approach, where one student read their paper and the other student listened. This structure was not nearly as successful as the interactive revision system. Therefore, it would seem that interactions in which both involved parties are seen as equals are the most beneficial to all involved.

Lynch, Klee, and Tedick (2001) were interested in how social factors impacted language proficiency. Their subjects were sixteen students enrolled in a postsecondary Spanish immersion program. During an academic quarter, the students were taking multiple social science courses in Spanish, as well as a Spanish language support class. In order to evaluate the proficiency of the student's language skills, the researchers conducted testing both before and after the program began. They also conducted interviews and focus groups with the instructors and students. Through the interviews and focus groups, it became clear that a strong social community formed between many members of the immersion program. In order to be successfully integrated into this community, a student had to be able to use Spanish both in an academic and non-academic context. Students who were not sufficiently fluent (as determined by members of the community) were excluded from the community. The results of the self-evaluation showed that those students who took part in the social community felt that they had greatly improved their overall Spanish skills. However, tests indicated that these students did not actually show much improvement over the course of the program. This addresses the role played by

social groups and peer support on one's confidence in an L2. This study supports the concept that strong social support develops a level of confidence with language use.

Parks and Raymond (2004) investigated strategies of L2 acquisition and how they changes based on context. Their subjects consisted of eighteen MBA students from the People's Republic of China taking multiple group activity-based classes, which required them to interact with native English speakers. The students were interviewed after the study phase, and a common theme arose. Many students discussed negative experiences with their native English speaking counterparts. They felt that they were "looked down on" (p. 383) or "looked at like dirt" (p. 383) because their English was not up to par with the native English speakers. This negative view hindered development of some of the Chinese students' English competency. As with the study conducted by Lynch, Klee, and Tedick (2001), this research concluded that a couple of students outside the social group felt that their English competency had not improved. The negative peer influence appeared to have an adverse effect on the development of their English fluency.

The influence a peer can have on L2 acquisition is apparent according to these case studies. Whether an L2 learner is inside or outside of the classroom, language use and peer interactions appear to have a direct influence on language development. In particular, peer interaction and inclusion in the peer group seems to positively impact confidence in the L2, even if actual fluency has not improved. However, when a student is singled out or excluded for their apparent lack of language skills, the studies indicate that their level of language competency will fall behind. Whether positive or negative, peer interactions have a direct impact on the development of language competency.

2.4 Summary

Second language learning is a multi-faceted subject, with many different hypotheses combined together to form a model. Many of these hypotheses have a large body of support behind them suggesting that they hold true in a variety of situations. These statements apply to each hypothesis included in Stephen Krashen's model of second language acquisition.

However, the existing research suggests that even better results may be achieved when Krashen's model is applied in the domain of peer support. The act of working with a peer helps to lower each student's affective filter, and thus facilitates the triggering of language acquisition. Beyond actual language acquisition, peer support gives students the confidence and comfort needed to encourage exercise of the language in everyday situations, be it with friends or native speakers. This provides participants with the tools needed to continue increasing in proficiency on their own, long after the peer support program has concluded.

This embodies the philosophy behind LEAP's ELBS initiative. Their emphasis is on giving their participants tools rather than imparting specific knowledge. This background research aims at providing the appropriate amount of knowledge necessary to analyze ELBS.

3 Methodology

The project goal is to provide feedback and recommendations for future ELBS implementations, specifically addressing the role of participants and organizers in their self-directed activities. This goal can be further separated into three objectives: identifying ELBS activities that actively engage students and encourage participation, analyzing the ELBS structure and its effectiveness in meeting the intended learning outcomes (see Appendix B) and identifying the potential benefits of peer learning methods in an extracurricular program. To meet these objectives, the team conducted a comprehensive literature review (Chapter 2), document analyses, a survey, and interviews. A general diagram of the approach can be seen in Figure 3-1. A more detailed description of each particular assessment tool is provided in the sections below.

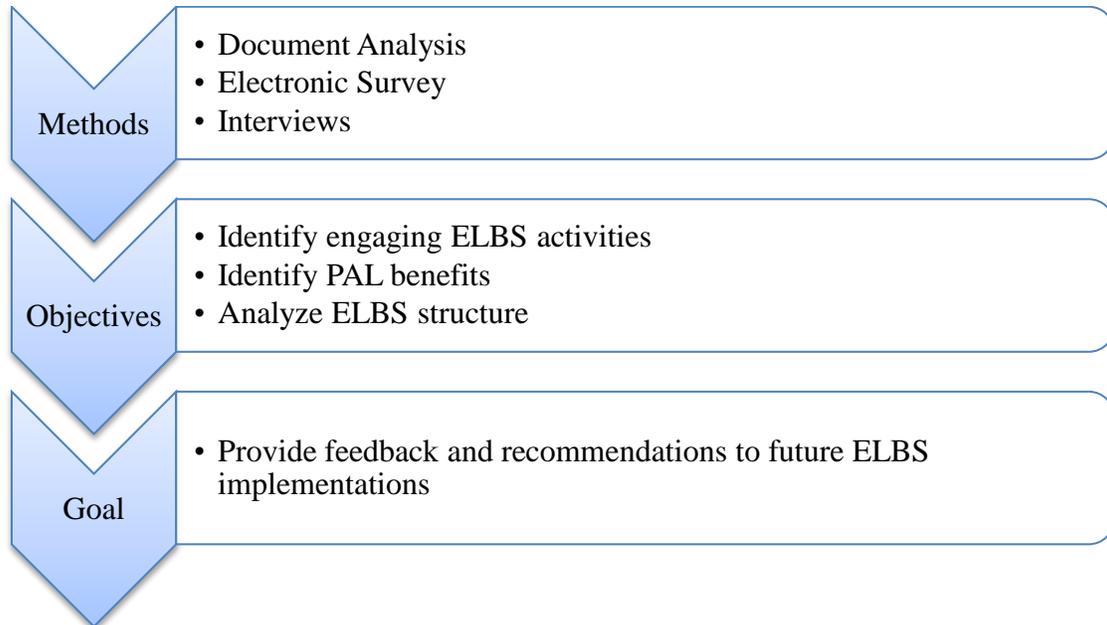


Figure 3-1 Methodology Flow Chart

3.1 Documentation

Over the course of three ELBS implementations, Activity Officers and Instructors maintained an electronic collection of data and documentation pertinent to ELBS. The original data consisted of a mixture of electronic and paper documentation, but the LEAP staff transferred all of the documentation over to both electronic copies and hardcopies. Not all of the data and documentation proved relevant to this project, such as marketing materials, Buddy recruitment materials, and activity photographs. However, the documentation provided details on attendance, activity feedback, and post-ELBS questionnaires. The team considered participants' application forms, Buddies' event reports, and participants' answers to questionnaires. Analysis was conducted using the program Microsoft Excel.

3.1.1 Documentation Analysis

A summary of participants' year, major, and interest distribution offered an ELBS participant demographic. These participant attributes could be factors to consider when analyzing participant attendance and causes for absences. In addition, the analysis placed emphasis on activity group sizes and the number of activities each Buddy held in order to determine if these factors had a significant impact on participant attendance. During analysis of attendance, the research team discovered that each Buddy had varied activity schedules. Thus, tabulating the number of events attended would be misleading. Instead, a relative attendance percentage was more appropriate. This percentage is the ratio of the number of activities attended and the number of activities offered.

The LEAP Task Force distributed and collected questionnaires to both participants and Buddies before and after each ELBS round. These questionnaires included the same twenty-six statements, allowing for a comparison of improvement over the course of the semester. For each of these statements, students chose from a scale of one to five, where one indicated “strongly disagree” and five indicated “strongly agree”. The statements directed students towards self-reflection in various areas, including speaking competence, listening competence, confidence level, interpersonal skills and group work, attitude, creative thinking, and Language Center resource awareness. The analysis compared the results from the pre-event and post-event questionnaires in order to obtain some information on the participants’ perceived improvement over the course of the program.

The paired t-test is used to compare means on two related populations over a defined duration of time. In this case, the null hypothesis states that the mean difference of the pre-event and post-event questionnaire is zero. To test this, the pair’s t-value is calculated, along with its associated p-value. A low p-value indicates there is a significant difference in the means, and thus rejects the null hypothesis. Items with a p-value less than or equal to 0.01 have the most significant changes, items with a p-value less than or equal to 0.05 have relatively large changes, and those with a p-value greater than 0.1 have slight changes. The team performed these calculations in Microsoft Excel.

The post-ELBS questionnaire also included six open response questions. These questions are largely related to enjoyment of the program, skills learned, and any suggestions for ELBS improvement. However, as responses were not available from each round, results from this section of the questionnaire were not considered in the documentation analysis.

The documentation included both Buddy and participant feedback on each activity. There were forms including individual event reports from each Buddy and a mid-term evaluation report. While ideally each Buddy would file a feedback form for each activity they organized, this simply did not occur. Thus, the feedback forms were categorized based on relative topics, such as attendance, activity contents, and communication, with no consideration of which group implemented it. In this manner, the effect of an incomplete data set was mitigated. Participants' feedback was covered in the facilitators' reports. To avoid double counting, this feedback was not considered.

3.2 Participant Survey

A total of 270 students participated in ELBS over the course of its three implementations. The research team administered an electronic questionnaire to collect feedback from these former participants. The purpose of this survey was to determine the types of activities that students found most engaging and encouraged their participation. In addition, the survey assessed the participants' overall impression of ELBS.

The questionnaire consisted of twelve questions (see Appendix C). Its short length was intended to yield a high response rate. The survey consisted of three types of questions: multiple choice (questions 1 and 2), checkbox (questions 3 and 5-10), and scaled (questions 4, 11, and 12). Questions 11 and 12 only allowed responders to choose a rating from one to four. This prevented ambiguous responses since the survey required responders to make a decision, as no rating was neutral.

The web-based application Google Docs hosted the electronic questionnaire. This application provides a convenient and easy-to-use interface for designing questionnaires. Additionally, Google Docs collects responses in a spreadsheet, which may be downloaded into Microsoft Excel. This allows for organized response collection and more convenient response analysis.

The questionnaire was simultaneously sent via email to all 270 previous participants on the first day of the HKUST Spring 2011 semester (see Appendix C). Pre-existing ELBS documentation provided the emails of all past participants. However, due to invalid email addresses, only 241 survey invites could be sent. Due to the large number of past ELBS participants, implementing the survey electronically was a time management technique. In order to encourage a higher response rate, participants were initially given a forty-eight hour period in which to fill out the questionnaire. A longer response period would allow participants too much time to complete it, and would allow them to place a low priority on the survey. Seventy-one responses were received by the end of this initial response period. Less than twenty-four hours after the end of the initial response period, an email was sent informing the former participants that they had another twenty-four hours to respond. This was intended to increase the number of responses even further, and it had the desired effect. This second call prompted another sixteen responses, bringing the final total to eighty-seven completed questionnaires, a response rate of 36%.

3.2.1 Participant Survey Analysis

Survey analysis considered participant responses based on answers given to two different questions: country of origin (question 2) and rounds participated in ELBS (question 3).

The questionnaire consisted of two types of questions: non-scaled and scaled (see Appendix C). To analyze non-scaled questions (questions 5-10), the research team calculated the percentage of students who gave each response. This percentage is defined as the ratio of the number of participants in a category who chose a particular response to the total number of participants in that category, multiplied-by one-hundred. The approach for scaled questions (questions 4, 11, and 12) was to perform a Student's t-test (Statistics Primer: t-tests, 2004).

A Student's t-test allows for a complex comparison of two data sets based primarily off of the mean, variance, and a standard error term. The resulting value is called the t-value. This is then compared to values in a t-table to estimate the p-value of the test. This p-value is a probability indicating how likely it is that the null hypothesis is true. A null hypothesis is a hypothesis about the relationship of two sets of data. For each Student's t-test, the team used the null hypothesis that the averages of the data sets were equal, ($H_0: \mu_1 = \mu_2$). Thus, a p-value less than .05 indicates that these two data sets have a high probability of being the same, meaning that any comparison of their means would provide insignificant results. Conversely, a higher p-value indicates a higher probability of the data sets being the same, meaning that a difference in their averages is significant.

The team produced a computer program written in the Python programming language which performed all analysis on the participant questionnaire (see Appendix D). The user inputs a Microsoft Excel Workbook into the program. The program determines all possible combinations of answers to the selected grouping questions, and then performs the appropriate test on each question. The outputs of the program are plain text files and

Microsoft Excel Workbooks. Each plain text file contains the comparison of two groups over multiple questions. Questions analyzed by the same test are reported in the same file. Each Microsoft Excel Workbook contains the tallied responses of one group for one question. This allows for easy use of Microsoft Excel's chart generation abilities. This comparison was completed across all combinations of ELBS participation, as well as across all regions of origin.

3.3 Buddy Feedback

The original methodology consisted of acquiring Buddy feedback of all three rounds from focus groups alone. However, due to time constraints and a lack of responses from Buddies, Buddy feedback via interviews provided the appropriate information. The research team invited forty Buddies for two focus groups offering two available time slots to attend. However, similar to technical difficulties with the surveys, only twenty-seven emails were sent. Of those twenty-seven Buddies, eight Buddies responded and only two were available to participate in our focus groups. The remaining six Buddies were studying abroad or had other scheduling conflicts. Because the two Buddies signed up for two different time slots, the research team intended to conduct two interviews. However, the two Buddies cancelled the interviews the day of the scheduled interviews. The following week, another email was sent out with a link to the when2meet web-application. When2meet is an online schedule assistant and allows users to indicate their availability for the duration of a specific time. Again, only two Buddies responded, but one attended the scheduled meeting. After some assistance from an ELBS Instructor, two more Buddies were interviewed. In addition to these three interviews, the team conducted

an interview with a student helper, who participated in ELBS as both a Buddy and a participant. Further explanation of this individual, is provided in Section 3.4.

3.3.1 Focus Groups

To generate a clearer understanding of ELBS activities that actively engage students and encourage participation, the team intended to conduct focus groups with past Buddies. Two focus groups were to be held on February 11, 2011. However, as described in the above section, it was decided individual Buddy interviews would be more appropriate. The implementation of these interviews allowed each Buddy to voice their opinions.

The focus group consisted of three phases (see Appendix F). The first phase inquired introductory information from the Buddies along with an ice-breaker activity. The second phase consisted of questions regarding the focus group participants' roles as Buddies. Questions attempted to determine which activities appeared to stimulate student interest and provide recommendations based on their experience. The final phase provided opportunities for closing comments and additional feedback. These phases were adapted into an interview protocol as described in the following section.

3.3.2 Buddy Interviews

Interviews with four Buddies from Fall 2009, Spring 2010, and Fall 2010 and were conducted on February 11, 2011 and February 17, 2011. The interview protocol (see Appendix F) paralleled the focus group protocol in terms of the questions posed and overall goal of the focus group. The following section provides a detailed explanation of

the interview technique implemented with the LEAP staff, which the team later paralleled with the Buddy interviews.

3.4 Interviews

As part of data collection, the research team conducted six interviews with those who could provide an administrative perspective on ELBS. The interviews consisted of three Instructors, two Activity Officers, and a LEAP student helper. The three Instructors assisted with the creation of ELBS and have maintained involvement with the program throughout all three rounds. The Activity Officers joined ELBS in the second and third round. The student helper began involvement in ELBS in the first and second rounds as a Buddy, became a participant during the third round, and interned as a student assistant during that round. These interviews provided feedback and information regarding the structure and effectiveness of ELBS and the potential benefits of PAL.

All interviews conducted were semi-structured interviews. (see Appendices E and F; note that interview transcripts and summaries are not included in this report to withhold interviewee identities). Semi-structured interviews allow the discussion to follow a set of progressive questions, posed by the moderator and documented by the recorder. A semi-structured interview allows both the interviewer and the interviewee some flexibility. The questions are open-ended, allowing the interviewee to direct the discussion and answer the questions with as much detail as necessary. It also allows the interviewer to introduce new, unrehearsed questions into the interview as appropriate. Only two members of the research team conducted the interview so as to not overwhelm the

interviewee. The roles of moderator and recorder rotated between the two members for different interviews.

It should be noted that one Instructor was not available to meet in-person during the interview period, inhibiting the execution of a semi-structured interview. For this interviewee, the list of questions and interviewee responses was facilitated via email.

Each interview consisted of three sections. The introductory section gathered information on the history of the interviewee's involvement with education, HKUST, LEAP, and ELBS. The team scripted this section to contain the same questions for all interviewees, although the actual execution of this section was dynamic. The second section featured questions that examined observational and perceived benefits of extra-curricular activities and social interactions with regard to second language acquisition at HKUST. This section also involved an analysis of LEAP and ELBS, including its structure, effectiveness, and the interviewee's role in the program. The third section consisted of interviewee specific questions. For those individuals involved with LEAP or ELBS for a longer time, such as some of the Instructors and Activity Officers, the questions looked into LEAP's objectives and changes that have been implemented within ELBS. The specific questions for the student helper referred to experiences and observations as a Buddy, a participant, and a student helper. The design of the interviews allowed for a comparison of core questions between all the interviews, and for individual analysis with the role-specific questions.

The choice of Activity Officers and Instructors for interviews was based on their in-depth involvement with LEAP and their understanding of ESL teaching. Upon

recommendations from an Instructor, the team conducted an interview with a student helper. Interviews allow for feedback to be obtained in an open-ended manner from the individuals involved with LEAP.

3.4.1 Interview Analysis

Analysis of the interviews consisted mainly of compiling reoccurring themes for each question posed. Because the interview consisted of open-ended questions, the most appropriate method of analysis was to qualitatively examine the responses for each question collectively and summarize the responses. During the interview, the interviewer asked the interviewee to rate the perceived success of LEAP in meeting its aim of developing English competency on a scale. By rating LEAP's success at developing English confidence and overall English development, a quantitative analysis could be used to compare and contrast answers. The preceding measure drew opinions to help determine the role of extracurricular activities, social interactions, and PAL with regard to supplementing English instruction. The analysis involved a comparison between the interviewees' answers to detect and determine an overall consensus.

4 Results

To meet the project goal of providing feedback and recommendations to future ELBS implementations, the research team established three objectives: identify the most engaging ELBS activities, analyze the effectiveness of the ELBS organizational structure, and identify the potential benefits of peer learning methods in an extracurricular program. To achieve these objectives, the methodology involved an extensive document analysis, supported by an electronic survey with past participants, semi-structured interviews with Instructors, Activity Officers and Buddies, and attempted focus groups with the Buddies. Unfortunately the focus groups did not succeed; however a few interviews with Buddies occurred instead.

4.1 Results of Document Analysis

Analysis of ELBS documentation consisted of three main phases, with one phase for each round. This section details the demographics, attendance patterns, participant questionnaire analysis and suggestions from the Buddies of each ELBS round. Because less feedback is available from the first round, as opposed to the other two rounds, the results section for the first round will be smaller and less detailed than the other two. Additionally, the analysis involves a cross-round comparison.

4.1.1 Fall 2009 Document Analysis

Analysis of the Fall 2009 documents consisted of participant demographics, attendance rates, a pre-event and post-event questionnaire analysis and a summary of Buddy feedback.

4.1.1.1 Participant Demographics

Seventy-eight students participated in the first round of ELBS. The distribution of students by major is shown in Figure 4-1. Seventeen participants majored in science, twenty-two majored in engineering, twenty-two majored in business, and seventeen participants did not specify a major. Ignoring the unknown majors, there seems to be a relatively equal distribution of students from different disciplines.

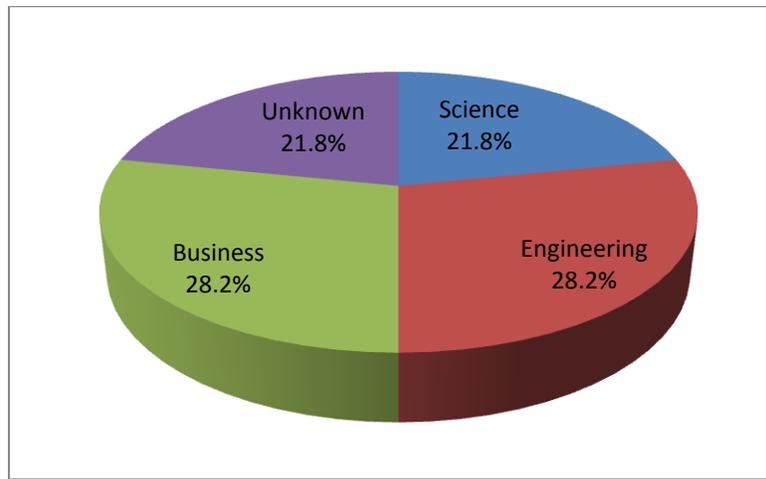


Figure 4-1 Participant Major Distribution of total 78 students for Fall 2009

Head Buddies organized these participants into twelve groups, and a summary of the attendance rate is shown in Table 4-1. Figure 4-2 and Figure 4-3 plot attendance rate against the group size and number of activities offered, respectively.

Table 4-1 Attendance Summary by Group

Group	1	2	3	4	5	6	7	8	9	10	11	12	Average
Group Size	7	6	6	6	7	6	6	7	7	5	7	6	6.3
Number of Activities	7	4	1	7	9	7	7	6	6	6	5	7	6.0
Attendance Rate (%)	79.4	58.3	33.3	57.2	81.1	52.3	81.0	64.3	59.6	46.4	57.1	66.3	61.4

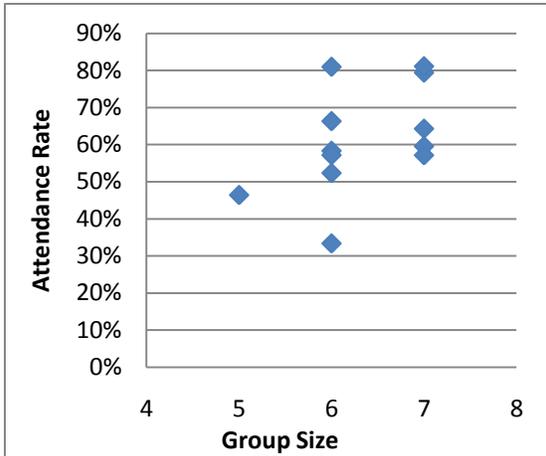


Figure 4-2 Attendance Rate vs. Group Size for Fall 2009

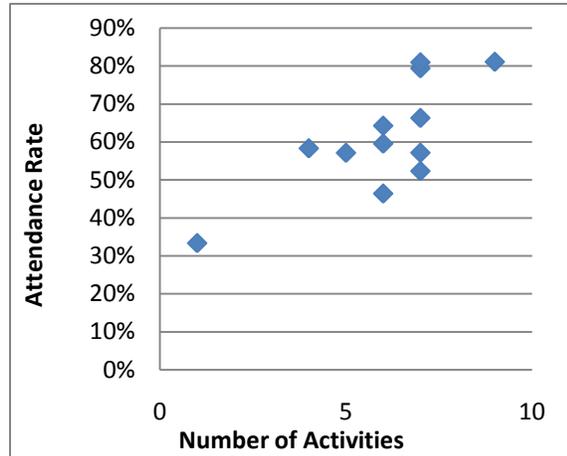


Figure 4-3 Attendance Rate vs. Number of Activities Offered for Fall 2009

Upon first glance at both of these figures, there appears to be a correlation between attendance rate and group size or number of activities. Particularly in Figure 4-3 there appears to be a strong positive linear relationship. However, when considering the attendance rate compared to a range of group sizes or the number of activities offered, groups of size six and seven appears to have higher attendance rate. However, since the sample size is small for groups of five participants, further data is needed in order to suggest the most appropriate participant group size.

4.1.1.2 Pre-event and Post-event Questionnaires

Table 4-2 displays the items posed in paired questionnaires distributed to participants before and after the ELBS program. The questionnaire items are scaled responses from one to five (one being strongly disagree and five being strongly agree), and address multiple areas of English growth. Both the pre-event and post-event questionnaires included identical statements so comparisons could be made between responses. Table 4-3 and Figure 4-4 represent a statistical analysis of the answers from twenty-six out of seventy-eight participants with respect to pre-event and post-event questionnaires for the

first round of ELBS. As some of the participants did not complete both of the questionnaires; their responses were not considered in this analysis. For the original pre-event and post-event questionnaire, see Appendix G.

According to Figure 4-4, participants on average felt they improved their English between the pre-event and post-event questionnaire as demonstrated by the post-event curve lying above the pre-event curve. This could potentially be explained by the sample size. Since all the participants did not complete both the pre-event and post-event questionnaires, it is possible that those who completed both had better experiences than those that didn't. The ten lowest scoring statements concern participants' speaking competencies, confidence level, listening competence, and attitude.

Table 4-2 Pre-event and Post-event Questionnaires for Fall 2009

Q1	I can understand a wide variety of English accents.
Q2	I am able to use English to express personal feelings and emotions.
Q3	I feel confident speaking English in public.
Q4	I am aware of my intonation when I speak English.
Q5	I can sustain a conversation in English by using appropriate strategies, such as taking turns, giving feedback, and asking for clarification.
Q6	I enjoy socialising in English.
Q7	I can use appropriate communicative strategies, such as asking for repetition, and checking understanding.
Q8	I am not afraid of making mistakes in English.
Q9	I enjoy watching English programmes.
Q10	I am aware of the language learning activities and resources available at the Language Center.
Q11	I can express my personal point of view and comment on a variety of topics.
Q12	I am an active and effective team member when engaging in group language activities.
Q13	I am aware of my strengths and weaknesses as a user of English.
Q14	I feel confident talking with native English speakers.
Q15	I can always catch intended meanings, feelings and attitude in conversations.
Q16	My English vocabulary is adequate for participating in conversations.
Q17	My English pronunciation is adequate for participating in conversations.
Q18	My English grammar is adequate for participating in conversations.
Q19	I can initiate and participate in casual conversations with people in English.
Q20	I get used to speaking English to my peers.
Q21	I have clear goals about my future language learning.
Q22	I make use of the language learning facilities and opportunities offered by the Language Center.
Q23	I can understand and respond to complex spoken instructions.
Q24	I can use English in a creative way when I lack the appropriate vocabulary.
Q25	I know where to seek help when I have a problem with English.
Q26	I am highly motivated to become a competent user of English.

Table 4-3 Statistical Analysis of Pre-event and Post-event Questionnaires

Question	Pre-Event Questionnaire			Post-Event Questionnaire			Mean Difference	T-Test
	Mean	Median	Mode	Mean	Median	Mode		P Value
Overall	2.41	2	2	2.68	3	3	0.28	0.16
Q1	2.46	2	2	2.77	3	3	0.31	0.04
Q2	2.81	3	3	3.39	3.5	4	0.58	<0.01
Q3	2.19	2	2	3.12	3	3	0.92	<0.01
Q4	2.62	2	3	3.24	3	3	0.63	<0.01
Q5	2.85	3	3	3.15	3	3	0.31	0.09
Q6	3.15	2	3	3.50	4	4	0.35	0.10
Q7	3.00	3	3	3.42	3.5	4	0.42	0.04
Q8	2.77	2	3	3.19	3	3	0.42	0.09
Q9	3.58	4	4	3.89	4	4	0.31	0.07
Q10	3.50	3.5	4	3.39	4	4	-0.12	0.59
Q11	2.54	3	3	3.23	3	3	0.69	<0.01
Q12	2.92	3	3	3.39	3	3	0.46	0.03
Q13	3.46	3.5	4	3.54	4	4	0.08	0.65
Q14	2.50	2.5	2	2.96	3	3	0.46	<0.01
Q15	2.81	3	3	3.23	3	3	0.42	<0.01
Q16	2.46	2	2	2.92	3	3	0.46	<0.01
Q17	2.54	3	3	3.12	3	3	0.58	<0.01
Q18	2.56	2	2	2.92	3	3	0.36	0.03
Q19	2.81	3	3	3.42	4	4	0.62	<0.01
Q20	2.50	2.5	2	3.23	4	4	0.73	<0.01
Q21	3.39	4	4	3.39	3	3	0.00	1
Q22	2.88	3	3	3.12	3	3	0.24	0.40
Q23	2.73	3	3	3.15	3	3	0.42	<0.01
Q24	2.73	3	3	3.15	3	3	0.42	0.01
Q25	3.08	3	3	3.41	3	3	0.33	0.07
Q26	3.50	3.5	3	3.63	4	4	0.13	0.50

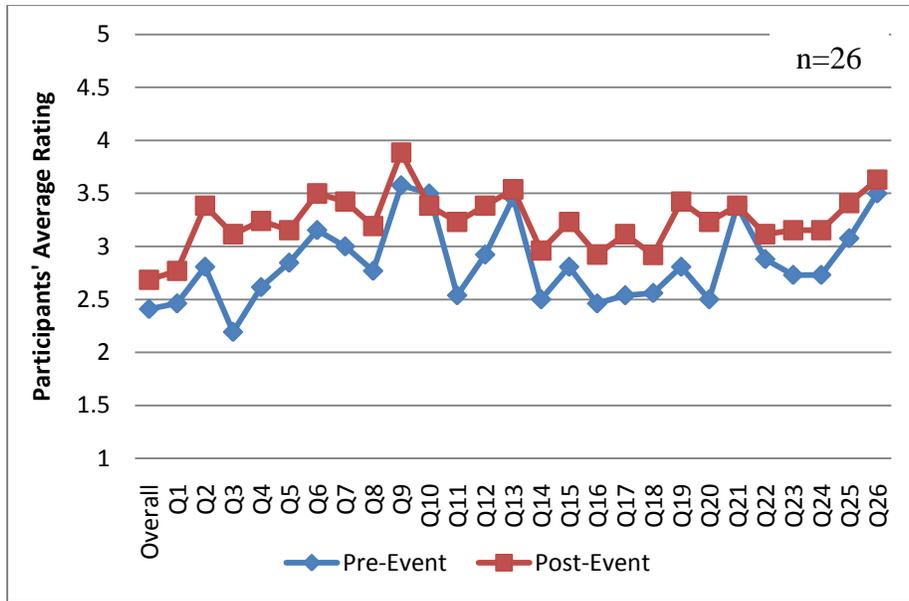


Figure 4-4 Average for Pre/Post-Event Questionnaires for Fall 2009

Twelve questions demonstrate a significant change in response between the pre-event and post-event questionnaires, indicated by a p-value less than 0.01, indicating a confidence level of 99%. These questions address participants' confidence level (Q3, Q14, Q19, Q20), speaking competency (Q2, Q4, Q11, Q16, Q17), listening competency (Q15, Q23), and interpersonal skills and group work (Q12). In addition, there are four questions that show a less significant change, but are nonetheless important to note. Less significant statements are indicated by a p-value between 0.01 and 0.05. Speaking competency (Q7, Q23), listening competency (Q1) and creative thinking (Q24) are all areas that could be affected by ELBS, however more data is necessary to support this observation. Finally, four questions show a relatively small change in rating after one ELBS semester (Q10, Q13, Q21, Q22). Changes in attitude and awareness of Language Center resources seem to be insignificant, if at all.

4.1.1.3 Buddy Feedback

Documents included feedback in the form of open-ended responses from Buddies. This feedback is classified into four themes: attendance, activity content, communication, and paperwork. Under each theme, the feedback is further classified into three groups: preferences or positive moves, dislikes or difficulties, and suggestions.

One of the factors to consider when evaluating ELBS over the course of three semesters is activity attendance. While some initial statistical data may be helpful, Buddies have identified areas that need improvement. Because high attendance rate increases the quality of the program and encourages participation, low attendance is identified as a problem. Considering participants do not respond with their plans to attend, it is often difficult to find times for activities that are available to every participant. Suggestions to improve participant attendance include a fee for the program with monetary refund for attendance at events, scheduling a regular meeting time each week, and beginning the program earlier in the semester.

The planning of weekly unstructured activities also introduces areas of concern. Positive comments stated that topic preparation is beneficial to the flow of the activity, but students preferred to speak about random topics. One Buddy found that sharing sessions encouraged students to speak English more than board games or sports games. However, it was often difficult to engage shy students because they were afraid of making mistakes. A lack of vocabulary is sometimes a problem for students, as they struggle to formulate thoughts without the proper knowledge. In addition, one Buddy found it difficult to reserve rooms on campus for activity use. Buddy suggestions ranged from activity design

to group design. Sharing Buddy feedback with participants could potentially encourage their English growth and activity participation. If the Language Center provided more activity ideas or fixed activities, Buddies would have more guidance in planning weekly unstructured activities. One Buddy also suggested more joint group activities to encourage inter-group interaction. Although the size of the group varies, two Buddies have differing opinions about group design. One suggestion entails enlarging the group size and assigning two Buddies to each group while the some other feedbacks suggests decreasing the group size to encourage participation.

As with many activities involving students with varying schedules, communication within and between groups remains an issue. Buddies mentioned difficulty in reaching participants by telephone. With major changes in scheduling, contact made one day in advance would be appropriate. In terms of communication between ELBS organizers and Buddies, one Buddy suggested reducing the time allotted for proposal submission.

4.1.2 Spring 2010 Document Analysis

The research team conducted analysis of the Spring 2010 documents in a manner similar to the analysis for the first round. However, because Spring 2010 is the second implementation of ELBS, the LEAP Task Force collected more data and feedback for analysis in a more organized manner.

4.1.2.1 Participant Demographics

Seventy-five students participated in the second round of ELBS and their distribution by major is shown in Figure 4-5. Additionally, eighteen students that participated in ELBS

planned to enter the university the following year (Year 0), twenty-six were in their first year (Year 1), twenty-six were in their second year (Year 2), and five were in their third year (Year 3) (see Figure 4-6). The distribution by year shows that over 50% of participants were either Year 0 or Year 1. Among those seventy-five participants, twenty participants majored in science, twenty two majored in engineering, thirty two majored in business, and the last participant chose not to specify a major. Sixteen groups formed out of these participants and an attendance record is available for eleven of the groups. A summary of the attendance rate is shown in Table 4-4. Figure 4-7 and Figure 4-8 plot attendance rate against group size and the number of activities offered, respectively. Note that two data points in each of these figures are the same, giving the appearance that only ten data points are present. When applying to become a participant, the students indicated their interests in different activities. The distribution of their interests is shown in Figure 4-9.

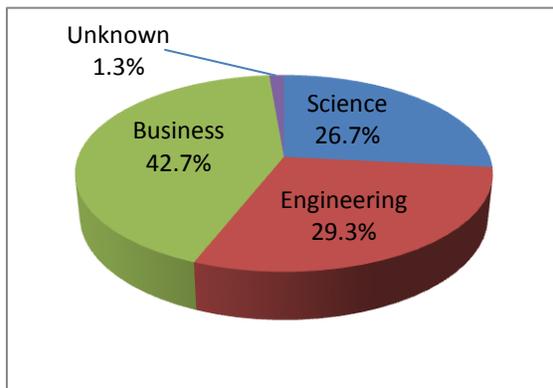


Figure 4-5 All 75 Participants' Major Distribution for Spring 2010

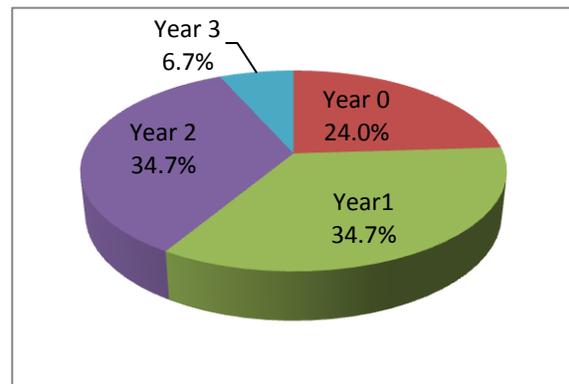


Figure 4-6 All 75 Participants' Year Distribution for Spring 2010

Table 4-4 Participant Group Attendance for Spring 2010

Group	1	2	3	4	5	6	7	8	9	10	11	Average
Group Size	4	5	4	4	4	5	5	5	5	4	4	4.5
Amount of Activities	6	6	6	11	7	13	4	4	5	8	14	7.6
Attendance Rate (%)	87.5	63.3	62.5	38.6	64.3	41.6	80.0	50.0	53.3	72.5	62.5	61.5

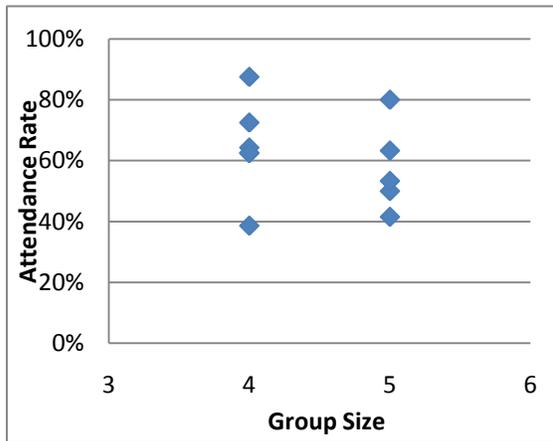


Figure 4-7 Group Attendance Rate vs. Group Size for Spring 2010

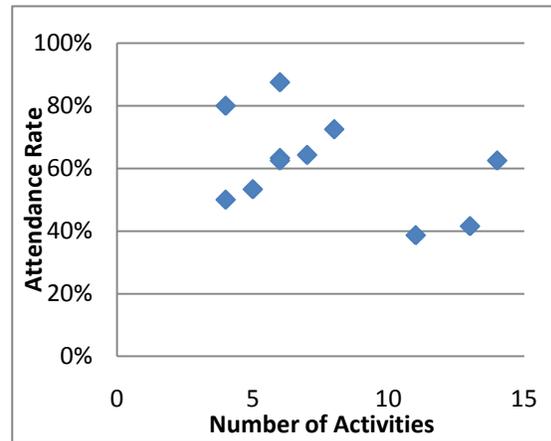


Figure 4-8 Group Attendance Rate vs. Number of Activities for Spring 2010

According to Table 4-4, the average attendance rate for the eleven groups is 61.5%. The attendance rate of four-person participant groups, whose average is 64.7%, is higher than that of five-person participant groups, whose average is 57.6%. A group of four participants seems more engaged than a group of five participants. Figure 4-7 implies that when a participant is offered less than ten activities they have a higher attendance rate than those that are offered more than ten. The figure further suggests that offering four to eight activities is a good range for actively engaging students in ELBS.

The participant applications illustrate that participants are mainly interested in the following activities: movies or television, traveling or languages, food related, sports, and reading (see Figure 4-9). The least interest is found in writing, drama and debates.

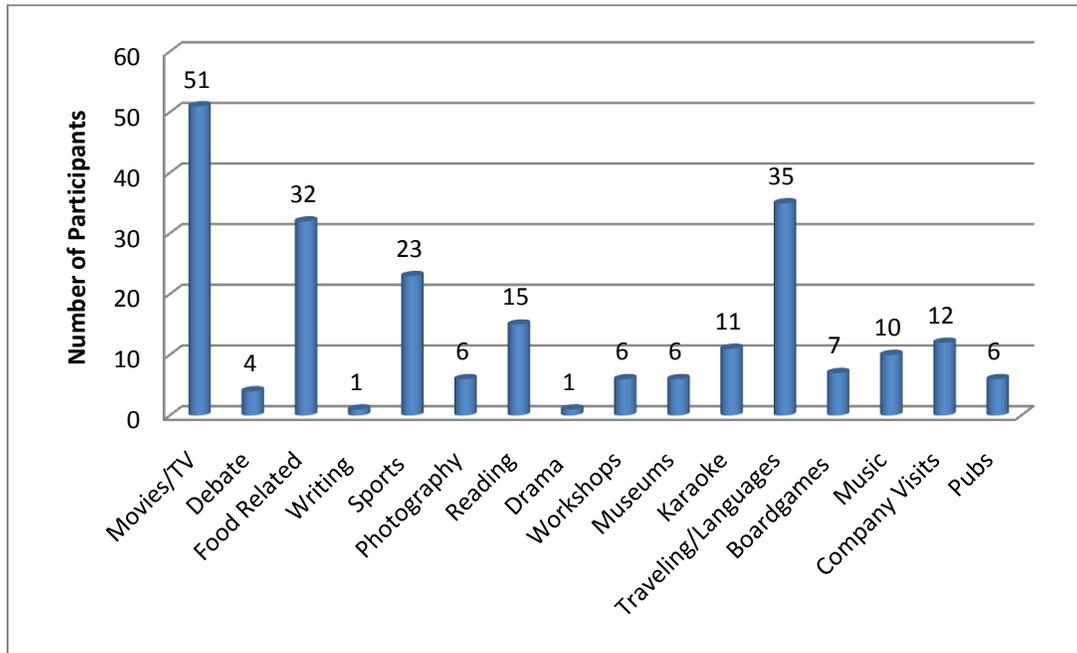


Figure 4-9 Participants' Interest Distribution for Spring 2010

4.1.2.2 Pre-event and Post-event Questionnaires

Seventy-four participants answered the pre-event questionnaire, while only forty-five completed both the questionnaire. Only these forty-five results are taken into consideration for the statistical analysis. The questionnaire consists of the same twenty-six items as those in the first round of ELBS, which can be referred to in Table 4-2 (see Appendix G). A summary of participants' answers is shown in Table 4-5. Figure 4-10 represents a statistical analysis of the answers to pre-event and post-event questionnaires.

Figure 4-10 represents the change of participants' self-evaluation between the pre-event and post-event questionnaires. Nine items averaged a rating of less than three in the pre-event questionnaire, while only one question (Q1) averaged less than three in the post-event questionnaire. The items were very similar to those posed in Fall 2009 (see Appendix G). Listening competencies (Q1, Q15, Q23), speaking competencies (Q16, Q18), confidence level (Q3, Q20), speaking ideas (Q11) and awareness of Language Center resources (Q22) appeared to be weaknesses.

Table 4-5 Pre-event and Post-event Questionnaires for Spring 2010 Statistics

Question	Pre-Event Questionnaire			Post-Event Questionnaire			Mean Difference	T-Test p- value
	Mean	Median	Mode	Mean	Median	Mode		
Overall	3.55	4	4	3.93	4	4	0.38	<0.01
Speaking	3.34	3	3	3.43	3	3	0.09	0.01
Listening	3.61	4	4	3.86	4	4	0.24	0.03
Q1	2.68	3	2	2.93	3	3	0.25	<0.01
Q2	3.16	3	3	3.36	3	3	0.20	0.03
Q3	2.73	3	2	3.14	3.5	4	0.42	<0.01
Q4	3.05	3	3	3.57	4	4	0.53	<0.01
Q5	3.09	3	3	3.57	4	4	0.48	<0.01
Q6	3.34	3.5	4	3.64	3.5	3	0.30	<0.01
Q7	3.30	3.5	4	3.57	3.5	3	0.28	0.07
Q8	3.30	3	3	3.29	2	3	-0.01	0.15
Q9	3.73	4	3	3.79	5	4	0.06	0.10
Q10	3.11	3	3	3.29	3	3	0.17	0.67
Q11	2.88	3	3	3.29	3	3	0.40	0.02
Q12	3.33	3	4	3.14	3	3	-0.18	0.08
Q13	3.48	3	3	3.71	4	4	0.24	0.27
Q14	3.05	3	3	3.00	4	3	-0.05	0.11
Q15	2.95	3	3	3.43	3.5	4	0.47	<0.01
Q16	2.89	3	2	3.14	3	3	0.26	0.04
Q17	3.23	3	4	3.07	4	3	-0.16	0.85
Q18	2.98	3	3	3.21	4	3	0.24	0.34
Q19	3.14	3	3	3.50	3.5	4	0.36	<0.01
Q20	2.73	3	2	3.50	3	3	0.77	<0.01
Q21	3.23	3	3	3.57	4	4	0.34	0.11
Q22	2.84	3	3	3.07	2	3	0.23	0.14
Q23	2.84	3	3	3.21	3	3	0.37	<0.01
Q24	3.00	3	3	3.50	3	3	0.50	0.03
Q25	3.32	3	3	3.57	4	4	0.25	0.10
Q26	3.55	4	4	3.50	4	4	-0.05	0.51

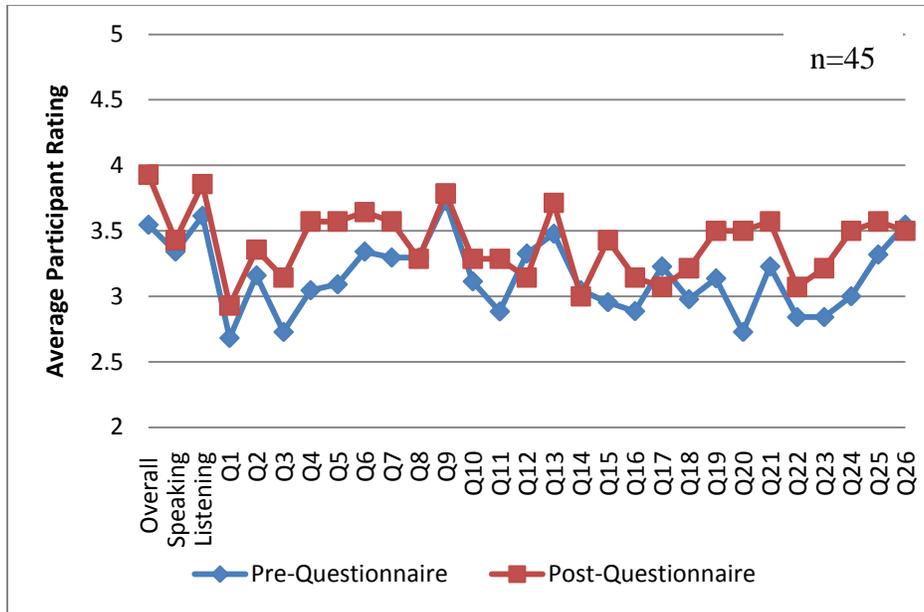


Figure 4-10 Average for Pre-event and Post-event Questionnaires for Spring 2010

As with the first round, many questions yielded a significant change, demonstrated by a p-value of less than 0.01. The t-test revealed areas of improvement among the participants: listening competence (Q1, Q15, Q23), confidence level (Q3, Q19, Q20), speaking competence (Q4, Q5), and attitude (Q6). Furthermore, speaking level, listening level, and four other areas changed to a smaller significant degree with a p-value between 0.01 and 0.05. Among the four areas, three questions show a small significance and pertain to speaking competency and creative thinking. In addition, the lack of change in Q10, Q17, and Q26, which were about the awareness of Language Center resources, speaking competence, and attitude, respectively, suggest these attributes were not impacted much by the ELBS program.

4.1.2.3 Buddy Feedback

In the ELBS document compilation, thirteen Buddies provided feedback. This feedback is classified into seven themes: activity content, attendance, communication, expectations,

group size, motivation, and paperwork. Under each theme, feedback was further classified into three types: preferences or positive moves, dislikes or difficulties, and suggestions.

According to Buddies, attendance rate continued to be a problem in round two. Active participants (usually two or three from each group) remained active except during the mid-term examination period. Buddies claimed that inactive participants had busy schedules with coursework or employment. Similar to the first round, participants did not give notification about whether or not they could attend an event prior to the event. Buddies identified motivation as the main reason why participants appeared not as active as they could be; certificates upon completion were not sufficient to improve attendance. A suggestion to address this problem is to arrange Buddy groups according to schedules. If all members of the group shared their schedules, it would be more convenient to organize activities.

Since ELBS is based on student-run English extracurricular programs, Buddies provided a large amount of feedback with respect to activities. In summary, Buddies found that participants enjoyed more relaxed environments, such as off-campus activities, board games, and movie discussions. Interactions with different cultures also garnered interest, such as Dinner Across Cultures, a structured activity open to ELBS participants that focused on exposing students to different cultures. However, with respect to activity planning, Buddies had some concerns. They reported that it was difficult to plan activities due to budget, time constraints and student interests. Buddies mentioned difficulties with organizing off-campus activities because of the time required to travel.

Students seemed to prefer weekday activities to weekend activities and they also indicated a preference to activities during the day as opposed to evening events.

Additionally, Buddies were unclear on what was expected of them. The workload, minimal organizational assistance, and time commitment surprised them. Language Center support could exist in the form of workshops, activity planning guidelines, and organization of larger group activities. They also suggested that the LEAP Task Force actively participate in weekly organized activities to get to know participants and Buddies. Group design suggestions varied from increasing the group size with two Buddies to flexible group sizes. Buddies felt that groups were not formed appropriately and suggested personal participant interviews to gauge interest and personality matches.

The issue of communication between Buddies and their group yielded conflicting feedback. Buddies stated that Facebook, email and MSN all have advantages and disadvantages for communication. Scheduling problems remained a topic of concern with conflicting schedules and commitments. Buddies mentioned difficulty in contacting participants due to the mode of communication. Consequently, combining smaller groups often produced successful activities. Suggestions included using Google Docs as a communication platform to share activity ideas, proposals and summaries. Buddies indicated they would benefit from a relationship with other Buddies, which could be developed through an orientation or casual meetings.

The flow of information between the LEAP Task Force and ELBS Buddies appears to have a few flaws. Buddies claimed that it was tedious to submit an activity proposal and summary for each activity and the amount of paperwork could be decreased. They

suggested that the documents be simplified, in the form of a soft copy and have reminders sent only to those Buddies who had not yet submitted their paperwork.

4.1.3 Document Analysis for Fall 2010

This section details the document analysis for the third round (Fall 2010) and its structured in a manner similar to the analyses of the previous two ELBS rounds.

4.1.3.1 Participant Demographics

One hundred twenty-eight students participated in the third round of ELBS and the distributions by major and year are shown in Figures 4-11 and 4-12, respectively. There appears to be no significant explanation as to why the participant count for this round is higher than previous rounds. Twenty-one participants were in Year 0, seventy-two were in Year 1, fourteen were in Year 2, nineteen were in Year 3, one was in Year 4 and one was unknown. Among those 128 participants, twenty-six majored in the sciences, forty-six majored in an engineering field, and fifty-nine majored in a discipline of business. Sixteen groups formed out of these participants and an attendance record is available for ten of the groups. A summary of the attendance rate is shown in Table 4-6. Figure 4-13 and Figure 4-14 plot attendance rate against group size and the number of activities offered, respectively. When applying to be a participant, the students indicated their interests in different activities and the distribution of their interests are shown in Figure 4-15.

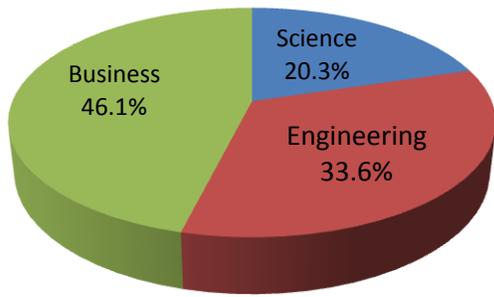


Figure 4-11 Total Participant's Major Distribution for Fall 2010

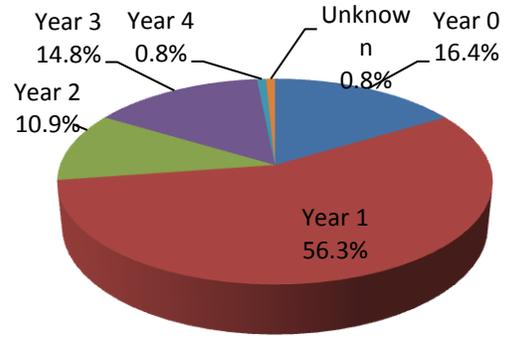


Figure 4-12 Total Participants' Year Distribution for Fall 2010

Table 4-6 Participant Group Attendance for Fall 2010

Group	1	2	3	4	5	6	7	8	9	10	Average
Group Size	7	9	8	8	7	8	7	7	8	8	7.7
Amount of Activities	6	7	15	6	9	3	2	4	15	13	8.0
Attendance Rate (%)	33.3	31.2	29.2	31.3	25.4	29.2	28.6	42.9	26.7	49.0	32.7

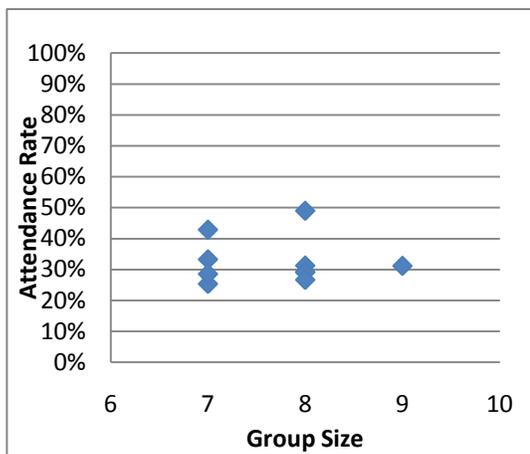


Figure 4-13 Groups Attendance Rate vs. Group Size for Fall 2010

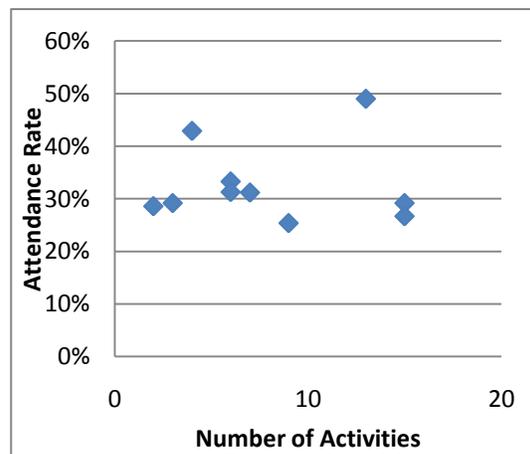


Figure 4-14 Groups Attendance Rate vs. Number of Activities Offered for Fall 2010

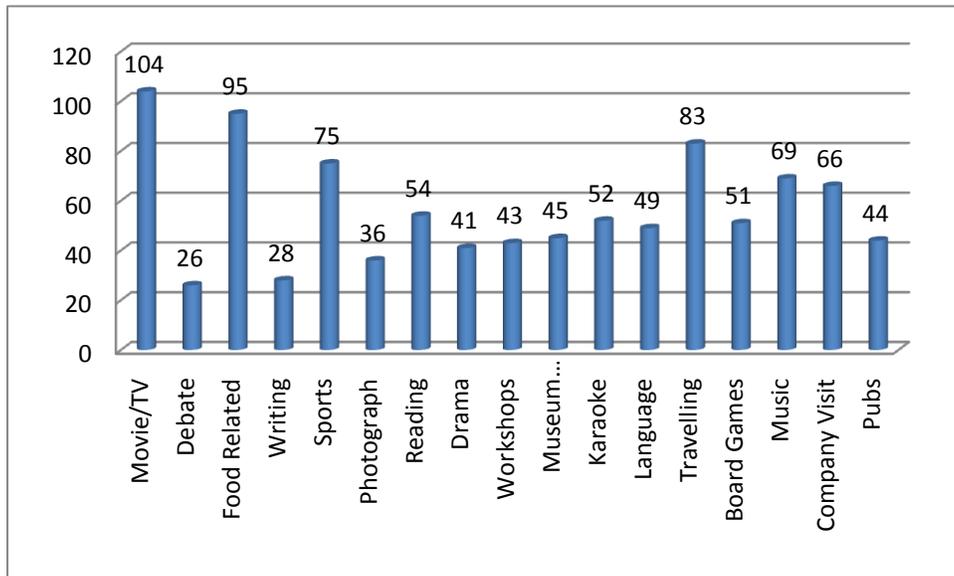


Figure 4-15 Participants' Interest Distribution for Fall 2010

Table 4-6 shows the average attendance rate for the ten groups is 32.7%. With respect to Figure 4-15, participants are mostly interested in the following activities: Movies/TV, Food Related, Sports, Travelling and Music. Three participants suggested other activities of interest that are not included in the graph above: volunteer work, information technology and other technical forms of communication, as well as general chatting.

4.1.3.2 Pre-event and Post-event Questionnaires

Forty participants answered both the pre-event and post-event questionnaires, so their data is statistically analyzed and shown in Table 4-7 and Figure 4-16. The questions answered by each participant are represented in Table 4-2. For the original pre-event and post-event questionnaires, see Appendix G. The questionnaire responses are a scaled response from one to five (one being strongly disagree and five being strongly agree) regarding different statements. The analysis involves a determination of the mean, median, mode, and p-value for the participants' responses to these twenty-six scaled questions.

Table 4-7 Pre-event and Post-event Questionnaires for Fall 2010

Items	Pre-Event Questionnaire			Post-Event Questionnaire			Mean Difference	p-value
	Mean	Median	Mode	Mean	Median	Mode		
Overall	3.30	3	4	3.78	4	4	0.48	<0.01
Speaking	3.20	3	3	3.70	4	4	0.50	<0.01
Listening	3.48	3.5	3	3.93	4	4	0.45	<0.01
Q1	2.62	2.5	2	3.28	3	3	0.65	<0.01
Q2	3.33	3.5	4	3.50	3	3	0.18	0.18
Q3	2.70	3	3	3.50	4	4	0.80	<0.01
Q4	3.10	3	3	3.63	4	4	0.53	<0.01
Q5	3.13	3	3	3.68	4	4	0.55	<0.01
Q6	3.38	3	3	3.70	4	4	0.33	0.04
Q7	3.30	3	3	3.70	4	4	0.40	<0.01
Q8	3.38	4	4	3.58	4	4	0.20	0.20
Q9	3.75	4	4	4.08	4	5	0.33	0.05
Q10	3.35	4	3	3.58	4	4	0.23	0.17
Q11	3.25	3	3	3.48	3.5	4	0.23	0.13
Q12	3.28	3	3	3.63	3	4	0.35	0.01
Q13	3.70	4	4	3.78	4	4	0.08	0.61
Q14	2.85	3	3	3.55	4	4	0.70	<0.01
Q15	3.03	3	3	3.45	3	3	0.43	<0.01
Q16	4.05	3	3	3.13	3	3	-0.93	0.47
Q17	3.33	3	4	3.50	4	4	0.18	0.18
Q18	3.18	3	3	3.43	4	4	0.25	0.03
Q19	3.05	3	3	3.65	4	4	0.60	<0.01
Q20	3.00	3	3	3.55	3.5	3	0.55	<0.01
Q21	3.50	4	4	3.40	3	3	-0.10	0.59
Q22	3.03	3	3	3.38	3	3	0.35	0.02
Q23	2.75	3	3	3.33	3	3	0.58	<0.01
Q24	2.98	3	3	3.43	3.5	4	0.45	<0.01
Q25	3.18	3	3	3.53	4	4	0.35	<0.01
Q26	3.53	3.5	3	3.88	4	4	0.35	0.02

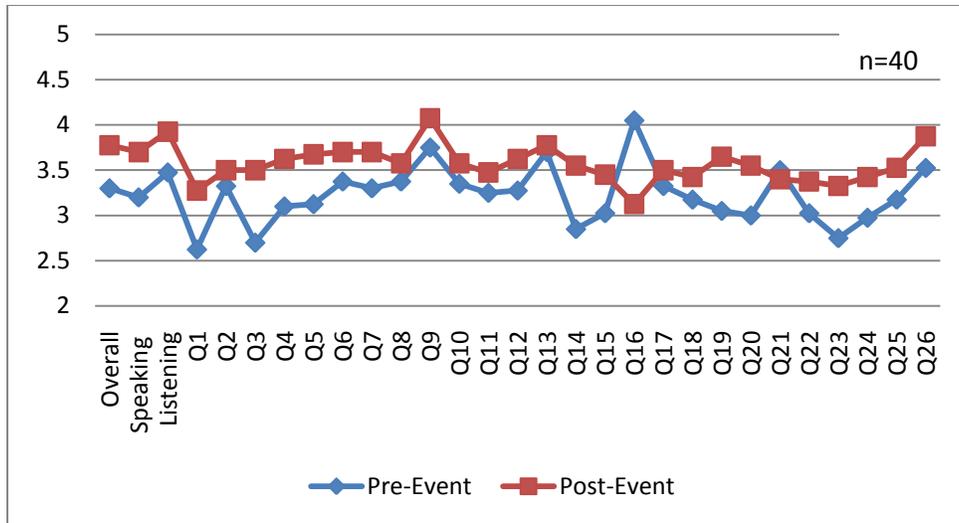


Figure 4-16 Average for Pre-event and Post-event Questionnaires for Fall 2010

Figure 4-16 suggests shows the change of participants’ self-evaluation throughout the program. Ten items have the lowest score in the pre-event questionnaire, indicating a potential weakness. Among the ten items, four are about confidence level (Q3, Q14, Q19, Q20), two items are about speaking skills (Q4, Q5), two items about listening skills (Q15, Q23) and two items are about awareness of LC resources and creative thinking (Q22, Q24).

Among the given items, there are fifteen that have very significant changes (a p-value less than 0.01). The table above shows that the overall English proficiency, speaking skills and listening have significant changes. Additionally, a number of areas displayed impressive changes: in confidence level (Q3, Q14, Q19, Q20), in speaking competencies (Q4, Q5, Q7), in listening competencies (Q1, Q15, Q23), and one in each of creative thinking and awareness of Language Center resources (Q24, Q25).

In addition, five items have relatively large changes (a p-value of greater than 0.01 and less than 0.05). Two of these items concern attitude (Q6, Q26), and the other three (Q12, Q18, Q22) are items concerning interpersonal skills and group work, speaking competency, and awareness of Language Center resources.

Comparatively, there are seven items that have smaller changes (a p-value of greater than 0.1). Four of these items address speaking competencies (Q2, Q11, Q16, Q17), and the other three address confidence level, awareness of Language Center resources and attitude (Q8, Q10, Q21).

4.1.3.3 Buddy Feedback

Similar to the first and second round of ELBS, sixteen Buddies provided feedback in the form of open-ended responses. This feedback is classified into three themes: attendance, activity content, and communication. Under each theme, the feedback is further classified into two groups: preferences or positive moves and dislikes or difficulties.

The first theme to consider is activity attendance. As stated in the previous sections a high attendance rate increases the quality of the program and encourages participation, while low attendance indicates the opposite. With respect to preferences, one Buddy stated that participant involvement dropped during mid-term examinations. Regarding dislikes and difficulties, the Buddies provided overwhelming feedback with respect to time. Multiple Buddies indicated low attendance rate as a major challenge. In addition to this, participants did not put an adequate effort into ELBS. Some participants would arrive late, or not attend without prior notification. Others would come to an activity

without appropriate materials. The feedback also showed that many Buddies struggled to coordinate schedules with their participants.

The next theme investigated was activity content. Under the preferences category, the Buddies provided general and specific feedback. In general, Buddies felt their individual groups enjoyed joint group activities, movies, and the related discussions for the movies. More specifically, one Buddy stated that their participants learned to illustrate rules through board games and another Buddy felt their participants developed confidence throughout the program. Additionally, participants preferred speaking English in a relaxed environment. While many students enjoyed certain aspects of ELBS, some concerns and difficulties developed. While some participants developed confidence in English, others felt too shy and afraid to participate. In another case, some participants needed translations during a movie in order to understand it. Furthermore, one Buddy stated that sporting events did not offer many opportunities to practice English. Finally, some Buddies mentioned budget concerns with respect to dining out.

The Buddies provided minimal feedback on communication. The feedback did not include any comments regarding preferences or positive moves. With respect to difficulties, two Buddies found it difficult to reach participants via telephone. Overall the Buddies provided the most feedback for activity content, and the least feedback for communication.

4.1.4 Summary of Three Rounds of Documents

The number of participants had an increase of roughly 70% during the third round. This increase was from approximately seventy participants in the first two rounds to one hundred and twenty-eight participants in the last round. Business students accounted for 28.2% in the first round, and increased to 42.7% and 46.1% in Spring 2010 and Fall 2010, respectively. The amount of engineering students also increased from 28.2% in round one and 29.3% in round two to 33.6% in round three. Science students are consistently the minority, accounting for 21.8%, 26.7%, and 20.3% of participants in the three rounds, respectively. From Spring 2010 to Fall 2010, the proportion of Year 1 students increased from 34.7% to 56.3%. Also, the number of students from Year 3 and Year 4 more than doubled, rising from 6.7% to 15.6%. However, the number of Year 0 and Year 2 students decreased from 24% to 16.4% and 34.7% to 10.9%, respectively.

Table 4-8 Summary of Average Group Size, Average Number of Activities Offered and Attendance Rate

Round	Average Group Size	Average Number of Activities Offered	Attendance Rate
Round 1	6.3	6.0	61.4%
Round 2	4.5	7.6	61.5%
Round 3	7.7	8.0	32.7%

Table 4-8 above shows that the highest attendance occurred in round one and round two. In the third round, attendance dropped significantly. The average number of activities offered in the third round was slightly higher than in the second round; however, the group size was larger than the first two rounds. Since the sample size is rather small (only

ten to twelve groups in each round), further data is needed in order to investigate group size.

As a result of paired questionnaire data from all three rounds, the participants’ average English proficiency and confidence level prior to joining the ELBS initiative increased from round one to round three (see Table 4-9). Round one has the most significant mean difference; however the median and mode did not change at all. Round two has the smallest mean difference with slight changes in median value. Round three also has rather significant changes in the mean difference as well as in median and mode.

Table 4-9 Summary of Measured Questionnaire Data in Each Round of ELBS Activity

Round #	Pre-Event Questionnaire			Post-Event Questionnaire			Mean Difference
	Mean	Median	Mode	Mean	Median	Mode	
Round 1	2.84	3	3	3.24	3	3	0.40
Round 2	3.15	3	3	3.41	3.5	3	0.26
Round 3	3.23	3	3	3.57	4	4	0.34

Buddies of ELBS had the most comments on round two and the least on round three. In both round two and round three the comments included redundant paperwork and comments reporting that participants misunderstood the program. These participants thought all Buddies were native English speakers. These problems appeared to be resolved in the third round, since they were not mentioned in that round’s feedback. Generally, Buddies comments mentioned difficulty in coming up with activity ideas that are within time and budget constraints, appropriate for small groups, or convenient for all participants’ schedules. They also mentioned concerns on low attendance rate or lack of participation in the activity. One drawback of low attendance is that it forces some

scheduled activities to be cancelled due to a lack of participants. To address this concern, some Buddies combined their groups with others and found it rather helpful. But in many cases, it was difficult to conduct impromptu joint unstructured activities. This suggests joint activities with buddy groups are a good idea, although more effort must be spent planning them.

4.2 Results of Electronic Survey with Participants

Of the 241 emails sent out to former ELBS participants, eighty-seven participants responded to the electronic survey, creating a response rate of just over one-third (36%). Prior to analysis, the first step required the survey results to be grouped by the responses to questions 2 and 3, concerning region of origin and semesters participated in ELBS, respectively (see Appendix C). The team expected that participation in multiple rounds of ELBS would yield greater confidence and skill in English. The analysis grouped participants based on the semesters of their involvement with the program in order to investigate this hypothesis. Additionally, grouping by semester allowed for a view of the program's progress over its three implementations. The team's liaison suggested grouping by region of origin to determine whether or not a difference existed between the students from Hong Kong and Mainland China.

To compare responses between groupings for tally questions (questions 5-10), the research team calculated the percentage of participants that gave each response from each individual group. The analysis involved obtaining all percentages by tallying the number of responders in a category who gave a certain answer to a question and dividing by the

number of people in that category. Since these questions allowed each responder to give multiple answers to each question, some of the percentages given do not sum up to 100%.

The team calculated the average response to scaled questions (questions 4, 11, and 12). However, the mean of the responses can be misleading due to different sample sizes and when the variance in response is high. Thus, a Student's t-test is used to confirm that comparing the means of two data sets is meaningful.

4.2.1 ELBS Semester Participation

The team performed the first categorization based on participant responses to question three, "Which semesters were you involved in ELBS?", which included the choices "Fall 2009", "Spring 2010", and "Fall 2010". Students could participate in multiple rounds, so the questionnaire allowed them to select multiple answers. Thus, the possible combinations are: Fall 2009, Spring 2010, Fall 2010, Fall 2009/Spring 2010, Fall 2009/Fall 2010, Spring 2010/Fall 2010 and Fall 2009/Spring 2010/Fall 2010. The analysis placed students into exactly one category from the list above based on their response to question three, resulting in seven sub-groups with no overlapping.

No students who responded participated in all three rounds. Additionally, no responders participated in both Fall 2009 and Fall 2010. Only one student indicated participation in both Fall 2009 and Spring 2010, which the research team deemed insignificant. Only five students participated in Spring 2010 and Fall 2010, which also supplied insignificant results. Since there was insufficient data from these four groups, they were not considered. This left three groups with significant amounts of data: Fall 2009 with

twenty-two students, Spring 2010 with sixteen students, and Fall 2010 with forty-three students. Their responses to each question are displayed in Appendix H in Figures H-1 to H-9.

Question 4 asked students to rate their attendance of unstructured activities on a scale of one to five (one indicated infrequent attendance, five indicated frequent attendance). The average responder ranked their attendance at 3.3 in Fall 2009, 3.6 in Spring 2010, and 2.5 in Fall 2010 (see Figure H-1). Since a Student's t-test revealed that these three groups are not considerably different, their varying means are statistically significant. Students in the Spring 2010 group attended unstructured activities most often, followed by the Fall 2009 participants. Students from the Fall 2010 group attended least often.

Table 4-10 Top Responses to Question 5

Round	If you did not attend all weekly meetings, why?	
	Schedule conflicts	Too much coursework
Fall 2009	77%	55%
Spring 2010	75%	38%
Fall 2010	63%	47%

All three groups stated that the biggest two reasons for not attending their weekly group meetings were scheduling conflicts and large amounts of course work (see Table 4-10 and Figure H-2).

Table 4-11 Top Responses to Question 6

Rounds	Why did you choose to participate in ELBS?		
	To build English confidence	To practice speaking English	To socialize
Fall 2009	64%	95%	64%
Spring 2010	88%	88%	56%
Fall 2010	58%	79%	51%

Students from all three rounds agreed on the top three reasons for joining ELBS, although the order of importance varied (see Table 4-11 and Figure H-3). They wanted to practice speaking English, build their English confidence, and have the opportunity to socialize.

Table 4-12 Top Responses to Question 7

Rounds	What types of activities did you participate in?			
	Socializing over food and tea	Board games	Workshops	Movies
Fall 2009	73%	68%	27%	50%
Spring 2010	100%	44%	13%	25%
Fall 2010	67%	26%	33%	30%

Table 4-12 and Figure H-4 show that the overwhelming majority of students participated in activities that focused on socializing over food and tea. Participants indicated that board games were the second most attended events in Fall 2009 and Spring 2010, followed by movies. Meanwhile, students in Fall 2010 participated in workshops the second most, and movies the third most.

Table 4-13 Top Responses to Question 8

Rounds	Which activities were most enjoyable?		
	Socializing over food and tea	Board games	Movies
Fall 2009	32%	41%	32%
Spring 2010	81%	13%	25%
Fall 2010	63%	16%	21%

According to Table 4-13 and Figure H-5, there is no consensus as to which activities were the most enjoyable. Fall 2009 students found playing board games to be most enjoyable, followed closely by socializing over food and drink and watching movies. However, both Spring 2010 and Fall 2010 students found socializing over food and tea to be most enjoyable, and all other choices were significantly lower.

Table 4-14 Top Responses to Question 9

Rounds	Which of these activities most improved your confidence in English?	
	Socializing over food and tea	Board games
Fall 2009	36%	36%
Spring 2010	100%	6%
Fall 2010	67%	14%

Table 4-14 and Figure H-6 show that socializing over food and drink ranked highest in both Spring 2010 and Fall 2010 for improving participants' confidence in English. In Fall 2009, socializing over food and drinks tied with board games as the most frequent response. Apart from these two activities, no other activity received a significant portion of the responses.

Table 4-15 Top Responses to Question 10

Rounds	Which ELBS resources most helped your English?		
	Interaction with Buddies	Interaction with participants	Unstructured activities
Fall 2009	55%	32%	50%
Spring 2010	63%	38%	63%
Fall 2010	47%	67%	40%

Students in the Fall 2009 and Spring 2010 rounds agreed that the most helpful resources provided by ELBS for learning English were interaction with Buddies and weekly unstructured activities, according to Table 4-15 and Figure H-7. Fall 2010 participants highly valued their interaction with fellow participants, followed by their interaction with Buddies and weekly unstructured activities.

Students generally thought that ELBS helped their comfort and confidence with English, as well as their actual English skill (see Table 4-16 and Figures H-8 and H-9).

Participants rated their both confidence and skill on a scale from one to four. A rating of a one indicated that ELBS had no effect, while a rating of a four indicated that ELBS had a large effect. Respondents from Spring 2010 thought that their confidence and skill improved the most, resulting in an average self-rating of 2.8 and 2.6, respectively. Fall 2009 students averaged a rating of 2.3 in both confidence and skill. Finally, Fall 2010 respondents gave themselves the worst average rating, rating their confidence improvement at 2.3 and their actual skill improvement at 2.2. As the Student's t-test revealed that these three groups contain equivalent data for both questions, it is meaningful to compare their averages. Thus, the data shows that Spring 2010 participants gained the most confidence and skill out of the three rounds.

Table 4-16 Comparison of Questions 4, 11, and 12

Rounds	Question 4: Attendance (scale of 1 to 5)	Question 11: English confidence (scale of 1 to 4)	Question 12: English skill (scale of 1 to 4)
Fall 2009	3.3	2.3	2.3
Spring 2010	3.6	2.8	2.6
Fall 2010	2.5	2.3	2.2

All of this data implies the existence of some trends. Unsurprisingly, there is a correlation between rate of attendance and improvement in both English confidence and actual English skill. Spring 2010 recorded the highest attendance, and thus improved the most in confidence and skill. Although Fall 2010 had the lowest attendance, it received ratings comparable to Fall 2009 in both English confidence and English skill.

The other interesting trend apparent in the data is the relative success of the Spring 2010 round (see Table 4-16). Although its prevalence in English confidence and English skill can be explained by higher attendance, the higher attendance requires an explanation. The participant questionnaire provides one suggestion. Students from all three rounds cited too much coursework as the second most popular reason for missing weekly meetings. However, the surveyed showed that the issue of coursework was not as large for Spring 2010 participants. Thus, it may be that participants were less burdened with coursework in Spring 2010, meaning that the success of the round was not due to ELBS implementation choices.

It is also possible that the success of Spring 2010 is due to group size. Fall 2010, which had the worst attendance, also had the largest group size (seven to eight students). Fall 2009 had the second largest groups, consisting of six to seven participants. Spring 2010

had the smallest group size, ranging from four to five participants. Thus, the data suggests that group size may have an impact on attendance and effectiveness at improving English skill and confidence, but further research is needed.

4.2.2 Region of Origin

The project sponsor expressed interest in differences between the experiences of students from Mainland China and Hong Kong. Thus, the research team analyzed the questionnaire with regards to the participants' region of origin. The questionnaire categorized the responses into three groupings: Hong Kong, Mainland China, and other. The analysis placed students into exactly one group based on their response to question two.

Only five students who responded came from regions other than Hong Kong or Mainland China. Due to this lack of data, their responses were not considered in this grouping. This left two groups with significant amounts of data: Hong Kong with fifty-four students and Mainland China with twenty-seven students. Although the team performed a question-by-question comparison of these categories, no significant difference was found between them. Their responses to each question are displayed in Appendix H in Figures H-10 through H-18.

4.2.3 Summary of Results from all Participants

While considering results classified by a certain property, such as region of origin or rounds participated in ELBS, can be very useful, it is important to look at the data set as a whole in order to identify overall trends. Thus the research team analyzed the entire data

set in a similar method to the previous sections. The responses to each question are displayed in Appendix H in Figures H-19 through H-27.

The average ELBS participant rated their attendance at a 2.9 on a five-point scale (see Figure H-19).

Table 4-17 Top Responses to Question 5

Question number	If you did not attend all weekly meetings, why?	
	Scheduling conflicts	Too much coursework
Question 5	70%	49%

As shown by Table 4-12 and Figure H-20, more than two-thirds of the participants noted scheduling conflicts as the most popular reason for not attending weekly meetings. Additionally, nearly half of them cited too much coursework as an obstacle.

Table 4-18 Top Responses to Question 6

Question number	Why did you choose to participate in ELBS?		
	To practice speaking English	To build English confidence	Opportunity to socialize
Question 6	85%	67%	55%

Table 4-18 and Figure H-21 shows that the opportunity to practice speaking English and to build English confidence are the most common reasons for joining ELBS. The third largest reason was the opportunity to socialize.

Table 4-19 Top Responses to Questions 7, 8, and 9

Question 7: What types of activities did you participate in? Question 8: Which activities were most enjoyable? Question 9: Which of these activities most improved your confidence in English?				
	Socializing over food and drink	Board Games	Movies	Workshops
Question 7	75%	41%	36%	17%
Question 8	59%	21%	23%	18%
Question 9	67%	17%	11%	17%

According to Table 4-19 and Figures H-22, H-23, and H-24, activities centered on socializing over food and drink were the most attended, most enjoyed, and most effective activities offered. While board games were the second most attended and second most effective, movies were the second most enjoyed by a slim margin. Workshops tied with board games are the most effective, despite having low attendance, and lagging behind movies and board games in enjoyment.

Table 4-20 Top Responses from Question 10

Question number	Which ELBS resources most helped your English?		
	Interaction with Buddies	Interaction with participants	Unstructured events
Question 10	53%	53%	46%

Of all the ELBS resources, peer interaction appears to be what assisted students with their English the most (see Table 4-20 and Figure H-25). Specifically, students indicated interaction with Buddies, interaction with participants, and weekly group events as the most helpful resources.

While students think that ELBS helped build both their English confidence and actual English skill, neither improved significantly (see Figures H-24 and H-25). On average, participants' rated their improved confidence a 2.4 and their English skill a 2.3, both on a four-point scale.

4.3 Results from Interview Data

The team conducted nine interviews: three with Buddies, three with Instructors, two with Activity Officers, and one with a student helper. These interviews provided background information along with different perspectives on PAL and the current ELBS structure (see Appendices E and F). The interviewees agreed to have their comments summarized and published; however they requested to remain anonymous.

The Activity Officers and Instructors have a range of educational experience from seven to twenty six years. Of this experience, the Instructors have been actively involved with HKUST for at least four years and assisted with the initial implementation of LEAP. One of the Activity Officers interviewed helped organize the second and third round of ELBS, while the other Activity Officer began in the third round. The student helper participated as a Buddy in the first and second round; however in the third round decided to step

down from being a Buddy and became a participant. Part way through the third round, LEAP offered this participant an internship as a student helper, which they accepted. Between the student helper and the other three Buddies interviewed, there is feedback from a Buddy in each round. One Buddy participated in the third round and the other two Buddies participated in the second round.

4.3.1 English Competency among ELBS participants

Developing English competency is the aim of LEAP, and the interviewees believed there was a clear development of confidence in speaking English among the participants. Interestingly, this differs from the feedback provided in the document analysis and participant survey, which indicated less improvement. The interviewers asked the Activity Officers, Instructors, and the student helper to assess the perceived improvements among participants as a result of ELBS on a scale of one to five (one being “not at all” and five being “exceeding expectations”). This is a difficult assessment to make because there is no form of evaluation currently implemented. Table 4-21 displays the tabulated numerical results from the interviewees. It is important to note that one of the interviewees did not answer these questions, and another did not answer the first question.

Table 4-21 English Language and Confidence Improvement Ratings based on LEAP Administrative Personnel

English Language	English Confidence
2	4
2.5	4
3	5
3	5
-	4
AVG: 2.6	AVG: 4.4

As shown in Table 4-21, the average ratings for English language improvement and English confidence improvement are 2.6 and 4.4 respectively. The interviewee’s rated English language rather low in comparison with English confidence because LEAP is not as concerned with reading, writing, or speech development, as much as it is with confidence in the language. However; development in these areas of English may be indirectly influenced. The development of English confidence is apparent in those shy students who participate often; according to one interviewee, those are the students who deserve a rating of a five on their English confidence in Table 4-21. Some interviewees claimed it is difficult to notice any improvement in those students who don’t participate often, or those who already appear to have a developed confidence in their English. One interviewee noted that Buddies indirectly benefit from ELBS with management skills development; however their English skills remained at the same level.

4.3.2 PAL and Social Interactions

Another component of the interview aimed at determining the benefits of PAL and social interactions. LEAP offers extracurricular activities that supplement the academic curriculum, yielding general consensus among the interviewees about the benefits of PAL

and social interactions. Interviewees suggest social interactions provided students with more meaning and application of the language, encouraging them to use the language.

Table 4-22 summarizes the main concepts concluded from the interviews about PAL participation and benefits. The top three reoccurring themes are summarized, in no particular order, in the table.

Table 4-22 Summary of LEAP Administrative Personnel Interview Comments

Question/Response	1	2	3
Why do students partake in ESL PAL activities such as ELBS?	Language Barrier: students need to develop confidence in using English, working with students who have a similar barrier creates a less competitive environment	Career: English is necessary in their future	Culture: to practice English with international students, offering cultural perspectives,
What do PAL activities offer students?	Curriculum supplement: additional opportunities to reinforce the language outside of lectures	Comfort: PAL extracurricular activities offer students a place to practice without pressure	Opportunity: students typically converse with each other in their native language, this is an opportunity to use English in Hong Kong
What PAL activities seem to work best for students?	Career-oriented workshops: local students find these important and worthwhile	Social gatherings: specifically over a meal, are the most popular in attendance	Competitive activities: culturally, it's very common for winning team to punish losing team, providing incentive

Specifically, the Buddy interviews aimed at determining the activities that engaged and encouraged participation. All of the Buddies interviewed suggested that the participants benefit from structured activities and workshops that correlate to these activities. The Buddies provided mixed feedback for every activity, indicating that activities need to be

tailored to each group. A couple of the interviewees suggested that the activities should be varied throughout the round, in addition to being tailored to the individual groups.

Table 4-23 summarizes the feedback provided by Buddies for different activities.

Table 4-23 Summary of Buddy Interview Comments

	Pros of activity	Cons of activity
Board Games	Participants learn how to read English instructions and communication is required in order to play	Repeated game play leads to a lack of interaction
Hiking	Good way to socialize and exercise	
Movies	Popular, requires participants to pay attention for a discussion	Not a lot of interaction
Problem Solving Games (such as Charades)	Requires participants to think in English, fun	
Socializing over food / tea	Popular activity, plenty to speak about creates relaxing, enjoyable environment	Besides talking about food, not much else to talk about
Sports	Can be popular	Minimal interactions
Workshops	Popular, when correlating to other activities it is very helpful	

4.3.3 ELBS Structure and Management

While a general consensus existed regarding English competency and PAL and social interactions, opinions about the most optimal structure and management of ELBS varied. Each of the interviewees noted different areas of concern, regarding their personal experiences. The following is a summary of the feedback obtained with regards to ELBS structure.

All of the interviewees' concerns can be organized into two main categories, task delegation and document management. There were many concerns with document management. Between the Activity Officers, Instructors and Buddies, many forms are exchanged. Timesheets, feedback forms, and activity proposals are submitted to the Activity Officers and Instructors often times refer to them. The first round used the Learning Management Evaluation System (LMES), causing some inconvenience for the Buddies, but provided a means of organization for the Activity Officers and Instructors. Because it was an online workspace, Buddies and LEAP staff alike could upload and download pertinent documents. Buddies noted that it was inconvenient to log in each time a form submission was due. According to one interviewee, it was more convenient to send documents attached via email. This was used in round two, with Activity Officers receiving documents via email and then organizing them in an ELBS workspace. Another interviewee suggested implementing hard copies instead of soft copies to ease the flow of information between ELBS organizers. Communication between the Instructors and Activity Officers appears to need some improvement and this issue could be relieved with an efficient document management system, potentially even reintroducing LMES.

Task delegation also appears to be a recurring theme within interviewee discussions. Buddies and Activity Officers indicated a lack of transparency with the roles of the Instructors when asked. While Instructors played a prominent role in the first round, their responsibilities decreased significantly with the introduction of Activity Officers in the second round. Currently, the Instructors appear to have a supervisory role in ELBS. One interviewee described ELBS as a student-run program with support from administrative

staff. Communication issues could be a result of the unstructured delegation of tasks; attention to this could improve overall ELBS efficiency.

5 Discussion

Preceding this section, results obtained from multiple methods demonstrated a comprehensive collection. This section contains a discussion of implications and comparisons pertaining to each individual objective.

5.1 Objective 1: Identify ELBS activities that actively engage students and encourage participation

Data from all sources agree that events involving socialization over food are the most attended activities, are enjoyed by most participants, and are effective at improving English confidence, as well as actual English skill. This has been seen through previous structured and unstructured ELBS events. Board games also seem to hold value for participants. Their popularity is shown in the questionnaire results (refer to Figures H-5, H-14, and H-23 in Appendix H), and Buddies have reported on their effectiveness. As long as they are not repeated too often, board games have the ability to seize and maintain the attention of the students. Workshops of various topics are often popular due to their value outside of an academic setting. The participant survey shows that a number of students feel workshops have a positive effect on their English abilities, so it may be advisable to expand the range of workshops offered. Finally, one Buddy interviewed implemented a problem solving activity (charades) which proved to be a success. In addition to the participants enjoying it, the requirement for communication and problem solving encouraged the development of their language and non-language skills. As the literature review agrees that problem solving activities are effective at teaching a second language, the team concluded that it may be worth looking into more problem solving and situational activities in the future. Activities that encourage participants to engage in

group problem solving are suggested, such as The Human Knot (Human Knot Icebreaker, 2011).

However, not all popular activities are effective. The data shows that movies are very popular amongst participants, and their use is even supported by previous research in second language acquisition (Chapple and Curtis, 2000). However, the ELBS program is designed to aid students in developing confidence in speaking English rather than actual English ability. Since movies do not provide viewers opportunities to speak, Buddies noted that they did not lead to significant confidence. To improve implementation of movie related activities, Buddies suggested organizing discussions related to the movie. Additionally, the ELBS staff indicated the popularity of sporting events amongst the students. However, similar to problems with movie viewing, the Buddies feel that sports do not offer enough chances for students to practice their English. This sentiment is echoed in the participant survey.

Some Buddies reported having difficulty coming up with event ideas. They encountered problems such as time and budget constraints, scheduling conflicts, and consideration of participant interest. Ensuring that activities encouraged English practice was an additional hardship. In light of this, it may help if LEAP provides Buddies with a list of pre-approved activities and assists them in executing these events. Additionally, participant attendance proved to be a recurring issue. Finding a time that worked for everyone seemed to be difficult due to scheduling conflicts. The participant survey and Buddy feedback corroborated this report, as participants cited scheduling conflicts and amount of coursework as the two main reasons for missing weekly unstructured meetings.

Buddies found activities with multiple groups (known as joint unstructured activities) succeeded in combating both of the previously mentioned problems. Participants enjoyed this type of activity because it offered them the chance to socialize with more peers and make new friends. Joint unstructured activities allow for the execution of activities requiring more participants. However, as effective as this tactic is, it can be difficult to implement due to the lack of familiarity between Buddies. Buddies would like to see more support for events of this kind from LEAP, and even suggested regular casual gatherings of Buddies in order to increase familiarity.

5.2 Objective 2: Analyze the ELBS structure and its effectiveness in meeting the intended learning outcomes

The overall goal of ELBS is to instill in its participants a wide range of skills, allowing them to communicate with a variety of people in an array of situations (see Appendix B). The data indicates that ELBS is achieving this goal quite well. Through each round, participants developed confidence when speaking English in public and when conversing with native English speakers. Additionally, their vocabulary increased, their grammar improved, and they became more aware of intonation. In terms of listening, they developed the ability to understand the contents of a conversation and different accents. Thus, based on the results obtained, ELBS is meeting its intended learning outcomes.

The participant survey data revealed an interesting result for Spring 2010 round of ELBS. All rounds except Spring 2010 show similar results for attendance, confidence improvement, and English improvement (see Table 4-16). Spring 2010 ranked the highest in all three of these areas according to participants' survey answers. Specifically, Spring 2010 participants think they improved the most in both English confidence and

English skill by a small but respectable margin. However Spring 2010 has the least change in mean difference between pre-event and post-event questionnaires. According to both the participant survey and document analysis, Spring 2010 had the highest attendance. There is evidence showing that attendance rate may be tied to group size. This round had rather small groups, containing between four and six members. Conversely, Fall 2010 experienced the lowest attendance and had groups of between seven and nine participants. This would seem to indicate that group size is linked to attendance. However, further research is needed to confirm this hypothesis.

Despite its successes, ELBS is still a developing program with areas for improvement. Document management is a problem they have been dealing with since the first round. Round one used the Learning Management and Evaluation System (LMES) for activity proposals, activity feedback, important announcements, and many other documents intended for staff, Buddies, and participants alike. While this provided a lot of transparency and efficient organization, the Buddies found it to be a very inconvenient system. They preferred email for important documents. Thus, beginning in round two, LEAP made use of email communication for announcements and document submissions. However, this had the effect of distancing the Instructors from the activity proposal process, as the Activity Officers primarily handled activity proposals and feedback. Thus, it may be worth reintroducing LMES, or investigating another, more transparent method of document submission for Buddies to utilize, such as Blackboard.

The issue of task delegation repeatedly arose during interviews. Some of the interviewees stated that they did not entirely understand the involvement of the

Instructors in ELBS. One possible explanation is that the Instructors have a supportive role. Instructors were more directly involved with ELBS during round one, but that changed with the hiring of Activity Officers for rounds two and three. One interviewee even described ELBS as a student-run program with support from administrative staff. This view could arise from the lack of transparency and communication between ELBS staff since moving away from LMES. If ELBS is to continue to function smoothly, it seems that greater transparency on the part of all administrative staff is necessary.

5.3 Objective 3: Identify the potential benefits of peer learning methods in an extracurricular program

One of the most championed aspects of ELBS is that it is a peer-assisted learning (PAL) program. Much of the data collected indicates that it is very effective in large part due to its status as a PAL program. A PAL program offers students a more comfortable, relaxed environment to practice their English as compared to in-class programs. Adding to the casual environment is the fact that each group and weekly meeting is made up entirely of students. Previous research showed that these factors are very important in triggering language acquisition (Huang and Eskey, 1999). Thus, according to current second language acquisition theory, ELBS is a good setting for students to acquire a second language.

Participants found the peer interaction resources offered by ELBS to be the most useful (refer to Figures H-7, H-16, and H-25 in Appendix H). Specifically, students felt interaction with Buddies and other participants assisted in improving their confidence and general English skills, as did the weekly unstructured activities. While some participants

felt structured activities and the LEAP staff were helpful, peer interaction resources garnered the strongest consensus.

5.4 Recommendations

Although ELBS is functioning well, there is still room for improvement.

Administratively, the most significant issue appears to be a lack of transparency amongst staff members. Asking Buddies to submit their forms by email is largely responsible for this. In order to combat the issue, it may be beneficial to return to a central document submission system, such as LMES or Blackboard. These systems provide a convenient method for organizing and archiving documents while allowing all administrators to view them.

Many of the activities offered by ELBS are enjoyable, but not all are effective at improving English. Sporting events and movies are two examples that fall into this category. In these activities, English communication must be emphasized more strongly to meet ELBS intended learning outcomes (see Appendix B). At the same time, more successful activities, such as socializing over food and tea and board games, should be used as a basis for creating new activities. These activities are very popular and effective, but Buddies have indicated that too much repetition can diminish their effect. Workshops have some popularity and a measurable (although not prominent) effect on English ability. Interviews showed that students enjoyed these activities and the non-language skills gained from them, such as presentation skills and cultural awareness. Thus, it would be worthwhile to increase the number of ELBS participants that attend. Offering more workshops and varying the subject matter is one way to achieve this. The suggestion of

problem solving activities offers the benefit of learning useful skills in addition to English confidence, such as problem solving and working as a team. Examples of these kinds of activities include charades and The Human Knot (Human Knot Icebreaker, 2011).

More generally, ELBS should provide Buddies with more assistance in planning individual group activities. This includes the conception of activities as well as their execution. Maintaining a database or website containing information about previously run activities, including instructions on how to run them, could provide the desired assistance. Instructors could also hold workshops to teach Buddies the mental pathway to activity development.

Since both participants and Buddies found so much success in joint unstructured activities, ELBS organizers should look more into assisting them in conceiving and implementing them. However, some Buddies reported difficulty in conducting joint unstructured activities. This was partially due to the lack of familiarity among Buddies. ELBS organizers may consider assigning each group a partnering group during orientation. While these groups would remain separate, they could contact each other to plan joint activities, thus easing the planning and execution of activities. While Buddies did emphasize this idea in feedback forms, more data is needed to determine the best way for conducting joint groups.

Despite all the preceding recommendations, the data suggests that the structure and execution of ELBS is working quite well. Participants find Buddies and other participants to be very beneficial to improving their English skills and confidence level,

indicating that ELBS's PAL approach is effective. Many of the core activities experience a good amount of success both in attendance and confidence building, although there is room for improvement. The ability for Buddies and participants to propose activities allows for each group to tailor its activities to the interests of its members. Although ELBS is functioning well, as a young program it still has the opportunity for further development.

6 Conclusion

The scope of this project encompassed the functionality, efficiency, and effectiveness of the Hong Kong University of Science and Technology's (HKUST) English Language Buddy Scheme (ELBS). Since its initial implementation in the fall semester of 2009, ELBS's purpose has been to increase student English language confidence. Courses at HKUST are taught in English, however many HKUST students are not fluent in English. To address this issue, ELBS functions as a supplement to traditional classroom lectures. Throughout the course of its existence, ELBS has remained an extracurricular-activity based program with peer tutors known as Buddies. However, changes occurred in its organizational structure, document management and participation levels throughout its past three rounds. Our project aim was to consider these changes and provide feedback and recommendations for future ELBS implementations.

A review of ELBS through a comprehensive document analysis, a participant survey and interviews with organizational staff and Buddies revealed potential areas of improvement. These areas include further communication development and activity development support. Based on experiences with the LEAP Task Force, several Buddies and HKUST students, we suggest the following for ELBS: an implementation of a structured documentation system, further support for both popular and effective unstructured activities, and the increased availability of structured activities.

In addition to traditional research methods, the research team was also given the opportunity to participate in a two-day conference held by HKUST's Language Center. The conference entitled "Communication and Cultural Values: Connecting the Dots"

consisted of plenary speakers, student presenters, a round-table discussion and a problem-solving seminar. As student presenters, we shared our opinions and personal experiences regarding university life and work-life balance. Interactions with the other conference participants provided personal insight unattainable from research alone. HKUST students' English skills and their mannerisms were evident through their conversations. Not only did this experience provide valuable knowledge about students' verbal English exchange, but it yielded exposure to the Language Center's programs and further developed project recommendations.

Throughout the research period, interactions with HKUST students and faculty provided the research team with insight, exposure and feedback to make recommendations.

However, given the time constraints and unforeseen circumstances such as limited student response to data collection attempts, there are research gaps to be filled in the future. While some Buddy feedback was available, further emphasis on their opinions and development is needed. More research on cultivating successful Buddies could be beneficial to ELBS. This may include investigating which personality traits are most desirable in a Buddy, or creating workshops aimed at developing successful Buddies.

Feedback from the document analysis and interviews also suggested a potential study into the most effective organizational scheme for the unstructured activities that consider possible changes such as group size and Buddy distribution between the groups. Based on our project experiences, both of these ideas appear to be interesting and more research is likely to further advancements in ELBS improvement.

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8 Glossary of Acronyms

Term	Definition
Buddy	Activity Facilitator
ELBS	English Language Buddy Scheme
ESL	English as a Second Language
HKUST	Hong Kong University of Science and Technology
ILO	Intended Learning Outcomes (see Appendix B)
LEAP	Language Enrichment Activities Programme
LMES	Learning Management Evaluation System
L2	Second Language
PAL	Peer Assisted Learning
Structured Activities	LEAP sponsored activities
Unstructured Activities	Buddy organized activities

Appendix A: Student Conference

In order to become familiar with the HKUST student body and LEAP, the research team participated in the student conference “Communication & Cultural Values: Connecting the Dots”, hosted by LEAP. The group participated as student presenters and as master of ceremonies for the student presentations. The original summary for the conference is listed below.





OVERVIEW

The Language Center is pleased to announce the first of a series of student conferences on communication and cultural values: “Connecting the Dots.”

The Conference aims to promote interaction and discussion among students from different cultural backgrounds who are interested in university, career and life planning, goal setting, and work-life balance. It also allows students who may want to present academic papers for future conferences to gain authentic experience and solid practice in delivering formal presentations in front of a wide audience of diverse backgrounds. Contribution of papers is invited from students from all departments and years.

Invited keynote speakers, HKUST alumni and students of different academic or industry backgrounds will share their experiences and viewpoints, and interact with participants via plenary speeches, presentations, interactive workshops, and a round table discussion. It is hoped that this meaningful multi-party exchange will inspire students to re-examine their current views on paths one can take to achieve success, and spark off serious self-reflection and earlier career and life planning to increase their chance of success in life.

DETAILS

Date:	20 – 21 January 2011
Venue:	The Hong Kong University of Science and Technology
Registration Deadline:	14 January 2011
Registration Fee:	
(for HKUST Students)	HK\$100 (refundable)
Audience:	Undergraduate and postgraduate students
Medium:	All events are to be conducted in English
Contact:	conf2011@ust.hk
Registration:	Conference Registration Form

TOPICS TO BE COVERED

Life's Expectations:

*"You have to expect things of yourself before you can fulfill them."
– Michael Jordan*

What do you see when you envision yourself in 5 years? 10? 20? 50? Why?
How are your expectations determined and how are they measured?

Goal Setting:

"A goal properly set is halfway reached." – Abraham Lincoln

Why are goals important? Why do professors, parents, and mentors constantly hound you about setting goals for the future? How do you make sure they are specific, measurable, realistic, and timely?

University Experience

"It is indeed ironic that we spend our school days yearning to graduate and our remaining days waxing nostalgic about our school days." -Isabel Waxman

What do you want to get from your university experience? How do you make the most of it to gain a competitive edge?

Work-Life Balance:

"Find a job you love and you'll never work a day in your life." – Confucius

What role does work play in your everyday life? Should you live to work or work to live? How do you determine an acceptable balance for work, play and other responsibilities?

Developing and Maintaining Relationships:

"No road is long with good company." – Turkish Proverb

How and why do you establish relationships? How do you know which people to keep and which ones to let go? What is the trick to building a lasting, meaningful relationship?

Defining Success:

"Success is a journey, not a destination." – Arthur Ashe

What is success to you? Do you have your own definition or is it defined by others? Is life all about becoming 'successful'? Are there any real losers in life?

EVENT DESCRIPTIONS

Plenary Speakers: Join our speakers in discussing the Conference topics. Each of these individuals will share their insights on their journey to success. Through listening and asking questions, learn what they did and how it might be able to work for you.

Student Presentations: Listen to your colleagues' stance on the different Conference topics. Explore the issues from different cultural, political, and socioeconomic perspectives before finalizing the design of your own road map to success.

Problem Solving Seminar: Come and play the game of life. This fun, problem-solving activity will guide you through the various scenarios you may face in the course of your life.

Round Table Discussion: Come challenge the different speakers' ideas. Listen as alumni and guests discuss the various Conference topics and identify their beliefs or disbeliefs.

Welcome Reception: Join our colleagues, speakers, and staff in a welcome reception designed to expand your network and help you unwind after a long day of thinking.

Closing Ceremony: Join us as we show our appreciation to our student presenters and special guests at the close of this two-day event.

ORGANIZING COMMITTEE

Language Enrichment Activities Programme (LEAP) Task Force:

Conveners: Jessica Clarkson and Ivan Yung

Members: Martin Lai, Jessie Lam, Dr. Martha Lam, Liza Yew, Dr. Marshall Yin
and Brenda Yuen

Appendix B: Intended Learning Outcomes

Language Centre Activity Facilitators – English Language Buddy Scheme (ELBS) Proposal

Objectives:

The English Language Buddy Scheme (ELBS) aims to encourage the confident and frequent use of English among students of HKUST. This is achieved through activities held by ‘buddies’ for participants on and off campus. The types of activities selected will provide opportunities for participants to make use of and enhance their language and communication skills in relaxing and supportive learning environments and situations.

It is hoped that the ELBS will serve as an incentive for participants to continue in the improvement of their English language outside of the classroom among peers. The ELBS also hopes to act as a ‘bridge’ or a ‘feeder’ to all the other existing activities and programmes organized by the various Language Centre’s teams and support units (e.g. the Co-curricular Team, the HIPPO team and the Self-Access Centre). Participants of the ELBS will be encouraged to make use of the available and rich resources of the Language Centre as much as possible (e.g. the mini-theatre and the learning materials in the SAC) and where appropriate, to enroll in co-curricular courses offered throughout the semesters (e.g. Enhancing English Accuracy course).

Manpower Required:

- 1) Programme Coordinator – HKUST undergraduate students (except exchange and non-local preparatory year students) with good organizational, leadership and communication skills.
- 2) Buddy – HKUST undergraduate students (except exchange and non-local preparatory year students) with very good command of English, communication and interpersonal skills.
- 3) English Language Instructor (Advisor) – to advice, assist and monitor Buddies.
- 4) English Language Instructor (Manager) – to plan, manage and oversee Scheme, advise Programme Coordinators and assist Advisors.

Duration of Scheme:

On-going with activities mainly conducted during fall and spring semesters.

Proposed Schedule for Semester:

Week 3 – Orientation for buddies and participants to form groups and finalize meeting times.

Week 4 to Week 11 – Buddies and participants meet face-to-face to carry out activities.

Week 12 – Debriefing and evaluation session with buddies and participants.

Suggested Hours of Group Meetings:

5 hours per week (determined by each team in terms of length and frequency of each meeting).

Suggested Size of Groups:

- 1) 1 Buddy to mentor 4 to 6 participants in a group.
- 2) 1 Advisor to monitor 2 to 3 groups.

Target Group of Participants:

Year 1 students with low English proficiency (e.g. D or E grade for HKAL English)

Some Proposed Activities for Groups' Consideration:

Regular –

- 1) Movies/TV Documentaries or Series/ News Discussions
- 2) Book/Travel/Trips Sharing
- 3) Debating
- 4) Dramas/Role Plays
- 5) Board Games
- 6) Lunch/Tea/Dinner Gatherings
- 7) Workshops (e.g. different cultures, food)
- 8) Creating Radio Broadcasts
- 9) Writing Articles for Magazines
- 10) Conversation Evenings

One-off –

- 1) Museum/Art Gallery Visits
- 2) Company/Manufacturer/Factory Visits
- 3) Sports or Games Day/ Beach Day/Boat Trip/Hiking
- 4) Singing Karaoke
- 5) Music/Film Festivals
- 6) Pub Crawls
- 7) Joining activities organized by other clubs and societies (e.g. NAUTY, LLC)
- 8) Others (ad-hoc suggestions by teams that meet Manager's approval)

Monitoring of Semestrial Programme:

- 1) Regular 'Activity' logs by buddies.
- 2) Regular 'What I gained' logs by participants.

- 3) Sit-ins of meetings by advisor/programme coordinator/manager.
- 4) Brief final reports by buddies and participants.

Evaluation of Scheme:

- 1) Pre- and post-programme questionnaires on objectives, expectations, etc. for buddies and participants.
- 2) Brief evaluative report by advisor.
- 3) Focus group evaluation.

Expected Outcomes:

By the end of the programme, students should be able to:

1. Communicate effectively in a range of academic and social contexts determined by their groups after consultations and discussions with Scheme's organizers.
2. Collaborate with different people (e.g. instructors and peers) using different skills (e.g. communicative and interpersonal) to achieve objectives.
3. Adapt to and cope with different learning styles, language proficiencies and cultural backgrounds, and operate sensitively in an increasingly globalized environment.
4. Identify own language learning needs in their wider academic and social development and develop appropriate strategies to address those needs.
5. Develop skills other than language (e.g. leadership, time management and organizational) to enable them to function more efficiently academically and socially.

Certification for End of Programme:

- 1) Certificate of Appreciation for buddies.
- 2) Certificate of Participation for participants.

Proposed Budget for Scheme:

- 1) Programme Coordinator and Buddy to be hired on part-time basis (\$48 per hour X 10 hours per week X 10 weeks per semester).
- 2) Incentive activity subsidy for buddies and participants (\$100 per head for the completion of at least 2 off-campus approved activities) to be reimbursed at the end of semestrial programme.

3) Appreciation bonus for the 'best' 3 buddies nominated by participants and Advisors/Programme Coordinator/Manager (a book coupon of \$200 per Buddy X 3).

Prepared by:

18 August 2009

Appendix C: Survey Questionnaire

From: **ELBS Research Team** <lcwpi2011@stu.ust.hk>

Date: Mon, Feb 7, 2011 at 4:27 PM

Subject: former ELBS participant questionnaire

To: *****

Dear former ELBS participant,

On behalf of the Language Center and LEAP, we would like to invite you to complete a short questionnaire discussing your experience with the English Language Buddy Scheme (ELBS).

We are third year university students from the United States who are currently studying abroad and working with LEAP. Your input will be helpful to our project, titled "Application of Peer-Assisted Learning in a University Extra-Curricular Program". As ELBS is approaching its fourth semester, LEAP would like to make some improvements, and they want your opinions!

The questionnaire is primarily concerned with which activities you enjoyed, and which activities helped your English. Participating in our survey will allow you to enter our raffle. If you win, you and a friend will be treated to a free lunch on campus with us. To enter, please enter your email address when asked to at the bottom of the questionnaire. Whether or not you enter the raffle, please complete the questionnaire by **Wednesday at 5 PM**.

The questionnaire can be found by clicking the following link: <https://spreadsheets.google.com/viewform?hl=en&formkey=dEt4VFIUNzQtZVlaWVh1TEUwdUtvZ3c6MQ#gid=0>

If you cannot click the link, please copy and paste it into a new browser window.

Thank you for your time,
ELBS Research Team

Derek Andersen
Tiffany Chau
Austin Noto-Moniz
Yuchen Xu

ELBS Participant Questionnaire

* Required

1) What is your current year of study? *

- First year
- Second year
- Third year
- Post graduate

2) What is your country of origin? *

- Hong Kong
- Mainland China
- Other:

3) Which semesters were you involved in ELBS? *

Select all that apply.

- Fall 2009
- Spring 2010
- Fall 2010

4) How often did you participate in weekly buddy meetings? *

1 2 3 4 5

Infrequently Frequently

5) If you did not attend all weekly meetings, why?

- Too much coursework
- Weak relationship with buddy
- Weak relationship with other participants
- Schedule conflicts
- Personal issues (e.g. family, medical, relationship)
- Lack of interest in events
- Conflict with other extracurricular activities
- Part-time job
- Other:

6) Why did you choose to participate in ELBS?

Select all that apply.

- Interest in a specific activity

7) What types of activities did you participate in?

Select all that apply.

- Board Games
- Movies
- Hiking
- Socializing over food / tea
- Sports
- Workshops
- Sightseeing / Traveling
- Other:

8) Which activities were most enjoyable?

Select up to three.

- Board Games
- Movies
- Hiking
- Socializing over food / tea
- Sports
- Workshops
- Sightseeing / Traveling
- Other:

9) Which of these activities most improved your confidence in English?

Select all that apply.

- Board Games
- Movies
- Hiking
- Socializing over food/tea
- Sports
- Workshops
- Sightseeing / Traveling
- Other:

10) Which ELBS resources most helped your English?

Select all that apply.

- LEAP organized activities
- Weekly group meetings/activities
- Interaction with other participants
- Interaction with buddies/head buddies
- Interaction with activity officers/instructors
- Other:

11) How much do you feel ELBS improved your comfort with English? *

1 2 3 4

Not at all It has helped a lot

12) How much do you feel ELBS improved your English speaking skills? *

1 2 3 4

Not at all It has helped a lot

Raffle

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Appendix D: Program for Analyzing Participant Survey Results

load_data.py

```
import student_ttest
import perform_tests
from perform_tests import close
from os import makedirs
import xlrd
import xlwt

questions = {}
data = []

t_test_questions = [4, 11, 12]
tally_questions = [5, 6, 7, 8, 9, 10]

write_data = True
write_to_screen = False
root_output_folder = "C:/Users/Auzzy/Documents/IQP/C-term/questionnaire/results"
all_output = open("{0}/results.txt".format(root_output_folder), 'w') if write_data else None

class FormGroups():
    """A class containing methods for creating groups out of the data read in from an
    Excel Workbook. To use it, call the method form_groups."""

    #int ->
    list[dict{string:list[dict{int:tuple(string)}}],list[dict{string:list[dict{int:tuple(string)}}]}]
    def form_groups(self, question_num):
        """Orchestrates the creation of the list of pairings of groups."""
        unique_groups = {}
        all_groups = {}

        all_single_groups_keys =
self.__gen_all_single_groups_keys(question_num)
        all_groups_keys = self.__gen_all_groups_keys(all_single_groups_keys)
        unique_groups =
self.__gen_unique_groups(all_groups_keys,question_num)
        all_groups = self.__gen_all_groups(all_groups_keys,unique_groups)
        return self.__pair_groups(unique_groups,all_groups)

    #int -> list[string]
    def __gen_all_single_groups_keys(self, question_num):
        """Generates the keys for each group in the data set."""
```

```

        all_single_groups_keys = list(set([all_groups_key for person in data for
all_groups_key in person[question_num]]))
        all_single_groups_keys.sort()
        return all_single_groups_keys

```

```

#int -> list[tuple(string)]
def __gen_all_groups_keys(self, all_single_groups_keys):
    """Generates all possible pairings of the groups present in the data set"""
    all_groups_keys = []

    for key1 in all_single_groups_keys:
        for key2 in all_single_groups_keys:
            new_key = list(set([key1,key2]))
            new_key.sort()
            new_key = tuple(new_key)
            if new_key not in all_groups_keys:
                all_groups_keys.append(new_key)
    all_groups_keys.append(tuple(all_single_groups_keys))

    return all_groups_keys

```

```

#list[tuple(string)],int -> dict{tuple(string):list[dict{int:tuple(string)}}}
def __gen_unique_groups(self, all_groups_keys, question_num):
    """Uses the list of key pairings to group all people by their answer to the
specified question, thus creating exclusive groups."""
    unique_groups = { }
    for person in data:
        if person[question_num] in unique_groups:
            unique_groups[person[question_num]].append(person)
        else:
            unique_groups[person[question_num]] = [person]

    for all_groups_key in all_groups_keys:
        if all_groups_key not in unique_groups:
            unique_groups[all_groups_key] = []

    return unique_groups

```

```

#list[tuple(string)], dict{tuple(string):list[dict{int:tuple(string)}}} ->
dict{tuple(string):list[dict{int:tuple(string)}}}
def __gen_all_groups(self, all_groups_keys, unique_groups):
    """Uses the list of key pairings and the unique groups to create inclusive
groups. In inclusive groups, each response to the indicated question is used for grouping.
Thus, if a responder gave two answers to the question, they will be placed into all groups
in which either response appears."""
    all_groups = { }

```

```

        for unique_group in all_groups_keys:
            keys = self.__find_keys(unique_group)
            groups_keys = self.__find_groups_keys(keys,unique_groups)
            all_groups[unique_group] =
self.__find_groups(groups_keys,unique_groups)

        return all_groups

#string -> tuple(string)
def __find_keys(self, search_key):
    """Takes a whole key, and generates all possible combinations its
elements"""
    found_keys = []
    for num in range(0,len(search_key)):
        new_key = search_key[:num]+search_key[num+1:]
        if len(new_key)!=0:
            new_keys = self.__find_keys(new_key)
            found_keys.extend(new_keys)
    else:
        found_keys.append(search_key)
    return list(set(found_keys))

#list[string],dict{ tuple(string):list[dict{int:tuple(string)}} -> list[string]
def __find_groups_keys(self, keys, unique_groups):
    """Generates a list of all keys in unique_groups that contain the given
keys"""
    new_keys = keys[:]
    for key in keys:
        for key_piece in key:
            for unique_key in unique_groups:
                if key_piece in unique_key and unique_key not in
new_keys:
                    new_keys.append(unique_key)
    return new_keys

#list[string],dict{ tuple(string):list[dict{int:tuple(string)}} ->
list[list[dict{int:tuple(string)}}]
def __find_groups(self, groups_keys, unique_groups):
    """Creates a list of groups from the keys given."""
    groups = []
    for groups_key in groups_keys:
        groups.extend(unique_groups[groups_key])
    return groups

```

```

        #dict{tuple(string):list[dict{int:tuple(string)}}},dict{tuple(string):list[dict{int:tuple
list(dict{string:list[dict{int:tuple(string)}}]},list[dict{string:list[dict{int:tuple(string)}}]}
    def __pair_groups(self, unique_groups, all_groups):
        """Create a list of pairs of keys with the associated groups attached for easy
comparison later."""
        unique_groups = self.__pair_unique_groups(unique_groups)
        all_groups = self.__pair_all_groups(all_groups)
        return unique_groups,all_groups

    #dict{tuple(string):list[dict{int:tuple(string)}}} ->
list[dict{string:list[dict{int:tuple(string)}}]}
    def __pair_unique_groups(self, groups):
        """Creates the list of pairs of exclusive groups."""
        group_pairs = []
        groups_keys = groups.keys()

        for groups_num in range(0,len(groups)):
            pivot_group_name = groups_keys[groups_num]
            pivot_group = groups[pivot_group_name]
            for groups_key in groups_keys[groups_num+1:]:
                group_pair =
{pivot_group_name:pivot_group,groups_key:groups[groups_key]}
                group_pairs.append(group_pair)

        return group_pairs

    #dict{tuple(string):list[dict{int:tuple(string)}}} ->
list[dict{string:list[dict{int:tuple(string)}}]}
    def __pair_all_groups(self, groups):
        """Creates the list of pairs of inclusive groups."""
        group_pairs = []
        groups_keys = groups.keys()

        for groups_num in range(0,len(groups)):
            pivot_group_name = groups_keys[groups_num]
            pivot_group = groups[pivot_group_name]
            for groups_key in groups_keys[groups_num+1:]:
                group_pair =
{pivot_group_name:pivot_group,groups_key:groups[groups_key]}
                group_pairs.append(group_pair)

        return group_pairs

class LoadData():

```

"""A class that loads all the data in an Excel file containing responses from a Google Forms questionnaire."""

```
#string,string -> None
def __init__(self, file_name, sheet_name):
    self.sheet = self.__open_data_sheet(file_name,sheet_name)
    self.__init_data()

#None -> xlrd.sheet.Sheet
def __open_data_sheet(self, file_name, sheet_name):
    """Loads the specified sheet of the specified Excel file."""
    excelFile = xlrd.open_workbook(file_name)
    return excelFile.sheet_by_name(sheet_name)

#None -> None
def __init_data(self):
    """Initiates a dictionary for data storage."""
    for row_num in range(1,self.sheet.nrows):
        data.append({})

#None -> None
def load_data(self):
    """Orchestrates the loading of data into th appropriate dictionary."""
    self.__parse_data()
    self.__remove_question(1)

#None -> None
def __parse_data(self):
    """Extracts data from the open spreadsheet and stores it in a dictionary."""
    for col_num in range(1,self.sheet.ncols):
        col_values = self.sheet.col_values(col_num)

        try:
            question_num,question =
self.__parse_question(col_values[0])
        except ValueError:
            pass
        else:
            questions[question_num] = question
            for row_num in range(1,self.sheet.nrows):
                data[row_num-1][question_num] =
self.__parse_col_value(str(col_values[row_num]))

#string -> int,string
def __parse_question(self, question_value):
```

```

        """Given a question from the spreadsheet, separates the question number
ad the question text."""
        if ")" not in question_value:
            raise ValueError("This question should be skipped, as it is not
numbered.")
        else:
            barrier = question_value.find("(")
            number = int(question_value[:barrier])
            question = question_value[barrier+1:].strip()
            return number,question

#string -> tuple(string)
def __parse_col_value(self, col_value):
    """Given a response string from the spreadsheet, separates each response
given (if the responder gave multiple responses) and stores all responses in a tuple."""
    if type(col_value) is not str:
        return (col_value,)
    else:
        if ',' not in col_value:
            return (col_value,)
        else:
            col_values = []
            while ',' in col_value:
                val = col_value[:col_value.find(',')].strip()
                col_values.append(val)
                col_value = col_value[col_value.find(',')+1:]
            col_values.append(col_value.strip())
            col_values.sort()
            return tuple(col_values)

#int -> None
def __remove_question(self, question_num):
    """Allows you to ignore a question by deleting it."""
    del questions[question_num]
    for person in data:
        del person[question_num]

if __name__=="__main__":
    LoadData("ELBS Participant Questionnaire.xls", "Sheet1").load_data()

    unique_ELBS_groups,all_ELBS_groups = FormGroups().form_groups(3)
    unique_country_groups,all_country_groups = FormGroups().form_groups(2)

    perform_tests.setup(questions, t_test_questions, tally_questions, all_output)

    perform_tests.write_all("ELBS")

```

```

    perform_tests.write_all("UNIQUE")
    perform_tests.perform_tests(unique_ELBS_groups,"{0}/{1}/generated".format(ro
ot_output_folder,"ELBS/unique"),write_to_screen,write_data)
    perform_tests.write_all("ALL")
    perform_tests.perform_tests(all_ELBS_groups,"{0}/{1}/generated".format(root_
output_folder,"ELBS/all"),write_to_screen,write_data)

    perform_tests.write_all("COUNTRY")
    perform_tests.write_all("UNIQUE")
    perform_tests.perform_tests(unique_country_groups,"{0}/{1}/generated".format(
root_output_folder,"country/unique"),write_to_screen,write_data)
    perform_tests.write_all("ALL")
    perform_tests.perform_tests(all_country_groups,"{0}/{1}/generated".format(root
_output_folder,"country/all"),write_to_screen,write_data)

    close(all_output)

```

perform_tests.py

```

import student_ttest
from os import makedirs
import xlwt

questions = { }
t_test_questions = []
tally_questions = []
all_output = None
write_to_screen = bool()
write_data = bool()
setup = False

#file[,string,bool] -> None
def write(output_file, line="", newline=True):
    """Writes the specified line to stdout, the provided output file, and the global
output file."""
    if newline:
        line += "\n"
    write_all(line,False)
    if write_data:
        output_file.write(line)

#[string,bool] -> None
def write_all(line="", newline=True):
    """Writes the specified line to stdout and the global output file."""
    if newline:
        line += "\n"
    if write_to_screen:

```

```

        print line,
    if write_data:
        all_output.write(line)

#file -> None
def close(afile):
    """Attempts to close a file. If any error occurs during the closing, the file is
    assumed to be either closed or never initialized as a file, and so the error is silently
    ignored."""
    try:
        afile.close()
    except KeyboardInterrupt:
        raise
    except:
        pass

#string -> None
def make_folder(folder):
    """Creates a folder if it does not already exist. If it does, silently ignores the error.
    All other errors are uncaught."""
    try:
        makedirs(folder)
    except OSError,mess:
        if mess[0]==183:
            pass

#list[dict{int:tuple(string)}],int -> list[tuple(string)]
def _get_values(group, question_num):
    """Extracts the answer to the specified question from each person in the given
    group."""
    return [person[question_num] for person in group]

#list[dict{string:list[dict{int:tuple(string)}}],list[int] ->
dict{int:dict{tuple(string):list[tuple(string)]}}
def _get_all_values(groups, all_questions):
    """Compiles a dictionary of the responses from each member of the group,
    organized by question number."""
    values = {}

    for question_num in all_questions:
        values[question_num] = {}
        all_groups = {}
        for pair in groups:
            for key in pair:
                if key not in all_groups:
                    all_groups[key] = pair[key]

```

```

        for all_groups_key in all_groups:
            values[question_num][all_groups_key] =
_get_values(all_groups[all_groups_key],question_num)
        return values

#tuple(string) -> string
def _get_group_name(group_tup):
    """Takes the group key, which is a tuple, and converts it to a string."""
    group_name = ""
    for el in group_tup:
        group_name += "{0}, ".format(el)
    return group_name[:-2].strip()

#dict{string:int},string,string -> None
def _write_graph(data, group_name, path):
    """Outputs all the data in an Excel file with the same name as the ggroup and
question the data is for."""
    keys = data.keys()
    keys.sort()
    group_name = group_name.replace(' ',")

    new_workbook = xlwt.Workbook()
    new_sheet = new_workbook.add_sheet(group_name)
    new_sheet.write(1,0,group_name)
    for col in range(1,len(data)):
        key = keys[col-1]
        new_sheet.write(0,col,key)
        new_sheet.write(1,col,data[key])

    new_workbook.save(path)

class PerformTTTests():
    """A class orchestrating the performance of a Student's t test on a data set and
outputting the results."""

    #list[dict{string:list[dict{int:tuple(string)}}],string -> None
    def perform_t_tests(self, groups, output_folder):
        """Performs a Student's t test on each pair of data sets included in the
given groups list and places all output in the specified folder."""
        values = _get_all_values(groups,t_test_questions)
        all_data = {}

        for pair in groups:
            keys = pair.keys()
            all_data =
self.__compare_t_test_questions(keys,values,t_test_questions,all_data,output_folder)

```

```

write_all()

for question_num in all_data:
    for data in all_data[question_num]:
        _write_graph(all_data[question_num][data],data,"{0}/{1}
Q{2}.xls".format(output_folder,data,question_num))

#list[tuple(string)],dict{int:dict{tuple(string):list[tuple(string)]}},list[int],dict{int:
dict{string:dict{string:int}}},string -> dict{int:dict{string:int}}
def __compare_t_test_questions(self, keys, values, t_test_questions, all_data,
output_folder):
    """Performs a Student's t test on the given pair for each question marked
as one that can be analyzed as such."""
    group_names = _get_group_name(keys[0]),_get_group_name(keys[1])
    group_heading = "{0} vs. {1}".format(group_names[0],group_names[1])
    output_file = open("{0}/{1}.txt".format(output_folder,group_heading),'w')
if write_data else None
    write(output_file,group_heading)

    for question_num in t_test_questions:
        write(output_file,"QUESTION {0}:
{1}".format(question_num,questions[question_num]))
        data_set = { }
        for group_name,key in zip(group_names,keys):
            data_set[group_name] = [float(value[0]) for value in
values[question_num][key]]

        self.__compare_t_test_responses(data_set,group_names,output_file)
        all_data =
self.__update_all_t_test_data(data_set,group_names,question_num,all_data)
        write(output_file)

    close(output_file)

    return all_data

#dict{string:list[float]},list[string],file -> None
def __compare_t_test_responses(self, data_set, group_names, output_file):
    """Accounts for a lack of data that would cause the Student's t-test to
misbehave."""
    if len(data_set[group_names[0]])==0 or
len(data_set[group_names[1]])==0:
        self.__no_data(data_set,group_names,output_file)
    elif len(data_set[group_names[0]])==1 or
len(data_set[group_names[1]])==1:
        self.__lack_of_data(data_set, group_names, output_file)

```

```

        else:
            self.__compare_data(data_set,group_names,output_file)

#dict{string:list[float]},list[string],file -> None
def __no_data(self, data_set, group_names, output_file):
    """Properly handles the data when one data set is empty and outputs the
result."""
    write(output_file,"Cannot be compared due to a lack of data.")
    write(output_file,"{0}:
{1}".format(group_names[0],data_set[group_names[0]]))
    write(output_file,"{0}:
{1}".format(group_names[1],data_set[group_names[1]]))

#dict{string:list[float]},list[string],file -> None
def __lack_of_data(self, data_set, group_names, output_file):
    """Properly handles the data when one data set contains a single data point
and outputs the result."""
    write(output_file,"Cannot determine significance due to a lack of data.")

    means = {}
    for group_name in data_set:
        means[group_name] =
round(student_ttest.mean(data_set[group_name]),2)
        write(output_file,"{0}: {1}
({2})".format(group_name,means[group_name],data_set[group_name]))

#dict{string:list[float]},list[string],file -> None
def __compare_data(self, data_set, group_names, output_file):
    """Actually determines whether or not the differences in the data are
significant and outputs the result."""
    data_sets_equal = student_ttest.data_sets_equal(data_set.values())
    means = {}
    for group_name in data_set:
        means[group_name] =
round(student_ttest.mean(data_set[group_name]),2)

    write(output_file,"The difference ",False)
    if data_sets_equal:
        write(output_file,"IS significant.")
    else:
        write(output_file,"is NOT significant.")

    for group_name in data_set:
        write(output_file,"{0}: {1}
({2})".format(group_name,means[group_name],data_set[group_name]))

```

```

    #dict{string:list[float]},list[string],int,dict{int:dict{string:dict{string:int}} } ->
dict{int:dict{string:dict{string:int}} }
    def __update_all_t_test_data(self, data_set, group_names, question_num,
all_data):
        """Updates the collection of all data to be written to Excel files."""
        if question_num not in all_data:
            all_data[question_num] = {}
        if group_names[0] not in all_data[question_num]:
            data_set_tuples = [(data,) for data in data_set[group_names[0]]]
            all_data[question_num][group_names[0]] =
PerformTallies().tally_responses(data_set_tuples)
        if group_names[1] not in all_data[question_num]:
            data_set_tuples = [(data,) for data in data_set[group_names[1]]]
            all_data[question_num][group_names[1]] =
PerformTallies().tally_responses(data_set_tuples)

        return all_data

class PerformTallies():
    """A class orchestrating the tallying of responses from the data set and outputting
the results."""
    #list[dict{string:list[dict{int:tuple(string)}}],string -> None
    def perform_tallies(self, groups, output_folder):
        """Tallies all responses to each question for each pair of groups and
compares them."""
        values = __get_all_values(groups,tally_questions)
        tally = self.__aggregate_tallies(groups,values,tally_questions)
        all_data = {}

        for pair in groups:
            all_data =
self.__compare_tally_questions(pair,tally,tally_questions,all_data,output_folder)
            write_all()
        write_all()

        for question_num in all_data:
            for data in all_data[question_num]:
                __write_graph(all_data[question_num][data],data,"{0}/{1}
Q{2}.xls".format(output_folder,data,question_num))

    #list[dict{string:list[dict{int:tuple(string)}}],dict{int:dict{tuple(string):list[tuple(
string)]}},list[int] -> dict{int:dict{tuple(string):dict{string:int}} }
    def __aggregate_tallies(self, groups, values, tally_questions):
        """Actually goes through the data set, performs all the tallies, and stores
them by question number and group."""
        tally = {}

```

```

        for question_num in tally_questions:
            tally[question_num] = {}
            for pair in groups:
                for key in pair:
                    data_set = [value for value in
values[question_num][key]]
                    if key not in tally[question_num]:
                        tally[question_num][key] =
self.tally_responses(data_set)
            return tally

#list[tuple(string)] -> dict{string:int}
def tally_responses(self, question_data):
    """Tallies the responses given by one group to one question."""
    responses = {}
    for response_set in question_data:
        for response in response_set:
            if response=="":
                if "did not respond" not in responses:
                    responses["did not respond"] = 0
                responses["did not respond"] += 1
            else:
                if response not in responses:
                    responses[response] = 0
                responses[response] += 1

    return responses

#dict{string:list[dict{int:tuple(string)}}],dict{int:dict{tuple(string):dict{string:int}
}},list[int],dict{int:dict{string:dict{string:int}}},string -> None
def __compare_tally_questions(self, pair, tally, tally_questions, all_data,
output_folder):
    """Orchestrates the question by question comparison of each pair of
groups."""
    keys = pair.keys()
    group_names = _get_group_name(keys[0]),_get_group_name(keys[1])
    group_heading = "{0} vs. {1}".format(group_names[0],group_names[1])
    output_file = open("{0}/{1}.txt".format(output_folder,group_heading),'w')
if write_data else None
    write(output_file,group_heading)

    for question_num in tally_questions:
        write(output_file,"QUESTION {0}:
{1}".format(question_num,questions[question_num]))
        all_responses = []
        for key in pair:

```

```

        all_responses.extend(tally[question_num][key].keys())
        all_responses = list(set(all_responses))
        all_responses.sort()
        data_set =
[tally[question_num][keys[0]],tally[question_num][keys[1]]]
        data_set =
self.__compare_tally_responses(pair,group_names,data_set,all_responses,output_file)
        all_data =
self.__update_all_tally_data(data_set,question_num,group_names,all_data)
        write(output_file)

        close(output_file)

        return all_data

#dict{string:list[dict{int:tuple(string)}]},list[string],list[dict{string:int}],list[string
],file -> list[dict{string:int}]
def __compare_tally_responses(self, pair, group_names, data_set, all_responses,
output_file):
    """Orchestrates the response by response comparison of each pair of
groups."""
    keys = pair.keys()

    for response in all_responses:
        write(output_file,response)
        data_set = self.__update_tally_data_set(data_set,response)

        if len(data_set[0])==0 or len(data_set[1])==0:
            write(output_file,"\"{0}\" and \"{1}\" cannot be compared
due to a lack of data.".format(*group_names))
        else:
            for group_num in range(0,len(group_names)):
                responses = data_set[group_num][response]
                percent =
self.__percentage(responses,len(_get_values(pair[keys[group_num]]),4))
                write(output_file,"{0}: {1 }
({2}%)".format(group_names[group_num],responses,percent))
            return data_set

#list[dict{string:int}],string ->list[dict{string:int}]
def __update_tally_data_set(self, data_set, response):
    """Ensures that each data set contains tallies for the same responses. If a
response is not present in a data set, it is added with a total tally of 0."""
    if response not in data_set[0]:
        data_set[0][response] = 0
    if response not in data_set[1]:

```

```

        data_set[1][response] = 0
    return data_set

#list[dict{string:int}],int,list[string],
def __update_all_tally_data(self, data_set, question_num, group_names,
all_data):
    """Updates the collection of all data to be written to Excel files."""
    if question_num not in all_data:
        all_data[question_num] = {}
    if group_names[0] not in all_data[question_num]:
        all_data[question_num][group_names[0]] = data_set[0]
    if group_names[1] not in all_data[question_num]:
        all_data[question_num][group_names[1]] = data_set[1]
    return all_data

#int,int -> float
def __percentage(self, value, n):
    """Calculates the ratio of the value to n as a percentage."""
    value = float(value)
    if value==0:
        return 0
    else:
        return round(value/n*100,1)

#list[dict{string:list[dict{int:tuple(string)}}]],string[,boolean,boolean] -> None
def perform_tests(groups, output_folder, write_to_screen_arg=True,
write_data_arg=True):
    """Orchestrates the performance of both types of tests on all data."""
    if setup:
        global write_to_screen,write_data
        write_to_screen,write_data = write_to_screen_arg,write_data_arg

        t_test_folder = "{0}/{1}".format(output_folder,"t test")
        make_folder(t_test_folder)
        PerformTTests().perform_t_tests(groups,t_test_folder)
        tally_folder = "{0}/{1}".format(output_folder,"tally")
        make_folder(tally_folder)
        PerformTallies().perform_tallies(groups,tally_folder)
    else:
        print "This module has not yet been set up. Please "

#dict{int:string},list[int],list[int],file
def setup(questions_arg, t_test_questions_arg, tally_questions_arg, all_output_arg):
    """A method that should be run before using this module. It sets some necessary
global variables."""

```

```

    global questions,t_test_questions,tally_questions,all_output,setup
    questions,t_test_questions,tally_questions,all_output =
questions_arg,t_test_questions_arg,tally_questions_arg,all_output_arg
    setup = True

```

student_ttest.py

```

import xlrd
#from statlib.stats import lttest_ind

```

```

class TTest():

```

```

    """A class containing methods for performing two common Student's t test
operations: calculating the t value, and checking if the null hypothesis is confirmed or
rejected.

```

Additionally, a method for calculating the mean of a data set is exposed. Simply give the method mean a list of floats and the length of the data set.

To calculate the t value of two data sets, call the method students_t_test, which accepts two lists of floats as the data set.

To determine if the null hypothesis is confirmed or rejected, two methods are provided: one_tailed_reject_null and two_tailed_reject_null. Both methods take the t value as a parameter and return a boolean indicating if the null hypothesis was rejected or not. These methods will return true if the t value is greater than the t value for the specified p value. If no p value is specified, the standard value of 0.05 is used."""

```

#dict{int:dict{int:dict{int:float}}} -> None
def __init__(self, t_table):
    self.t_table = t_table
    self.p_vals = {}
    self.p_vals[1] = self.t_table[1][1].keys()
    self.p_vals[1].sort()
    self.p_vals[1].reverse()
    self.p_vals[2] = self.t_table[2][1].keys()
    self.p_vals[2].sort()
    self.p_vals[2].reverse()

#list[float],int -> float
def mean(self, data, n):
    """Exposes a simple calculation of the mean of the given data set."""
    return self.__sample_mean(data,float(n))

#list[float],list[float -> float
def student_t_test(self, data1, data2):
    """Performs a Student's t-test on the 2 data sets"""
    n1 = float(len(data1))

```

```

n2 = float(len(data2))
xbar1 = self.__sample_mean(data1,n1)
xbar2 = self.__sample_mean(data2,n2)
s1 = self.__sample_variance(data1,xbar1,n1)
s2 = self.__sample_variance(data2,xbar2,n2)
self.dof = self.__degrees_of_freedom(n1,n2)
sp = self.__sample_pooled_variance(s1,n1,s2,n2,self.dof)
t = self.__t_value(xbar1,n1,xbar2,n2,sp)
return t

#list[float],int -> float
def __sample_mean(self, data, n):
    """Calculates the sample mean of the data set."""
    return sum(data)/n

#list[float],float,int -> float
def __sample_variance(self, data, xbar, n):
    """Calculates the sample variance of the data set."""
    return sum([(point-xbar)**2.0 for point in data])/(n-1)

#int,int -> int
def __degrees_of_freedom(self, n1, n2):
    """Calculates the degrees of freedom between two data sets with the given
lengths."""
    return n1+n2-2.0

#float,int,float,int,int -> float
def __sample_pooled_variance(self, s1, n1, s2, n2, dof):
    """Calculates the sample pooled variance."""
    std1 = (n1-1.0)*s1
    std2 = (n2-1.0)*s2
    return (std1+std2)/dof

#float,int,float,int,float -> float
def __t_value(self, xbar1, n1, xbar2, n2, sp):
    """Calculates the t-value for the given data sets."""
    stderr = (sp*(1.0/n1+1.0/n2))**.5
    return (xbar1-xbar2)/stderr

#float[,float] -> bool
def one_tailed_reject_null(self, t, p=.05):
    """Determines whether the given t-value rejects or confirms the null
hypothesis, assuming a 1-tailed test and a p-value of 0.05."""
    return self.__reject_null(t,1,p)

#float[,float] -> bool

```

```

def two_tailed_reject_null(self, t, p=.05):
    """Determines whether the given t-value rejects or confirms the null
hypothesis, assuming a 2-tailed test and a p-value of 0.05."""
    return self.__reject_null(t,2,p)

#float,int,float -> bool
def __reject_null(self, t, tails, p):
    """Determines if the null hypothesis is rejected by comparing the given t-
value to the t-value at the given p-value."""
    dof = self.dof if self.dof<=30 else float("inf")

    """
import calc_p
try:
    print calc_p.main(t,dof)
except ValueError,mess:
    print mess
    """

    try:
        t_val = self.t_table[tails][dof][p]
    except KeyError:
        raise ValueError("Invalid value for p: {0}".format(p))
    return t>t_val

```

```

class LoadTTable():
    """A class to load in t values and p values from an Excel Workbook."""

    t_table = {}

    #string -> None
    def __init__(self, file_name, sheet_name):
        self.sheet = self.__open_t_table_sheet(file_name,sheet_name)
        self.__init_table()

    #string -> xlrd.sheet.Sheet
    def __open_t_table_sheet(self, file_name, sheet_name):
        """Loads the spreadsheet containing the t-table"""
        excelFile = xlrd.open_workbook(file_name)
        return excelFile.sheet_by_name(sheet_name)

    #None -> None
    def __init_table(self):
        """Initializes some variables to make their assignment easier later on."""
        self.t_table[1] = {}
        self.t_table[2] = {}

```

```

        for row in range(2,self.sheet.nrows-1):
            self.t_table[1][row-1] = {}
            self.t_table[2][row-1] = {}
        self.t_table[1][float("inf")] = {}
        self.t_table[2][float("inf")] = {}

#None -> dict{int:dict{int:dict{int:float}}}
def load_t_table(self):
    """Loads the t-table into a dictionary for easy refernce. Assumes it is
given a 1-tailed value table, and creates both a 1-tailed and 2-tailed table accordingly."""
    p_vals = {}
    p_vals[1] = self.sheet.row_values(0)
    p_vals[2] = self.sheet.row_values(1)

    for row_num in range(2,self.sheet.nrows-1):
        row_values = self.sheet.row_values(row_num)

        for col_num in range(0,len(row_values)):
            row_value = row_values[col_num]
            self.t_table[1][row_num-1][p_vals[1][col_num]] =
row_value
            self.t_table[2][row_num-1][p_vals[2][col_num]] =
row_value

        row_values = self.sheet.row_values(self.sheet.nrows-1)

        for col_num in range(0,len(row_values)):
            row_name = float("inf")
            row_value = row_values[col_num]
            self.t_table[1][row_name][p_vals[1][col_num]] = row_value
            self.t_table[2][row_name][p_vals[2][col_num]] = row_value

    return self.t_table

t_table = LoadTTable("ttable.xls","t table").load_t_table()
t_test = TTest(t_table)

#list[float] -> float
def mean(data):
    """Calculates the mean of a data set."""
    if len(data)==0:
        return "unknown"
    else:
        return t_test.mean(data,len(data))

#list[float] -> bool

```

```
def data_sets_equal(data):  
    """Returns whether or not any difference in the means of 2 data sets are  
    significant by the standard definition of significant ( $p < 0.05$ )."""  
    t = t_test.student_t_test(data[0], data[1])  
    return not t_test.two_tailed_reject_null(t)
```

Appendix E: Interview Protocol for Activity Officers and Instructors

Goal: To summarize ELBS development in the past three semesters and to gain an understanding of the potential benefits of the program.

Interviewees: *Two LEAP Activity Officers, three Instructors & one LEAP Student Helper (six interviews).*

I. Introduction Protocol

1. Greet the interviewee.
2. *Team Member 1:* Begin with introduction to ELBS project.
3. *Team Member 2:* Discuss purpose/goal of interview (how is this relevant for our project?); ask them for consent to publish their input.

II. General Interview Questions

(Interview questions will be posed by *Team Member 1*, and notes are to be taken by *Team Member 2*).

1. Introduction Questions:
 - a. How long have you been involved with education? HKUST? LEAP?
 - b. What roles have you played in the past and/or currently in LEAP and/or ELBS?
2. Core Questions:
 - a. What is your opinion on the role that extracurricular activities play in supplementing English instruction?
 - Do you find that extracurricular activities help HKUST students with their English?
 - Is there any particular activities that they seem most interested in?
 - b. What's your opinion about the role of social interactions in reinforcing a language?
 - Do you find social interactions helpful to HKUST students? If so, in what way are they beneficial?
 - c. How well do you think LEAP has reached its goal to help students improve their English? How about their confidence in English use?
 - Could you rate this on a scale from one to five (one being not at all, and five being exceeding expectations)? Please explain your decision.
 - On which English skill(s) do you think LEAP has the largest positive impact (speaking, listening, writing or reading)? What about generic skills such as communication skills?
 - d. What do you think of the current and past hierarchy of the ELBS structure in past initiatives? Which ones worked? Which didn't?

Why or why not?

III. Specific Interview Questions

(Instructor 1)

1. What are the LEAP/ELBS intended learning outcomes?
2. What is the current structure of ELBS and how has it changed?
3. Why have certain changes been implemented in ELBS?

(Other Instructors & Activity Officers)

1. What are your responsibilities in ELBS? Would you like to see that changed, if so how?

(Student Helper)

1. Why did you decide to be a participant after your experiences as a Buddy?
2. What were the differences between the two roles?
3. What have you notice about the progress of ELBS?

IV. Closure Protocol

1. Ask the interviewees if they have any additional information, comments or questions.
2. Thank the interviewees for their time.

Appendix F: Buddy Focus Group and Interview Protocol

ELBS Buddy Focus Group Protocol

Goal: To gain further understanding about the Buddy perspectives on the ELBS program.

Setting: 2611A conference room with refreshments available

Script:

- 1) Introduce ourselves and welcome the student subjects as they enter the room. Offer them refreshments to make them comfortable. (Refreshments will include tea and snacks)
- 2) Once all of the participants arrive, the focus group moderator will thank everyone for participating in the focus group and contributing to our project.
- 3) Focus group moderator will introduce the purpose of the focus group, how the focus group will be run, and explain that the participants have the right to leave the session at any time and distribute consent forms.
- 4) Focus Group Implementation:
 - a) **Opening Phase**
 - i) Go around the room and have everyone introduce themselves (Name, Year of Graduation, Major, and their favorite hobby/activity)
 - ii) Introduce the ELBS Focus Group purpose (Why we are conducting this focus group, Why we are at HKUST, Why their feedback is important and vital to us)
 - b) **Question Phase** (Make sure each student has spoken up, if not try and ask the student for their opinion on a particular question)
 - i) How long have you been a Buddy in ELBS? Have you ever been a participant in ELBS?
 - ii) What types of activities have you organized?
 - iii) Which activities seemed most engaging and least engaging for your participants?
 - iv) If you could redo your experience as a Buddy, what would you do differently? What changes would you make in the structure?
 - v) Would you recommend your friends to be buddies or participants? Why?
 - vi) Which English or generic skills do you think participation in ELBS reinforces? (writing, listening, speaking, reading)
 - c) **Closing Phase**
 - i) Ask the students if they have any closing comments, questions, or opinions they didn't have the chance to voice yet.
 - ii) Make closing comments, reviewing what was said during the focus groups.
 - iii) Thank the students for their time, and encourage them to grab refreshments on the way out.

Interview Protocol for Buddies

Goal: To gain further understanding about the Buddy perspectives on the ELBS program.

Interviewees: Two LEAP Buddies.

1) Introduction Protocol

- a) Greet the interviewee and offer them refreshments.
- b) *Team Member 1:* Begin with introduction to ELBS project.
- c) *Team Member 2:* Discuss purpose/goal of interview (how is this relevant for our project?); ask them for consent to publish their input.

2) General Interview Questions

(Interview questions will be posed by *Team Member 1*, and notes are to be taken by *Team Member 2*)

- a) Introduction/Icebreaker Question:
 - i) What is your current year of study, major, and why are you here?
- b) Core Questions:
 - i) How long have you been a Buddy in ELBS? Have you ever been a participant in ELBS?
 - ii) What types of activities have you organized?
 - iii) Which activities seemed most engaging and least engaging for your participants?
 - iv) If you could redo your experience as a Buddy, what would you do differently? What changes would you make in the structure?
 - v) Would you recommend your friends to be Buddies or participants? Why or why not?
 - vi) Which English skills or generic skills do you think participation in ELBS reinforces?

3) Closing Phase

- a) Ask the interviewee if they have any closing comments, questions, or additional opinions?
- b) Thank the interviewee for their time, and encourage them to grab refreshments on the way out!

Appendix G: Pre-event and Post-event Questionnaires



PRE-EVENT QUESTIONNAIRE FALL 2009

Student ID: _____

How do you rate your current English language skills? *(Please circle the appropriate answer.)*

Very Low Low Intermediate High Very high

Please indicate your level of agreement with the statements below.

1 = Strongly Disagree 2 = Disagree 3 = Partly Agree
4 = Agree 5 = Strongly Agree

Item	Circle your response				
	1	2	3	4	5
1 I can understand a wide variety of English accents.					
2 I am able to use English to express personal feelings and emotions.					
3 I feel confident speaking English in public.					
4 I am aware of my intonation when I speak English.					
5 I can sustain a conversation in English by using appropriate strategies, such as taking turns, giving feedback, and asking for clarification.					
6 I enjoy socialising in English.					
7 I can use appropriate communicative strategies, such as asking for repetition, and checking understanding.					
8 I am not afraid of making mistakes in English.					
9 I enjoy watching English programmes.					
10 I am aware of the language learning activities and resources available at the Language Center.					
11 I can express my personal point of view and comment on a variety of topics.					
12 I am an active and effective team member when engaging in group language activities.					
13 I am aware of my strengths and weaknesses as a user of English.					
14 I feel confident conversing with native English speakers.					

15	I can always catch intended meanings, feelings and attitude in conversations.	1	2	3	4	5
16	My English vocabulary is adequate for participating in conversations.	1	2	3	4	5
17	My English pronunciation is adequate for participating in conversations.	1	2	3	4	5
18	My English grammar is adequate for participating in conversations.	1	2	3	4	5
19	I can initiate and participate in casual conversations with people in English.	1	2	3	4	5
20	I get used to speaking English to my peers.	1	2	3	4	5
21	I have clear goals about my future language learning.	1	2	3	4	5
22	I make use of the language learning facilities and opportunities offered by the Language Center.	1	2	3	4	5
23	I can understand and respond to complex spoken instructions.	1	2	3	4	5
24	I can use English in a creative way when I lack the appropriate vocabulary.	1	2	3	4	5
25	I know where to seek help when I have a problem with English.	1	2	3	4	5
26	I am highly motivated to become a competent user of English.	1	2	3	4	5

Thank you for completing the questionnaire

POST-EVENT QUESTIONNAIRE
Fall 2009

Student ID: _____

How do you rate your current English language skills? *(Please circle the appropriate answer.)*

Very Low Low Intermediate High Very high

Please indicate your level of agreement with the statements below.

1 = Strongly Disagree 2 = Disagree 3 = Partly Agree
 4 = Agree 5 = Strongly Agree

Item		Circle your response				
		1	2	3	4	5
1	I can understand a wide variety of English accents.					
2	I am able to use English to express personal feelings and emotions.					
3	I feel confident speaking English in public.					
4	I am aware of my intonation when I speak English.					
5	I can sustain a conversation in English by using appropriate strategies, such as taking turns, giving feedback, and asking for clarification.					
6	I enjoy socialising in English.					
7	I can use appropriate communicative strategies, such as asking for repetition, and checking understanding.					
8	I am not afraid of making mistakes in English.					
9	I enjoy watching English programmes.					
10	I am aware of the language learning activities and resources available at the Language Center.					
11	I can express my personal point of view and comment on a variety of topics.					
12	I am an active and effective team member when engaging in group language activities.					
13	I am aware of my strengths and weaknesses as a user of English.					
14	I feel confident conversing with native English speakers.					
15	I can always catch intended meanings, feelings and attitude in conversations.					
16	My English vocabulary is adequate for participating in					

	conversations.					
17	My English pronunciation is adequate for participating in conversations.	1	2	3	4	5
18	My English grammar is adequate for participating in conversations.	1	2	3	4	5
19	I can initiate and participate in casual conversations with people in English.	1	2	3	4	5
20	I get used to speaking English to my peers.	1	2	3	4	5
21	I have clear goals about my future language learning.	1	2	3	4	5
22	I make use of the language learning facilities and opportunities offered by the Language Center.	1	2	3	4	5
23	I can understand and respond to complex spoken instructions.	1	2	3	4	5
24	I can use English in a creative way when I lack the appropriate vocabulary.	1	2	3	4	5
25	I know where to seek help when I have a problem with English.	1	2	3	4	5
26	I am highly motivated to become a competent user of English.	1	2	3	4	5

1. Do you enjoy the activities in the ELBS Programme? Why or why not?

2. What do you enjoy most about this Programme?

3. What skills and knowledge have you learnt in this Programme?

4. What changes would you like us to make to this Programme?

5. Would you like to continue as a participant of the Programme in the Spring Semester? Why/Why not?

6. Would you recommend this activity to your friends? Why/ Why not?

Thank you for completing the questionnaire.

PRE-EVENT QUESTIONNAIRE
Spring 2010

Student ID: _____

How do you rate your current English proficiency level? (Circle the appropriate answer.)

	Very low ----- Very high					
Overall English	1	2	3	4	5	6
Speaking	1	2	3	4	5	6
Listening	1	2	3	4	5	6

Please indicate your level of agreement with the statements below.

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Item	Circle your response				
1 I can understand a wide variety of English accents.	1	2	3	4	5
2 I am able to use English to express personal feelings and emotions.	1	2	3	4	5
3 I feel confident speaking English in public.	1	2	3	4	5
4 I am aware of my intonation when I speak English.	1	2	3	4	5
5 I can sustain a conversation in English by using appropriate strategies, such as taking turns, giving feedback, and asking for clarification.	1	2	3	4	5
6 I enjoy socialising in English.	1	2	3	4	5
7 I can use appropriate communicative strategies, such as asking for repetition, and checking understanding.	1	2	3	4	5
8 I am not afraid of making mistakes in English.	1	2	3	4	5
9 I enjoy watching English programmes.	1	2	3	4	5
10 I am aware of the language learning activities and resources available at the Language Center.	1	2	3	4	5
11 I can express my personal point of view and comment on a variety of topics.	1	2	3	4	5
12 I am an active and effective team member when engaging in group language activities.	1	2	3	4	5
13 I am aware of my strengths and weaknesses as a user of English.	1	2	3	4	5
14 I feel confident talking with native English speakers.	1	2	3	4	5
15 I can always catch intended meanings, feelings and attitude in conversations.	1	2	3	4	5

16	My English vocabulary is adequate for participating in conversations.	1	2	3	4	5
17	My English pronunciation is adequate for participating in conversations.	1	2	3	4	5
18	My English grammar is adequate for participating in conversations.	1	2	3	4	5
19	I can initiate and participate in casual conversations with people in English.	1	2	3	4	5
20	I get used to speaking English to my peers.	1	2	3	4	5
21	I have clear goals about my future language learning.	1	2	3	4	5
22	I make use of the language learning facilities and opportunities offered by the Language Center.	1	2	3	4	5
23	I can understand and respond to complex spoken instructions.	1	2	3	4	5
24	I can use English in a creative way when I lack the appropriate vocabulary.	1	2	3	4	5
25	I know where to seek help when I have a problem with English.	1	2	3	4	5
26	I am highly motivated to become a competent user of English.	1	2	3	4	5

Thank you for completing the questionnaire

POST-EVENT QUESTIONNAIRE

Spring 2010

Student ID: _____

How do you rate your current English proficiency level? (Circle the appropriate answer.)

	Very low -----					
	Very high					
Overall English	1	2	3	4	5	6
Speaking	1	2	3	4	5	6
Listening	1	2	3	4	5	6

Please indicate your level of agreement with the statements below.

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Item	Circle your response				
	1	2	3	4	5
1 I can understand a wide variety of English accents.					
2 I am able to use English to express personal feelings and emotions.					
3 I feel confident speaking English in public.					
4 I am aware of my intonation when I speak English.					
5 I can sustain a conversation in English by using appropriate strategies, such as taking turns, giving feedback, and asking for clarification.					
6 I enjoy socialising in English.					
7 I can use appropriate communicative strategies, such as asking for repetition, and checking understanding.					
8 I am not afraid of making mistakes in English.					
9 I enjoy watching English programmes.					
10 I am aware of the language learning activities and resources available at the Language Center.					
11 I can express my personal point of view and comment on a variety of topics.					
12 I am an active and effective team member when engaging in group language activities.					
13 I am aware of my strengths and weaknesses as a user of English.					
14 I feel confident talking with native English speakers.					
15 I can always catch intended meanings, feelings and attitude in conversations.					
16 My English vocabulary is adequate for participating in					

	conversations.					
17	My English pronunciation is adequate for participating in conversations.	1	2	3	4	5
18	My English grammar is adequate for participating in conversations.	1	2	3	4	5
19	I can initiate and participate in casual conversations with people in English.	1	2	3	4	5
20	I get used to speaking English to my peers.	1	2	3	4	5
21	I have clear goals about my future language learning.	1	2	3	4	5
22	I make use of the language learning facilities and opportunities offered by the Language Center.	1	2	3	4	5
23	I can understand and respond to complex spoken instructions.	1	2	3	4	5
24	I can use English in a creative way when I lack the appropriate vocabulary.	1	2	3	4	5
25	I know where to seek help when I have a problem with English.	1	2	3	4	5
26	I am highly motivated to become a competent user of English.	1	2	3	4	5

1. Do you enjoy the activities in the ELBS Programme? Why or why not?

2. What do you enjoy most about this Programme?

3. What skills and knowledge have you learnt in this Programme?

4. What changes would you like us to make to this Programme?

5. Would you like to continue as a participant of the Programme in the Spring Semester? Why/Why not?

6. Would you recommend this activity to your friends? Why/ Why not?

Thank you for completing the questionnaire

PRE-EVENT QUESTIONNAIRE

Fall 2010

Student ID: _____

How do you rate your current English proficiency level? (Circle the appropriate answer.)

	Very low ----- Very high					
Overall English	1	2	3	4	5	6
Speaking	1	2	3	4	5	6
Listening	1	2	3	4	5	6

Please indicate your level of agreement with the statements below.

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Item	Circle your response				
1 I can understand a wide variety of English accents.	1	2	3	4	5
2 I am able to use English to express personal feelings and emotions.	1	2	3	4	5
3 I feel confident speaking English in public.	1	2	3	4	5
4 I am aware of my intonation when I speak English.	1	2	3	4	5
5 I can sustain a conversation in English by using appropriate strategies, such as taking turns, giving feedback, and asking for clarification.	1	2	3	4	5
6 I enjoy socialising in English.	1	2	3	4	5
7 I can use appropriate communicative strategies, such as asking for repetition, and checking understanding.	1	2	3	4	5
8 I am not afraid of making mistakes in English.	1	2	3	4	5
9 I enjoy watching English programmes.	1	2	3	4	5
10 I am aware of the language learning activities and resources available at the Language Center.	1	2	3	4	5
11 I can express my personal point of view and comment on a variety of topics.	1	2	3	4	5
12 I am an active and effective team member when engaging in group language activities.	1	2	3	4	5
13 I am aware of my strengths and weaknesses as a user of English.	1	2	3	4	5
14 I feel confident talking with native English speakers.	1	2	3	4	5
15 I can always catch intended meanings, feelings and attitude in conversations.	1	2	3	4	5

16	My English vocabulary is adequate for participating in conversations.	1	2	3	4	5
17	My English pronunciation is adequate for participating in conversations.	1	2	3	4	5
18	My English grammar is adequate for participating in conversations.	1	2	3	4	5
19	I can initiate and participate in casual conversations with people in English.	1	2	3	4	5
20	I get used to speaking English to my peers.	1	2	3	4	5
21	I have clear goals about my future language learning.	1	2	3	4	5
22	I make use of the language learning facilities and opportunities offered by the Language Center.	1	2	3	4	5
23	I can understand and respond to complex spoken instructions.	1	2	3	4	5
24	I can use English in a creative way when I lack the appropriate vocabulary.	1	2	3	4	5
25	I know where to seek help when I have a problem with English.	1	2	3	4	5
26	I am highly motivated to become a competent user of English.	1	2	3	4	5

Thank you for completing the questionnaire

POST-EVENT QUESTIONNAIRE

Fall 2010

Student ID: _____

How do you rate your current English proficiency level? (Circle the appropriate answer.)

	Very low -----					
	Very high					
Overall English	1	2	3	4	5	6
Speaking	1	2	3	4	5	6
Listening	1	2	3	4	5	6

Please indicate your level of agreement with the statements below.

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

Item	Circle your response				
	1	2	3	4	5
1 I can understand a wide variety of English accents.					
2 I am able to use English to express personal feelings and emotions.					
3 I feel confident speaking English in public.					
4 I am aware of my intonation when I speak English.					
5 I can sustain a conversation in English by using appropriate strategies, such as taking turns, giving feedback, and asking for clarification.					
6 I enjoy socialising in English.					
7 I can use appropriate communicative strategies, such as asking for repetition, and checking understanding.					
8 I am not afraid of making mistakes in English.					
9 I enjoy watching English programmes.					
10 I am aware of the language learning activities and resources available at the Language Center.					
11 I can express my personal point of view and comment on a variety of topics.					
12 I am an active and effective team member when engaging in group language activities.					
13 I am aware of my strengths and weaknesses as a user of English.					
14 I feel confident talking with native English speakers.					
15 I can always catch intended meanings, feelings and attitude in conversations.					
16 My English vocabulary is adequate for participating in					

	conversations.					
17	My English pronunciation is adequate for participating in conversations.	1	2	3	4	5
18	My English grammar is adequate for participating in conversations.	1	2	3	4	5
19	I can initiate and participate in casual conversations with people in English.	1	2	3	4	5
20	I get used to speaking English to my peers.	1	2	3	4	5
21	I have clear goals about my future language learning.	1	2	3	4	5
22	I make use of the language learning facilities and opportunities offered by the Language Center.	1	2	3	4	5
23	I can understand and respond to complex spoken instructions.	1	2	3	4	5
24	I can use English in a creative way when I lack the appropriate vocabulary.	1	2	3	4	5
25	I know where to seek help when I have a problem with English.	1	2	3	4	5
26	I am highly motivated to become a competent user of English.	1	2	3	4	5

1. Do you enjoy the activities in the ELBS Programme? Why or why not?

2. What do you enjoy most about this Programme?

3. What skills and knowledge have you learnt in this Programme?

4. What changes would you like us to make to this Programme?

5. Would you like to continue as a participant of the Programme in the Spring Semester? Why/Why not?

6. Would you recommend this activity to your friends? Why/ Why not?

Thank you for completing the questionnaire

Appendix H: Results Figures

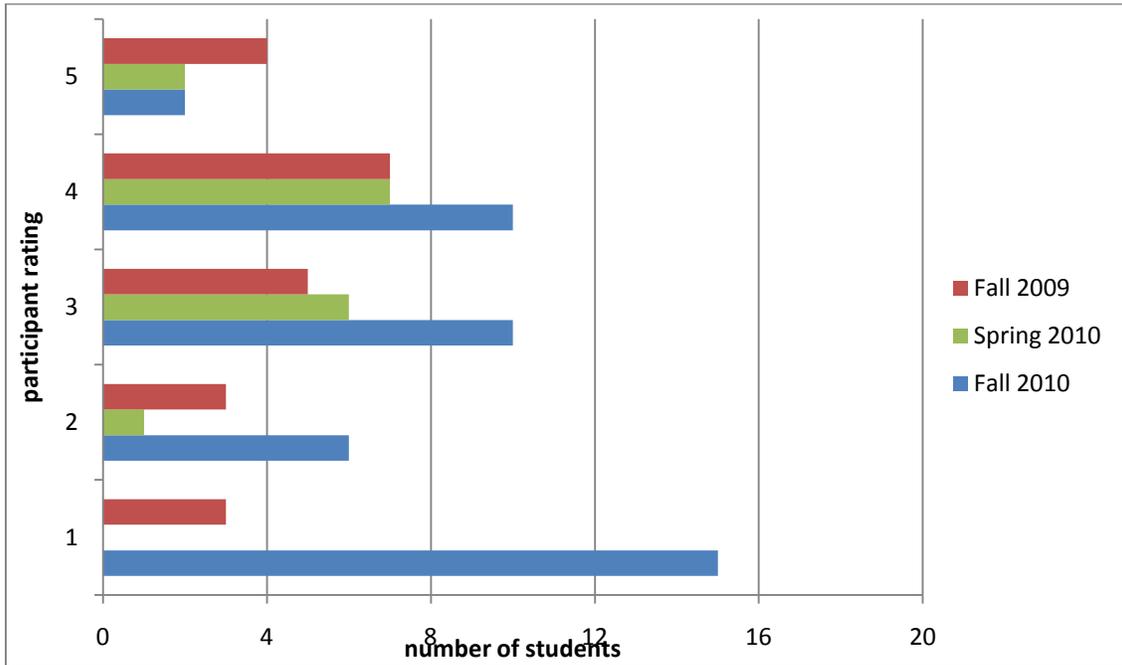


Figure H-1 Questionnaire Response: Question 4 - How often did you participate in weekly Buddy meetings?

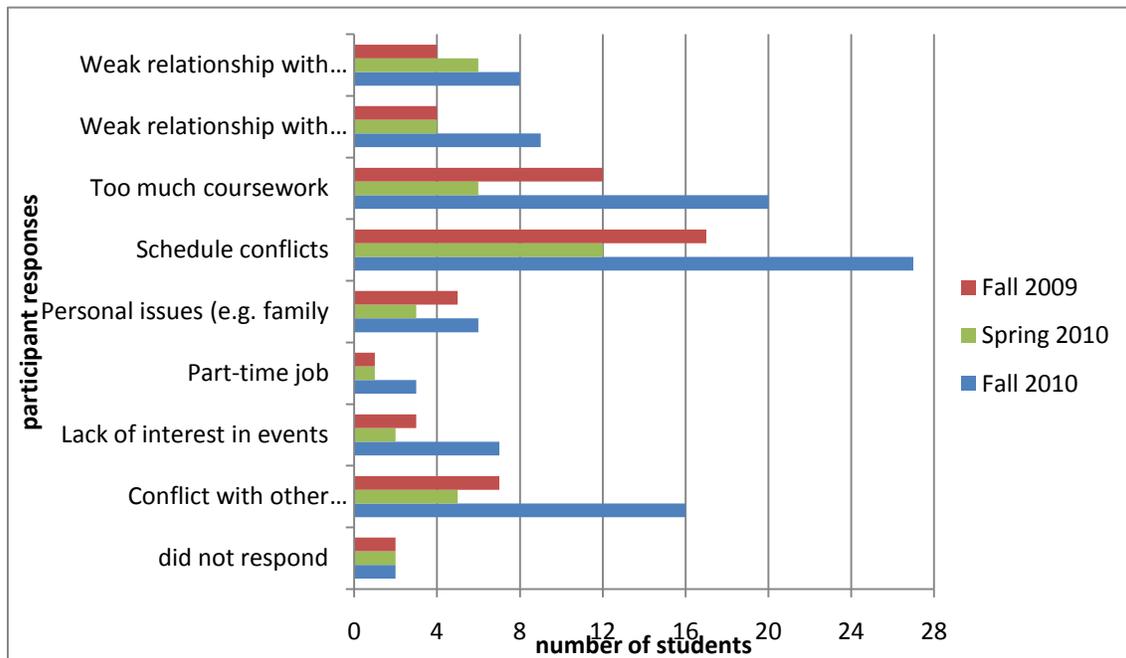


Figure H-2 Questionnaire Response: Question 5 - If you did not attend all weekly meetings, why?

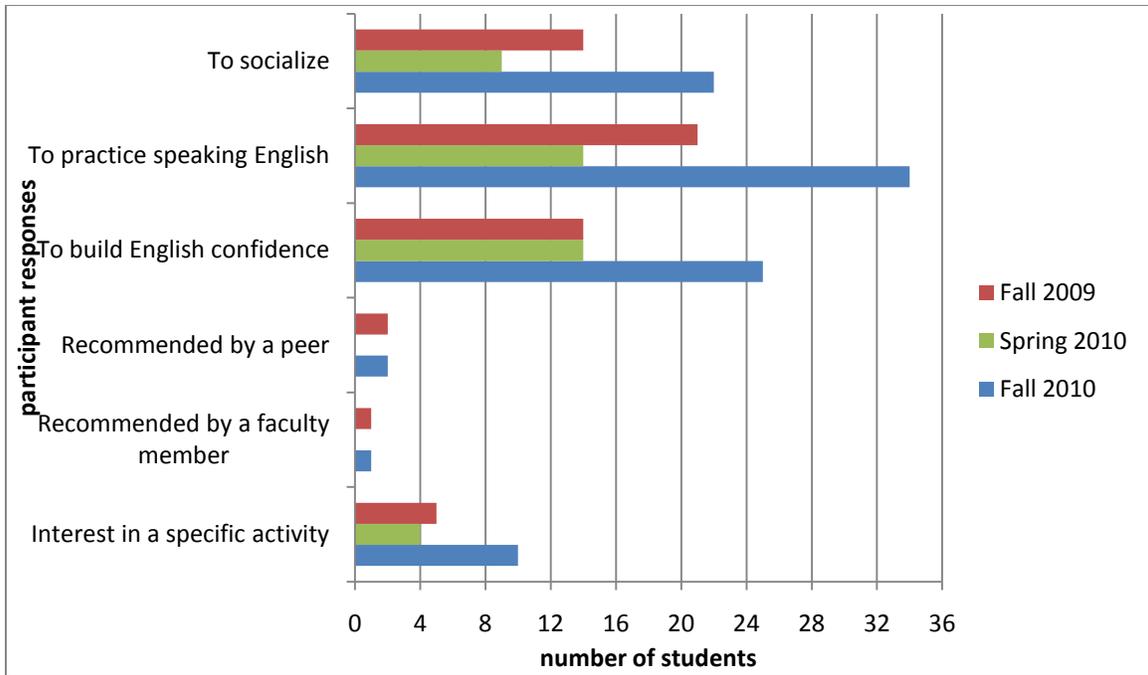


Figure H-3 Questionnaire Response: Question 6 - Why did you choose to participate in ELBS?

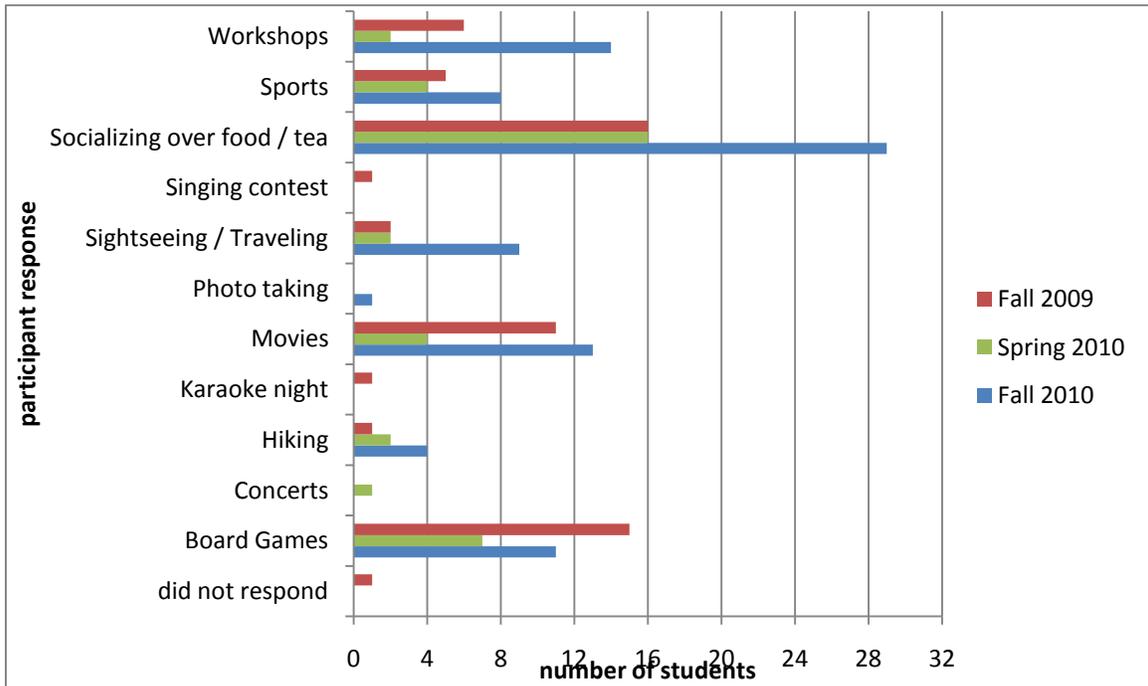


Figure H-4 Questionnaire Response: Question 7 - What types of activities did you participate in?

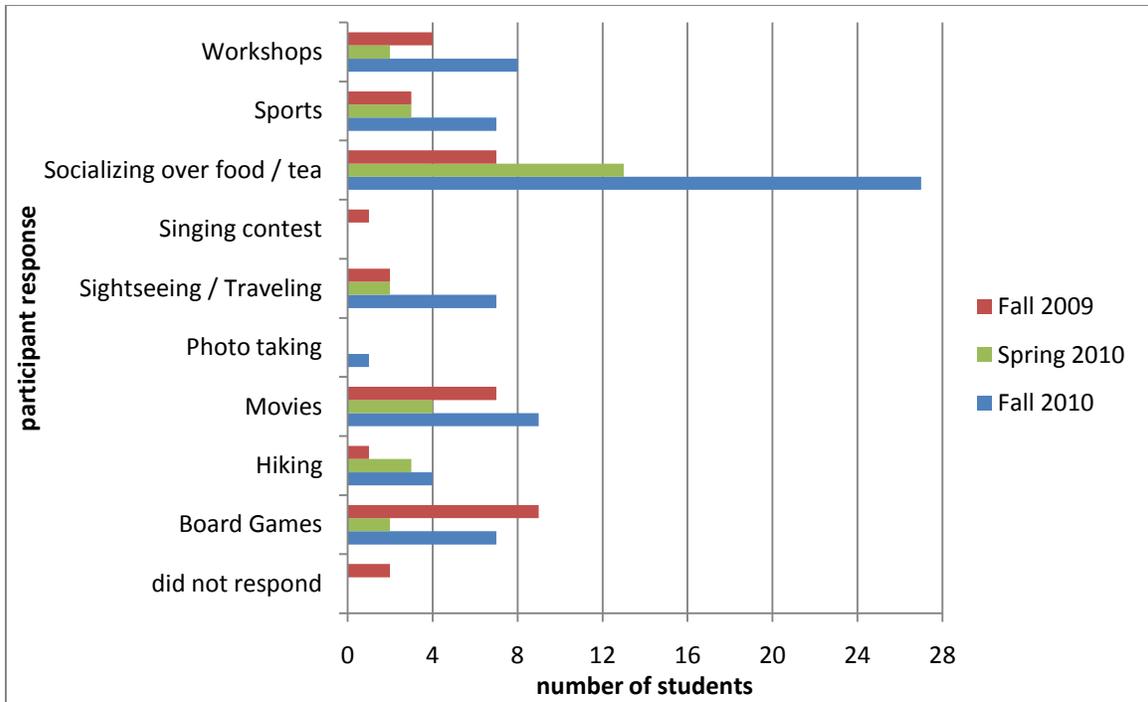


Figure H-5 Questionnaire Response: Question 8 - Which activities were most enjoyable?

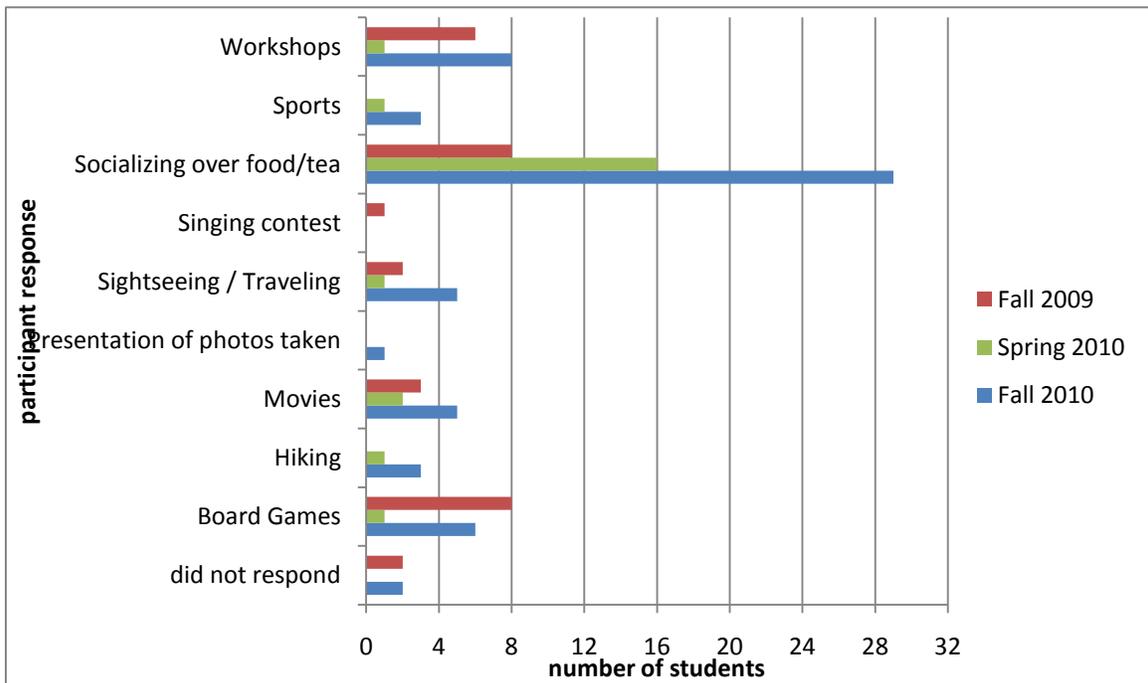


Figure H-6 Questionnaire Response: Question 9 - Which of these activities most improved your confidence in English?

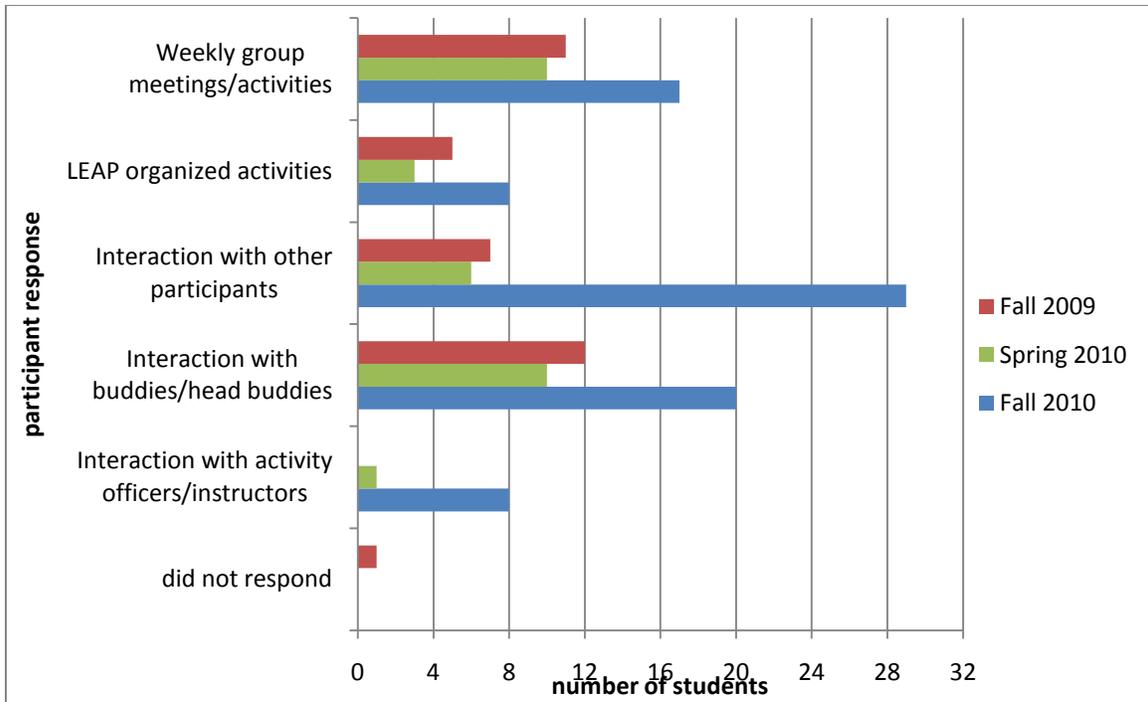


Figure H-7 Questionnaire Response: Question 10 - Which ELBS resources most helped your English?

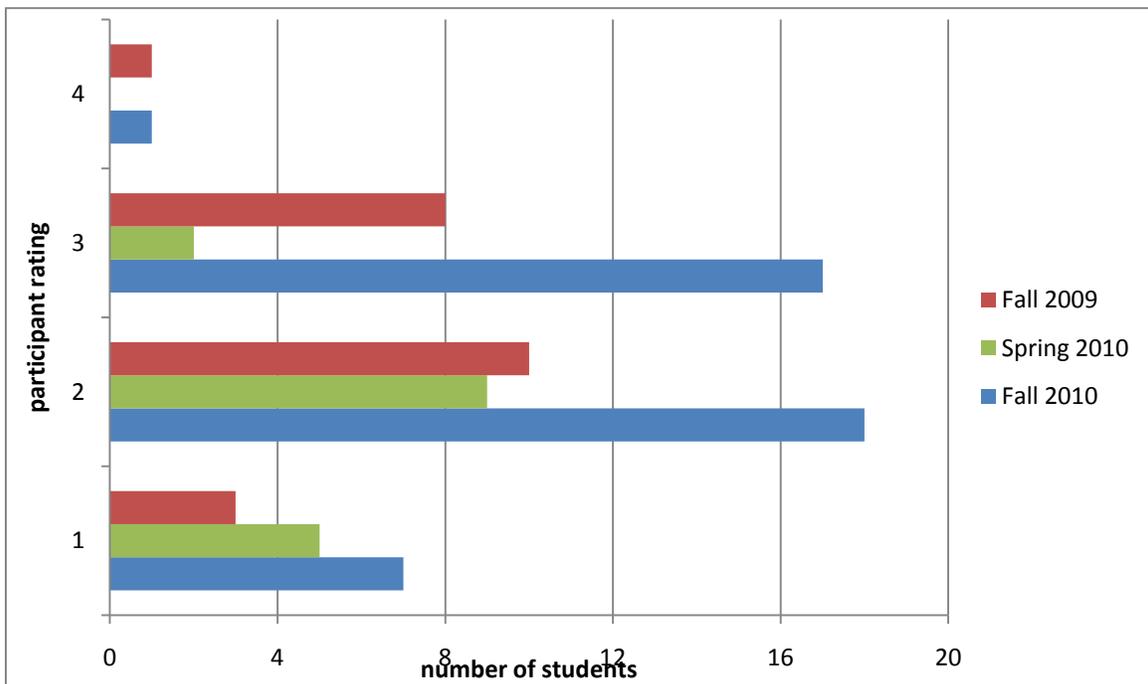


Figure H-8 Questionnaire Response: Question 11 - How much do you feel ELBS improved your comfort with English?

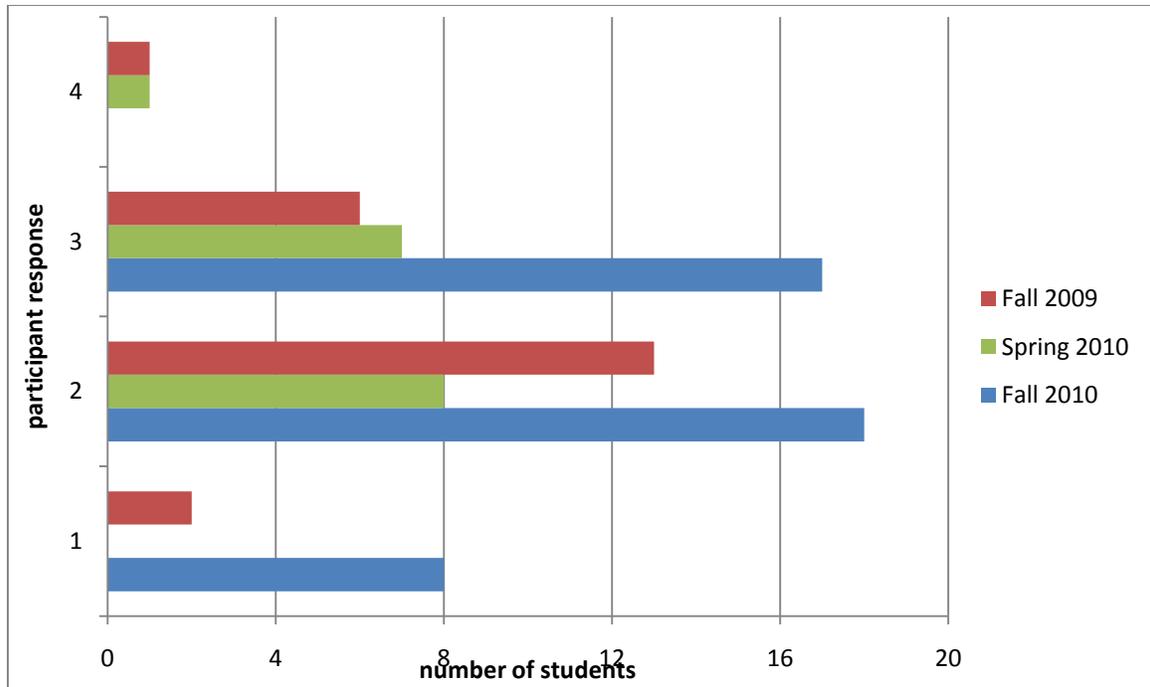


Figure H-9 Questionnaire Response: Question 12 - How much do you feel ELBS improved your English speaking skills?

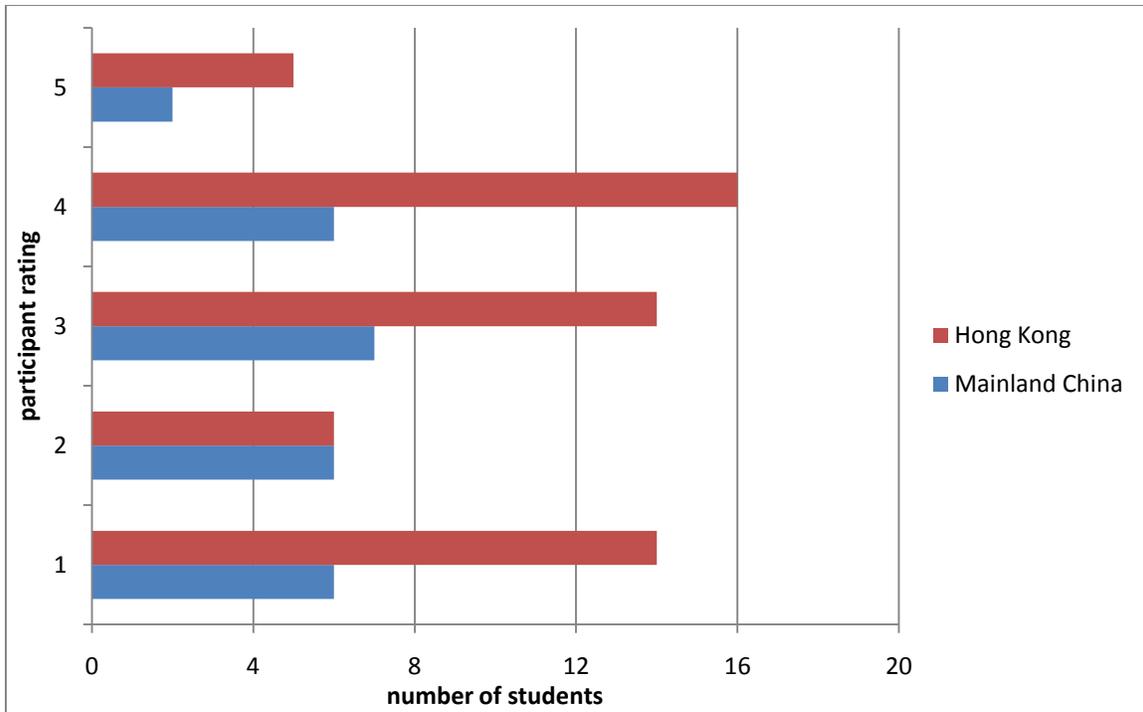


Figure H-10 Questionnaire Response: Question 4 - How often did you participate in weekly Buddy meetings?

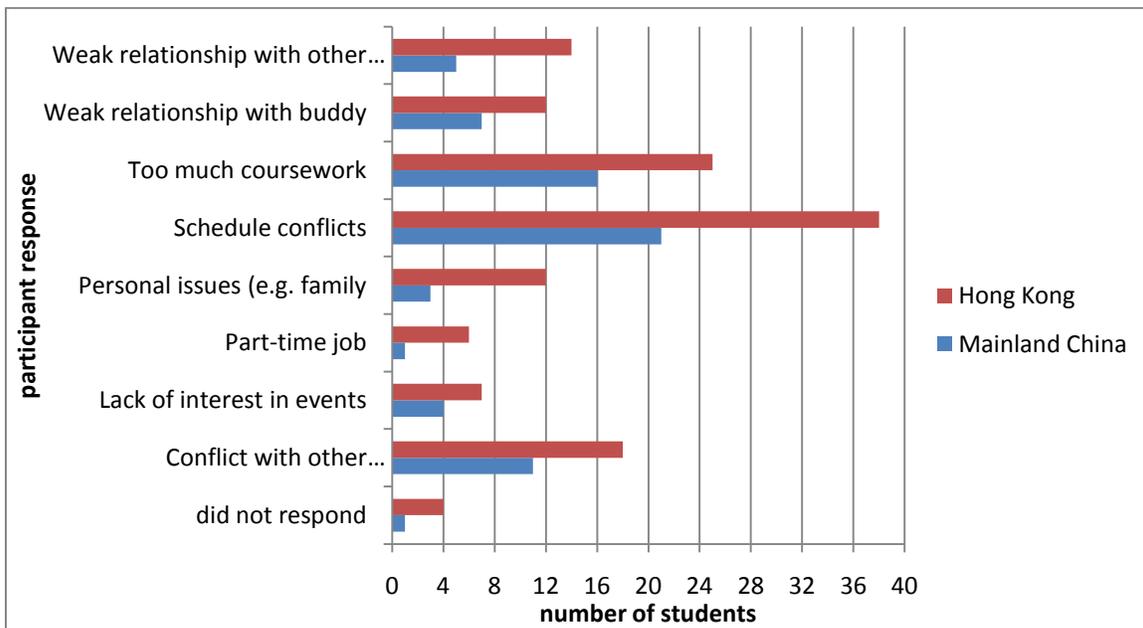


Figure H-11 Questionnaire Response: Question 5 - If you did not attend all weekly meetings, why?

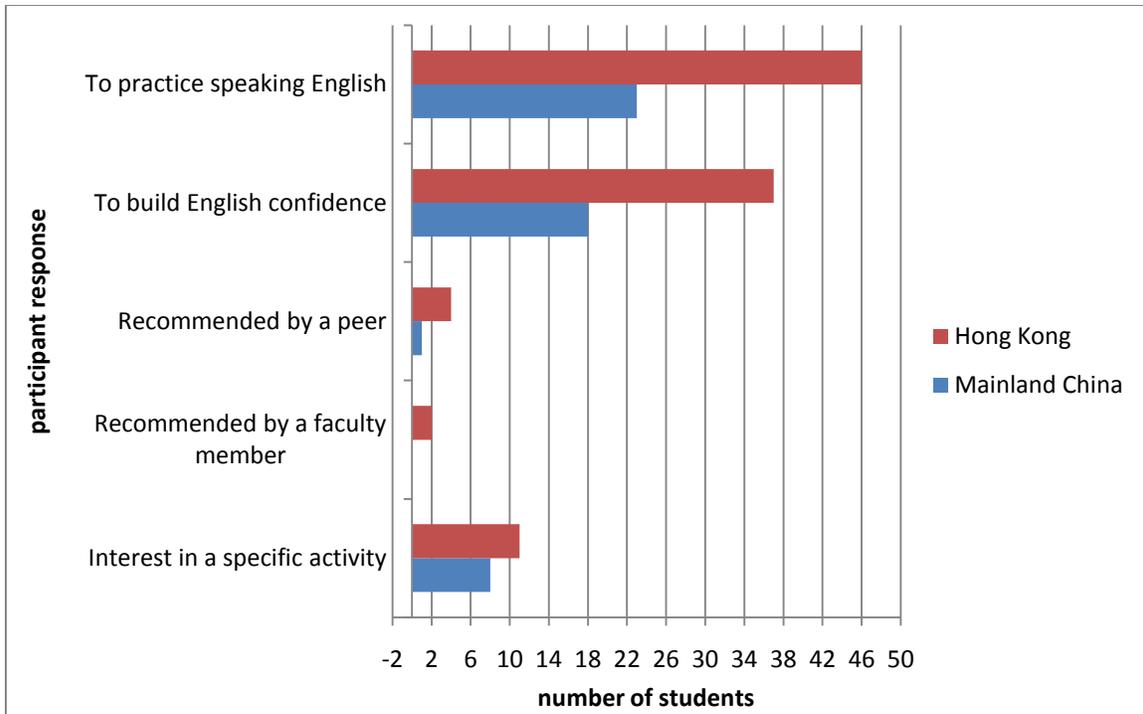


Figure H-12 Questionnaire Response: Question 6 - Why did you choose to participate in ELBS?

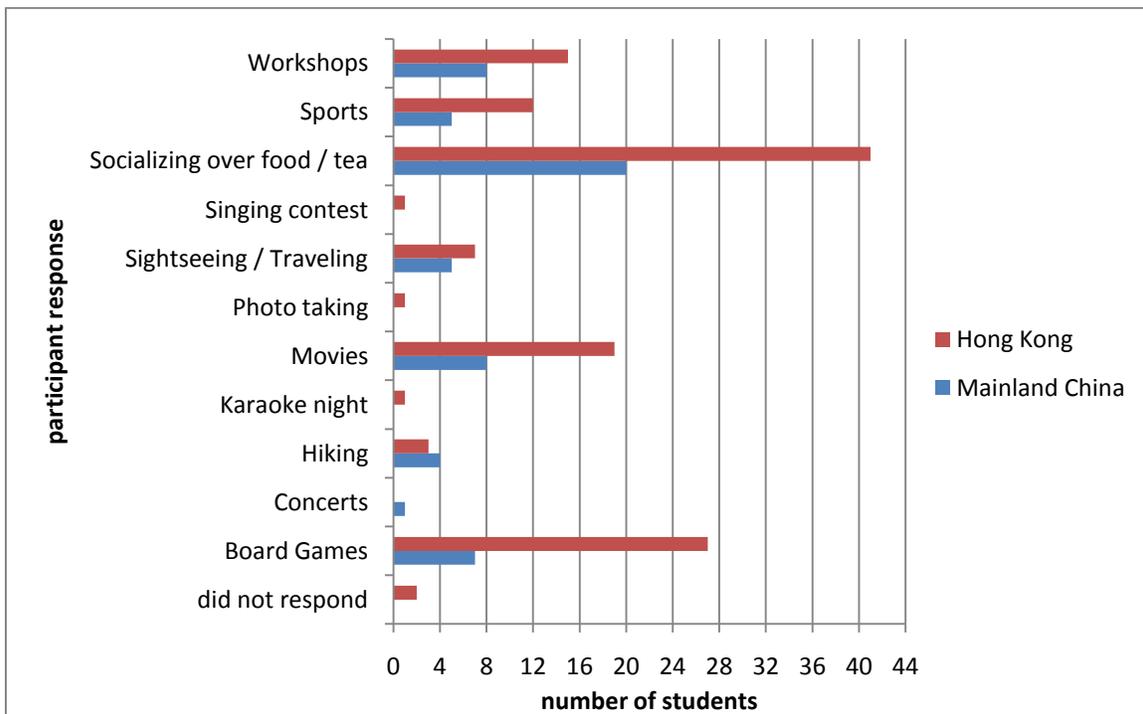


Figure H-13 Questionnaire Response: Question 7 - What types of activities did you participate in?

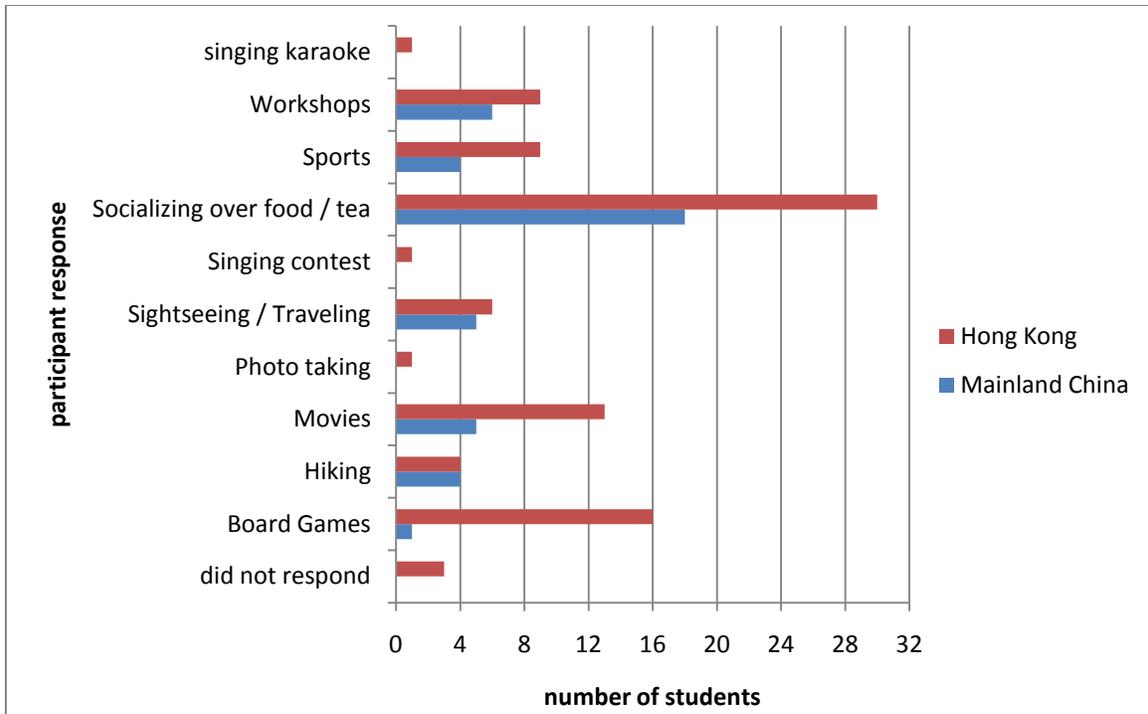


Figure H-14 Questionnaire Response: Question 8 - Which activities were most enjoyable?

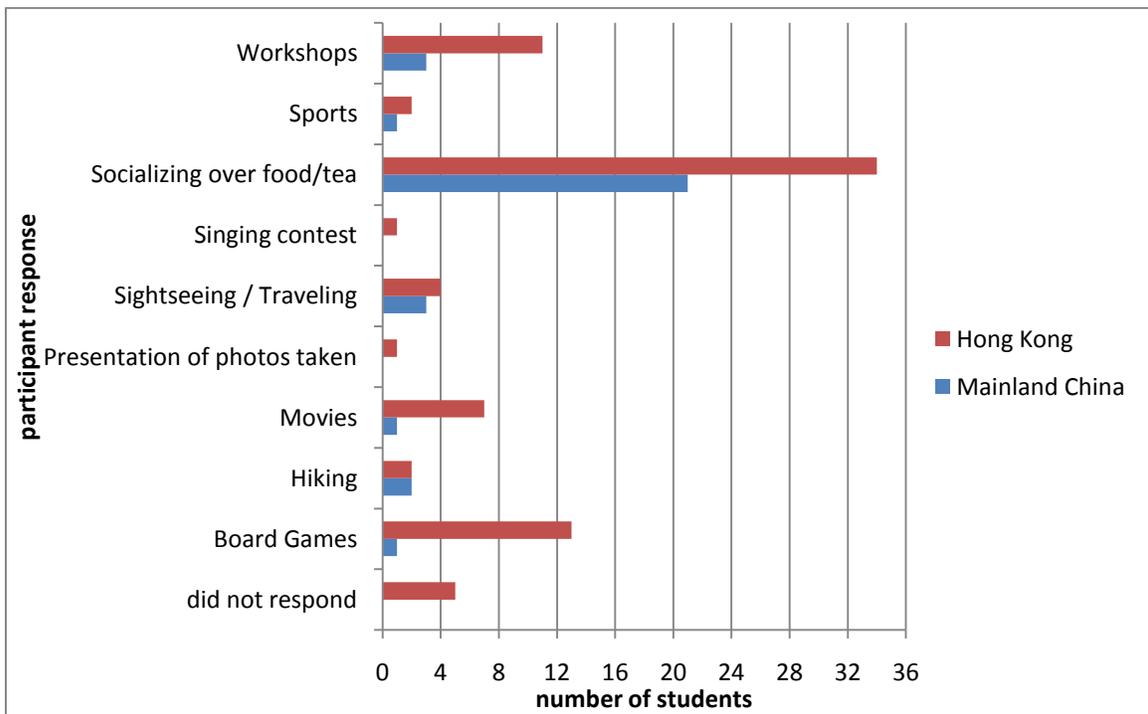


Figure H-15 Questionnaire Response: Question 9 - Which of these activities most improved your confidence in English?

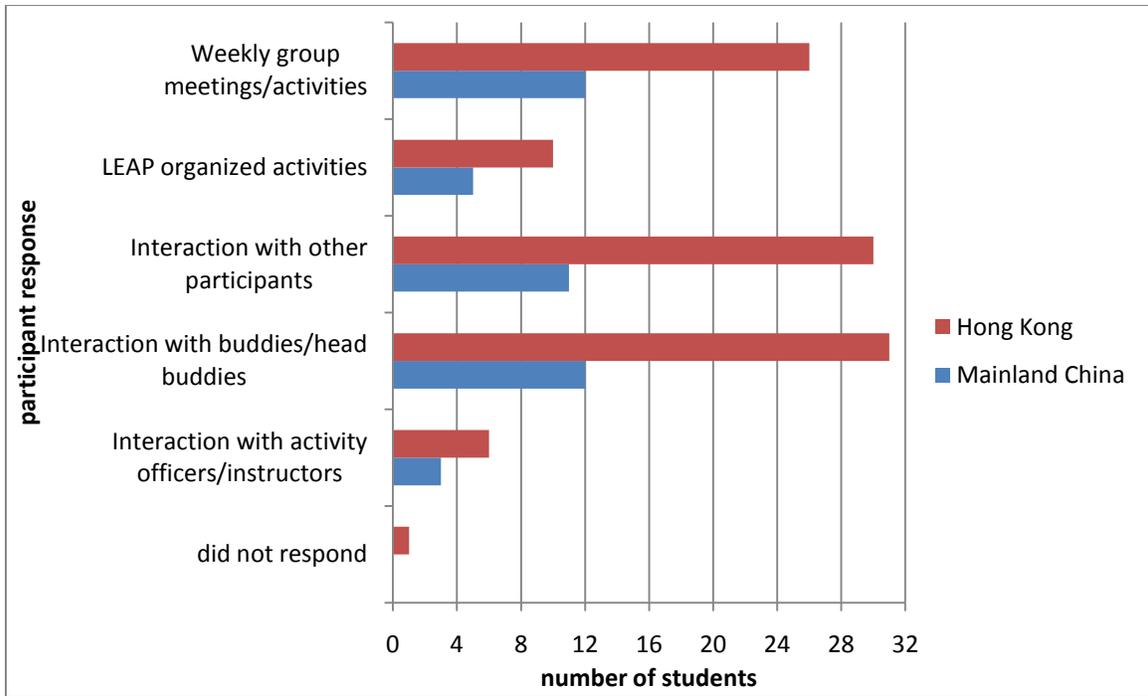


Figure H-16 Questionnaire Response: Question 10 - Which ELBS resources most helped your English?

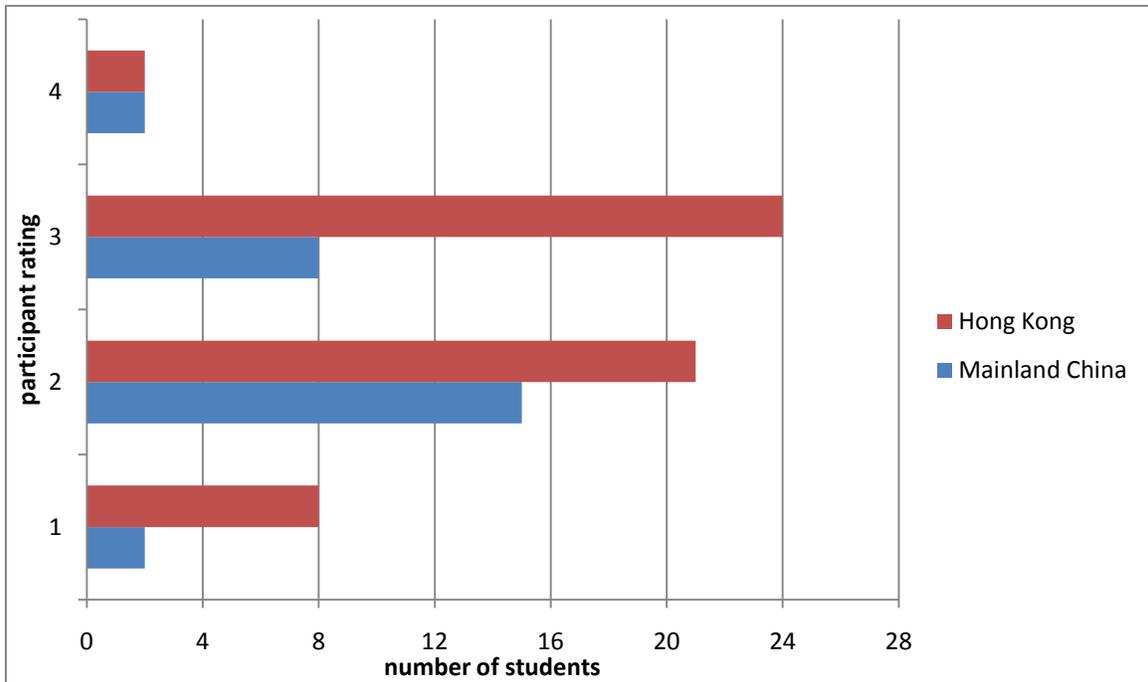


Figure H-17 Questionnaire Response: Question 11 - How much do you feel ELBS improved your comfort with English?

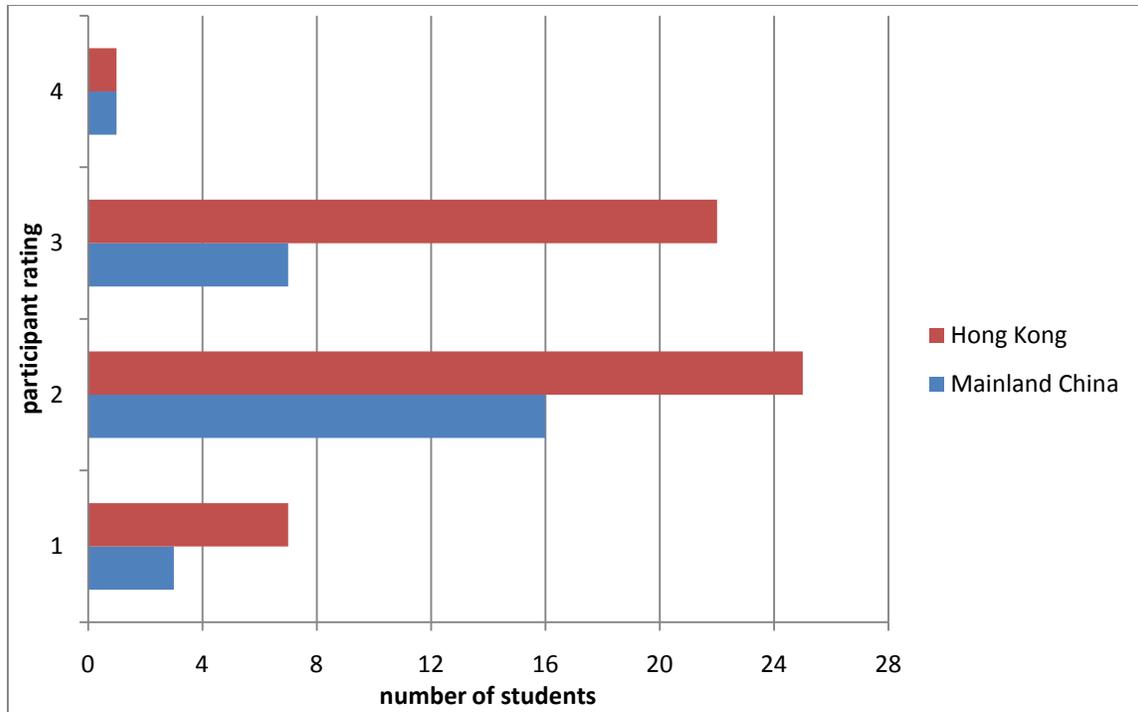


Figure H-18 Questionnaire Response: Question 12 - How much do you feel ELBS improved your English speaking skills?

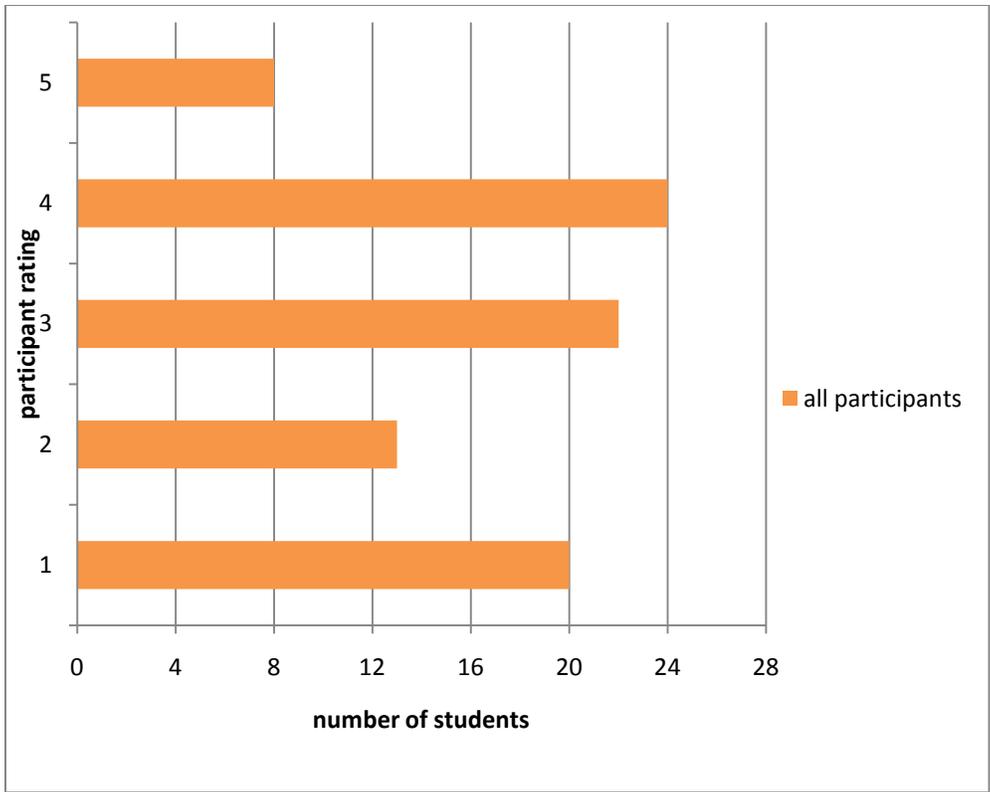


Figure H-19 Questionnaire Response: Question 4 - How often did you participate in weekly Buddy meetings?

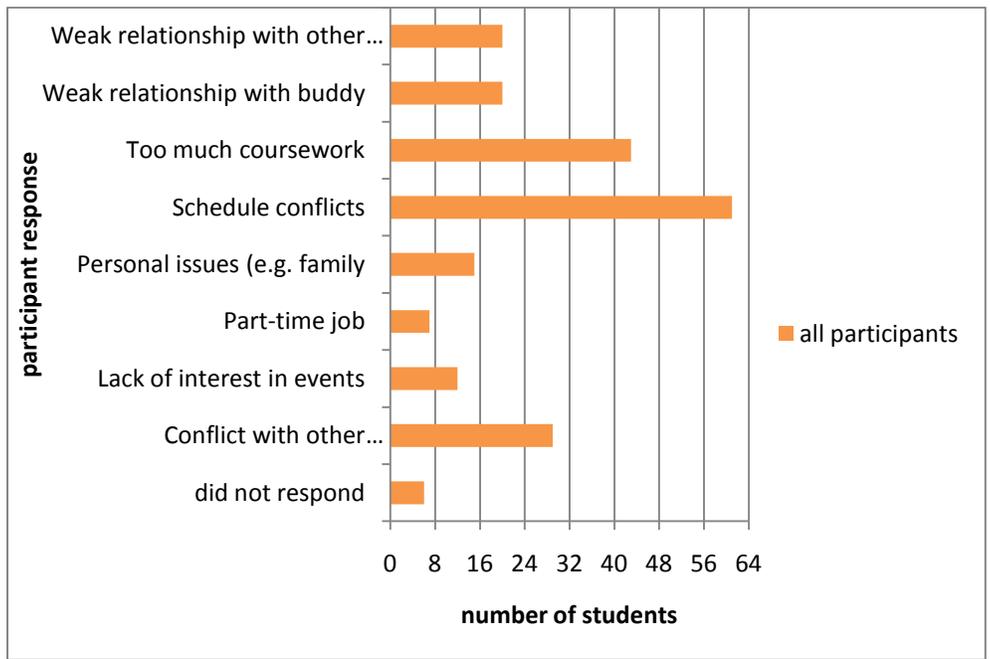


Figure H-20 Questionnaire Response: Question 5- If you did not attend all weekly meetings, why?

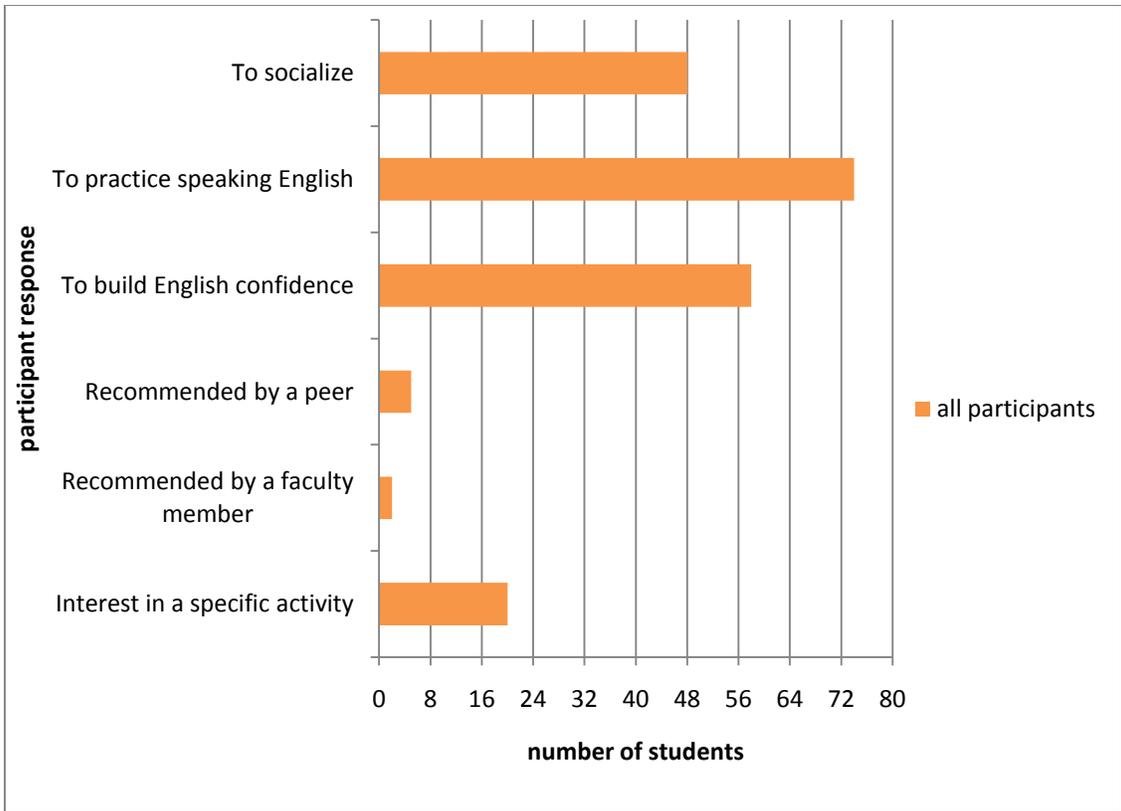


Figure H-21 Questionnaire Response: Question 6 - Why did you choose to participate in ELBS?

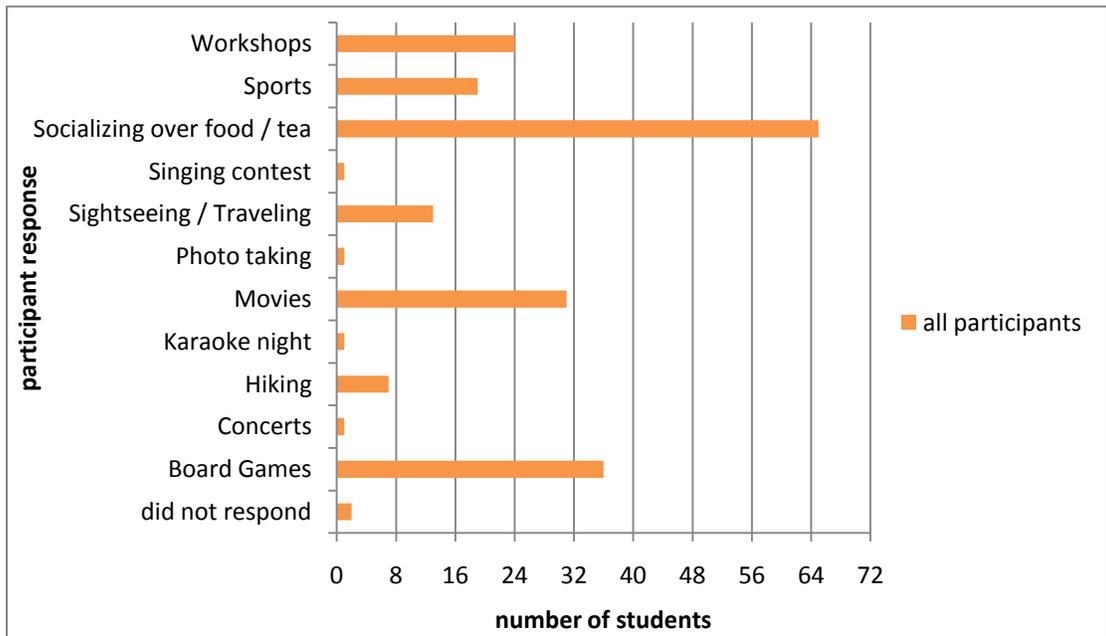


Figure H-22 Questionnaire Response: Question 7- What types of activities did you participate in?

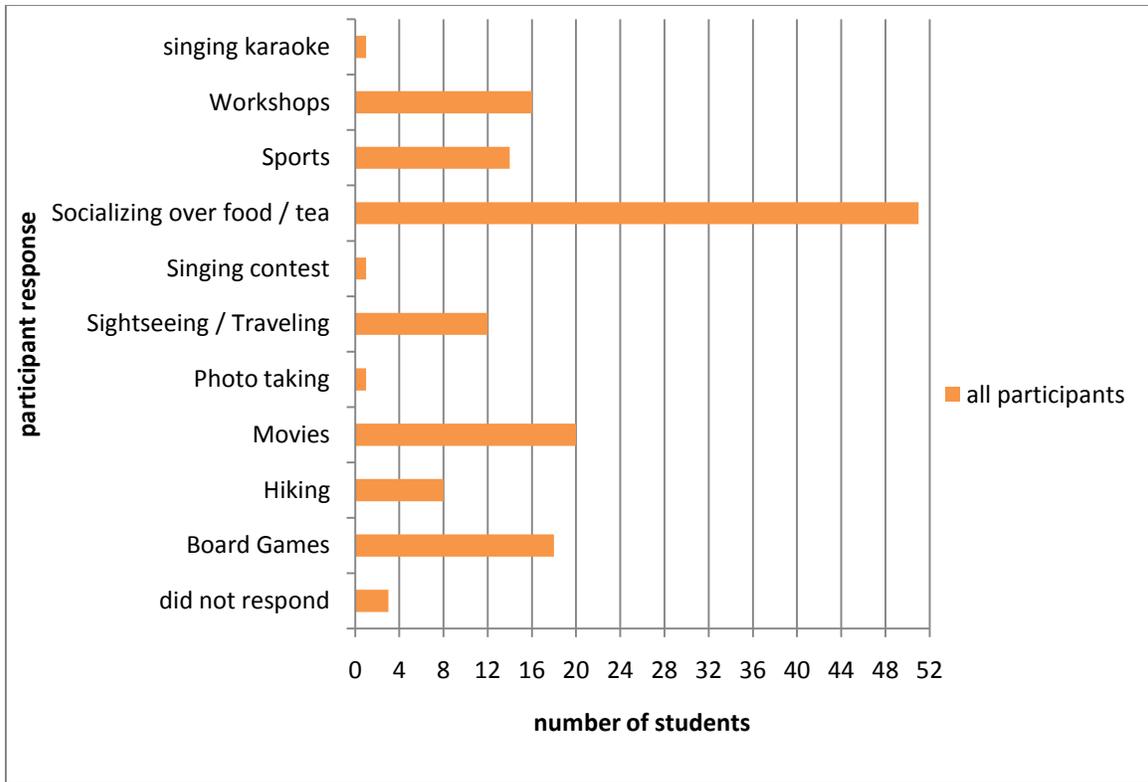


Figure H-23 Questionnaire Response: Question 8 - Which activities were most enjoyable?

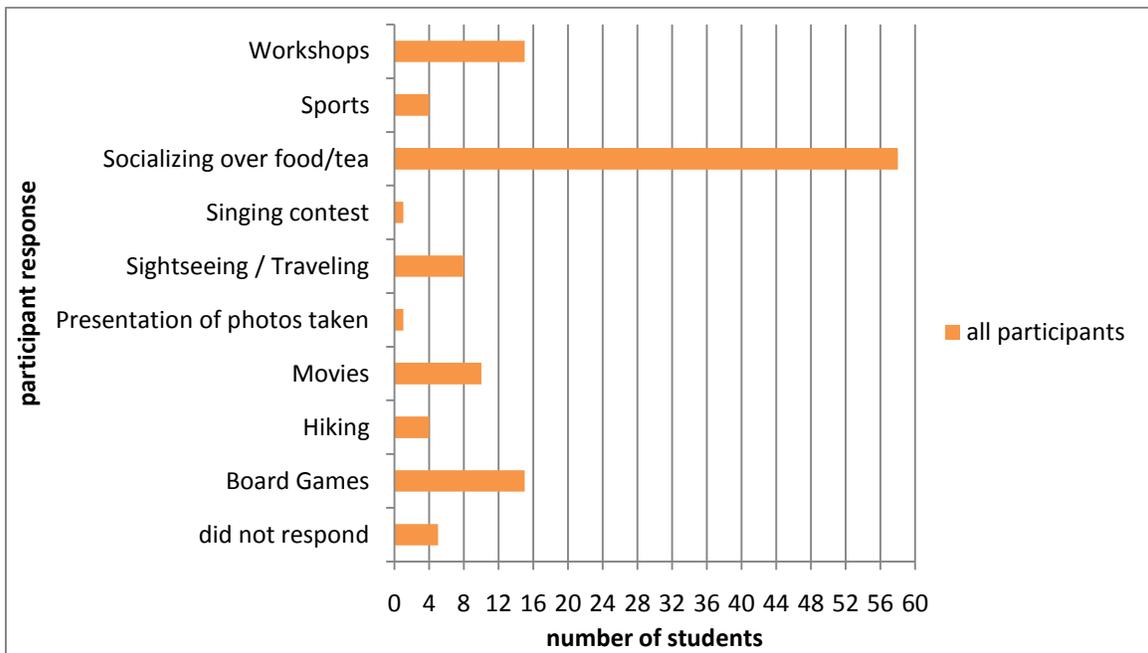


Figure H-24 Questionnaire Response: Question 9 - Which of these activities most improved your confidence in English?

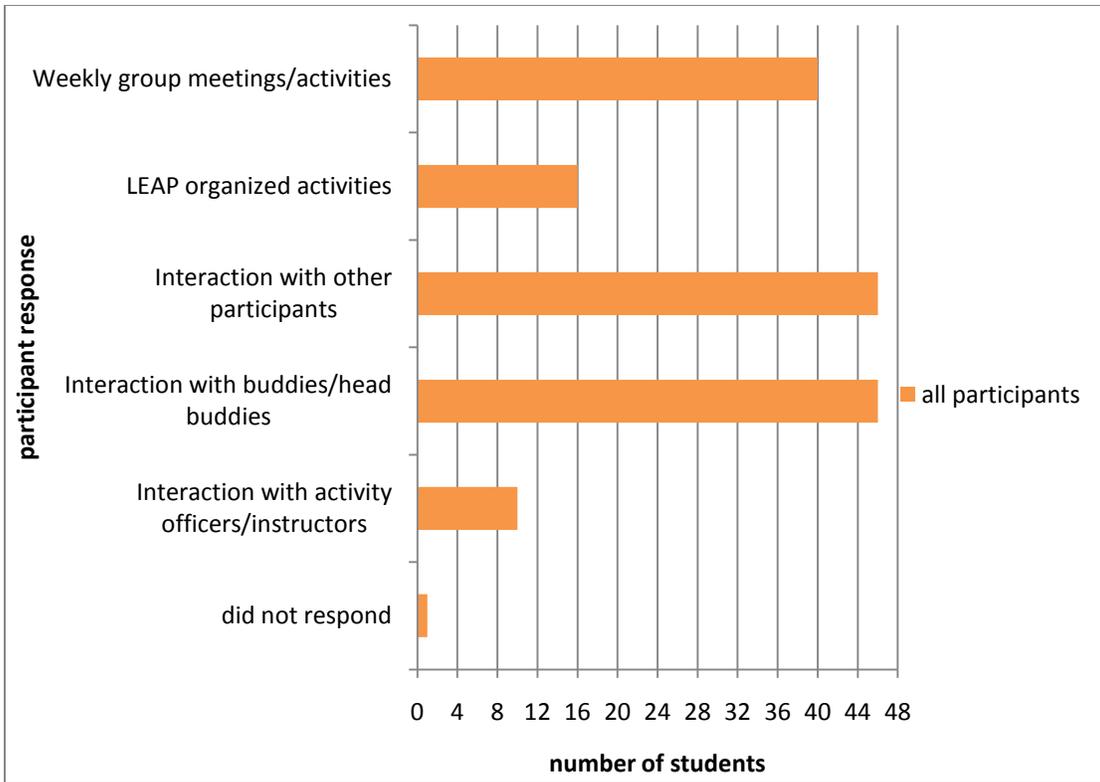


Figure H-25 Questionnaire Response: Question 10: Which ELBS resources most helped your English?

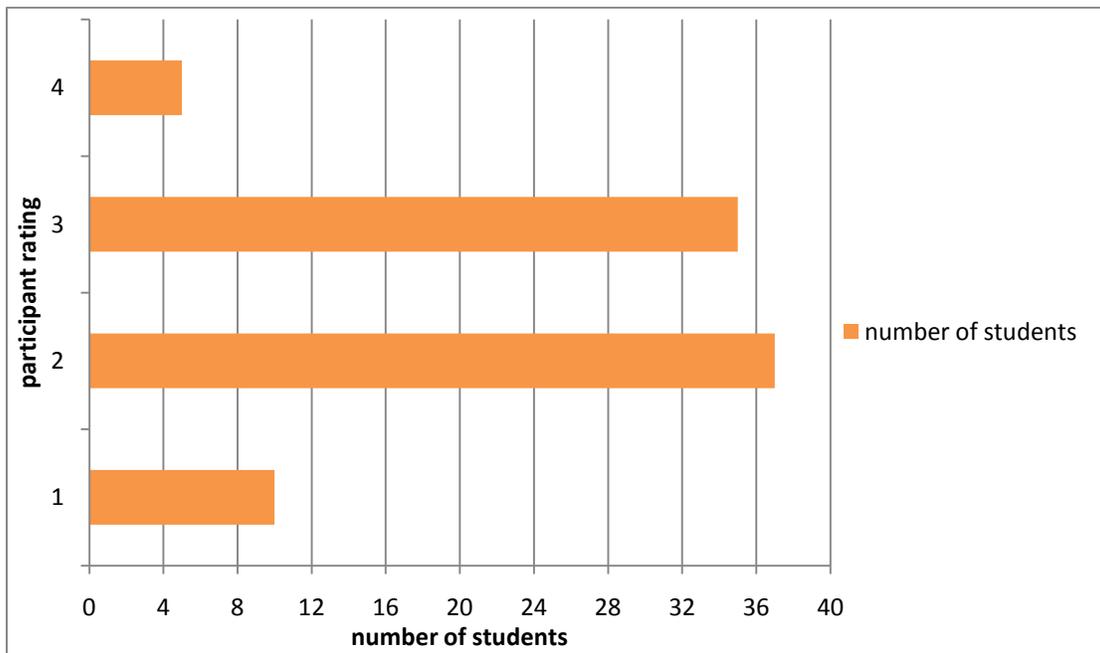


Figure H-26 Questionnaire Response: Question 11 - How much do you feel ELBS improved your comfort with English?

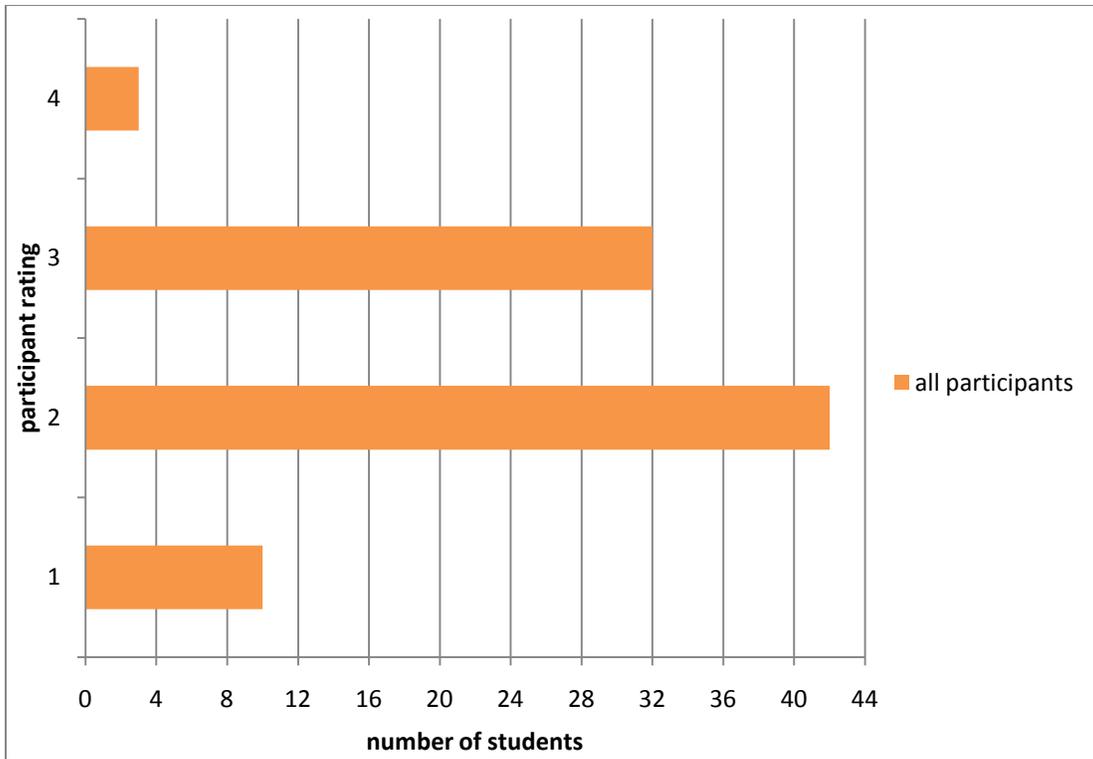


Figure H-27 Questionnaire Response: Question 12 - How much do you feel ELBS improved your English speaking skills?