A Needs Analysis of the English Language Institute Reading Program at the University of Hawaii at Manoa

Conducted by Leslie Ono

Acknowledgements
This project would not have been possible if not for the much appreciated cooperation and participation of the Spring 2002 ELI Reading Program students and instructors. Additionally, I would like to thank the ELI administration for their support and feedback, Ken Urano for fielding my many questions and providing a great deal of assistance, and Professor JD Brown for his valuable comments and suggestions.

INTRODUCTION

The following report is based on a needs analysis (NA) conducted within the English Language Institute (ELI) Reading Program at the University of Hawaii, Manoa, (UHM) during the 2002 spring semester. The overall goals of this project were to (a) investigate the academic reading needs of students enrolled in ELI reading courses, (b) assess the effectiveness of ELI reading courses to meet the students' academic reading needs, and (c)) offer useful information for ongoing ELI curriculum development efforts which could contribute to the continuous strengthening of the ELI reading program.

An initial survey of literature addressing current English for Academic Purposes (EAP) reading issues and EAP language programs was performed in order to gain further background knowledge concerning the present NA target population. Additionally, a review of NA literature was conducted in an effort to refine NA procedures and avoid the many methodological issues which have confounded past NA projects (Long, in press). Based on this information, ELI reading program student questionnaires and structured ELI reading instructor interviews were constructed, administered and evaluated to form the basis of this NA project data. The following report will provide a brief review of literature pertinent to the present NA target population, a description of the present NA project methodology and results, and a discussion of the implications that these results have for ELI reading course curriculum and instruction.

EAP Reading

The ultimate goal for EAP language courses is to essentially equip second language students with the necessary skills and abilities to perform successfully in their academic studies where English is the medium of instruction. Discussion in the literature, what little there is, addressing the effectiveness of EAP reading curriculum to meet this goal predominantly concerns issues related to pedagogical approaches and, ultimately, course syllabus design.

Traditionally, EAP reading instruction has focussed on the learning and practice of isolated reading skills, such as finding the main idea of a passage, guessing unknown vocabulary in context, and scanning to find specific information. This is not surprising, considering that the majority of currently published EAP teaching materials are based on such a skills-building approach. In adopting a skills-based syllabus, it is assumed that the practice of various reading skills will enable students to handle the academic reading demands of their content courses. However, this seems unlikely considering that reading skills are typically practiced in isolation, with a series of short activities not related to common academic course tasks and with texts not comparable to those found in academic content courses (Shih, 1992).

Advocating a move away from the traditional skills-based approach, recent literature suggests that the task-based orientation and means of assessing performance typical of academic content courses warrants the need for EAP reading courses to adopt a task-based approach to EAP reading instruction. Carrell and Carson (1997) define *academic tasks* as "those (tasks) that constitute evaluated products in academic courses" (p. 55). For example, a typical *academic task* would be reading a chapter of a history textbook to prepare for a multiple-choice exam. In this case, the *evaluated product* would be the students' performance on the multiple-choice exam. Carrell and Carson (1997) argue that, within a task-based framework, "EAP students recognize the evaluated products as real academic demands, and thus a task focus has not only face validity, but also promotes transferability of skills and strategies to actual academic contexts" (p. 55). In contrast to a skills-based approach, *task* and performance on *evaluated products* as the foci of instruction promotes the inductive learning of appropriate task-specific reading processes in the context of performing actual academic tasks.

Additionally, task-based advocates argue for the importance of building students' specific knowledge about criterion tasks and meta-cognitive awareness concerning the reading and study

strategies appropriate for performing various tasks (Shih, 1992; Anderson & Armbruster, 1984). If students are knowledgeable about specific task and evaluation criteria, "they are more likely to focus attention on relevant material and engage in processing activities appropriate to performing that task" (Anderson & Armbruster, 1984, p. 664). Criterion task knowledge may increase students' awareness of how to efficiently encode, synthesize and retrieve the information necessary for task performance.

In the process of performing a criterion task, multiple sub-tasks are involved. For example, in order for a student to read a textbook chapter and perform well on a multiple-choice exam, he/she would most likely need to complete sub-tasks such as, recognize main ideas in the text, make and review notes, comprehend new concepts introduced in the chapter, etc. In an EAP reading course, task-based instruction should involve the identification and incorporation of these sub-tasks into carefully sequenced pedagogical activities that constitute performance on the main criterion task (Carrell & Carson, 1997; Long & Crookes, 1992).

Additionally, for performance of criterion tasks in an EAP context, the texts employed should be comparable to those that students will typically encounter when performing a particular task in their academic courses (Shih, 1992; Carrell & Carson, 1997; Spector-Cohen, Kirschner & Wexler, 2001; Ostler, 1980). The selected readings should demonstrate discourse patterns and register level typical of academic prose and commonly found in academic reading materials. Furthermore, selected text length and type, including content, organization and discourse patterns, should be appropriate for performing the sub-tasks associated with a particular criterion task. If the criterion task is to take a multiple-choice quiz on one chapter of a history textbook, then an entire chapter of a history textbook should be used for sub-task and task instruction. Also, there should be a sufficient amount of information in the chapter to create items for the multiple-choice quiz. Although it may be easier for instructors to locate and

incorporate newspaper and magazine articles into lesson plans, it is unlikely that students will be expected to use such reading materials in their academic courses. By conducting a proper needs assessment, through surveys or interviews with students or domain experts (such as the students' professors), curriculum developers can determine target criterion tasks and accompanying, authentic materials to focus instruction (Shih, 1992; Long & Crookes, 1992)

Although a task-based syllabus promotes EAP reading instruction more closely related to the academic reading demands students will encounter in their content courses, does it account for the varying levels of students' language proficiencies? Spector-Cohen et. al. (2001) argue that EAP reading syllabus design should be more sensitive to language proficiency differences among students. The authors provide a "four-pronged approach to EAP reading syllabus design," suggesting that instructional time devoted to each of the following four areas will depend on students' language proficiency levels:

1. Focus on linguistic forms
2. Reading comprehension strategies
3. Typical academic genre/rhetorical forms
4. Criterion tasks

The authors argue that less proficient readers are more reliant on bottom-up, decoding strategies. Thus, they suggest that beginning level EAP courses focus instruction more on the learning of linguistic forms and reading comprehension strategies as a means of *empowering* students by providing them with the basic tools to help them become more proficient readers. On the other hand, advanced level students have achieved language proficiency sufficient to handle field-specific texts and tasks. Therefore, at this level, it is suggested that EAP reading instruction is content-specific and focus on familiarizing students with typical field-specific genre and academic tasks. The authors admittedly acknowledge the difficulty in defining and

determining levels of *language proficiency*. However, they propose that a "threshold of linguistic ability" may distinguish low and high language proficiency students and allude to the size of one's vocabulary knowledge as being a possible determinant of that threshold. The authors suggest that more research concerning the influence of language proficiency and vocabulary knowledge on EAP reading processes is needed.

Purpose

Based on the issues raised in the EAP literature, *reading needs* were determined to be associated with the types of materials and academic tasks that students encounter in their academic content courses as well as reading skills and strategies which may be problematic for students. Research questions were devised to investigate the particular academic reading needs for students enrolled in ELI reading courses and determine the extent to which ELI reading courses are currently meeting these needs. Additionally, questions were constructed to examine the extent to which academic reading needs and evaluation of ELI reading courses may differ for the following target sub-groups of ELI reading students:

1. ELI 72 students and ELI 82 students
2. Undergraduate students and graduate students
3. International students and immigrant students
4. Students taking courses within varying academic fields
5. Within ELI 82, students promoted from ELI 72 versus those placed directly into ELI 82

The research questions for present NA were as follows:

1. Are certain types of reading materials used more frequently in students' academic courses? Are there differences for the target sub-group populations?

2. Are certain types of academic reading tasks performed more frequently in students' academic courses? Are there differences for the target sub-group populations?
3. Of the types of academic tasks performed, do students perceive certain tasks to be more difficult than others? Are there differences for the target sub-group populations?
4. Do students perceive certain types of reading skills to be more difficult than other reading skills? Are there differences for the target sub-group populations?
5. To what extent do students' perceive certain components of ELI reading courses to be useful for improving their academic reading abilities? Are there differences for the target sub-group populations?
6. What are the ELI reading instructors' perceptions of students' academic reading needs? How do these perceptions influence the design and implementation of ELI reading courses?

METHODS

The English Language Institute at the University of Hawaii, Manoa

The English Language Institute (ELI) at the University of Hawaii, Manoa (UHM) provides English for Academic Purposes (EAP) courses for international and immigrant students admitted into the university's undergraduate and graduate degree programs. Upon admission and prior to enrollment, UHM international and immigrant students are referred to the ELI to determine if they are required to take the ELI placement test, a set of English language proficiency exams in the reading, writing and listening skill areas. According to the ELI Teacher's Manual (2002), a student is exempt from taking the ELI placement test if s/he meets at least one of the following criteria:

(a) the student is a native speaker of English
(b) the student has received a score of 600 or better on the paper-based TOEFL, or a score of 250 or better on the computer-based TOEFL
(c) the student has received a score of 460 or better on the verbal section of the GRE

(d) the student has received a score of 460 or better on the verbal section of the SAT if taken before April 1995, or a score of 540 or better if taken in April 1995 or thereafter

(e) the student has an AA degree from a community college within the University of Hawaii system

(f) the student has obtained the equivalent of 60 transferable semester credits with a GPA of 2.0 or better from regionally accredited college or university in the United States or from a university whose academic standing is recognized by the University of Hawaii and where English is the primary language of instruction

(g) the student has completed six years of full-time schooling with English as the medium of instruction at a middle school, high school, college, or university in Australia, Canada (except Quebec), Ireland, New Zealand, the United Kingdom, or the United States. Documentation of all six years is required.

Scores from the ELI placement test determine a student's placement into or exemption from the following EAP courses offered by the ELI:

ELI 70: Listening Comprehension I
ELI 80: Listening Comprehension II
ELI 72: Reading for Foreign Students
ELI 82: Advanced ESL Reading
ELI 73: Writing for Foreign Students
ELI 83: Writing for Foreign Graduate Students
ELI 100: Expository Writing: A Guided Approach

Depending on student enrollment, the number of sections offered for each course varies each semester. Typically, each section consists of 10 to 20 students. Additionally, each course is conducted throughout the 16-week semester and either meets for three 50-minutes sessions or two 75-minute sessions per week. Students who place into an intermediate course within a specific skill area (for example, ELI 72:Reading for Foreign Students), upon successful completion of that course, are required to subsequently take and successfully complete the advanced skill area course (in our example, ELI 82: Advanced ESL Reading). With the exception of ELI 100, all ELI courses are offered on a credit/no credit basis, and the credit received is not counted towards students' graduation credits.

The ELI Reading Program

Consistent with the overall goals of the ELI, the ELI Reading Program courses, ELI 72 and ELI 82, are designed to provide EAP reading support for students who are concurrently enrolled in UHM academic courses. As indicated in the ELI Reading Curriculum Philosophy,[1] the courses are intended to assist students in improving second language reading proficiency and academic reading skills, both areas important to successful study at the university level. More specifically, the courses are intended to provide students with "opportunities to develop their reading comprehension skills, reading fluency, academic vocabulary, and reading strategies." Although, currently, there are not clearly distinguished course goals for both ELI 72 and ELI 82, efforts are underway (these efforts including the present NA) to investigate and determine student academic reading needs differences, in order to establish such goals.

At the time this NA was conducted, the required materials for ELI 72 included the instructors' choice between (a) *Making Connections* (Pakenham, 1998), a textbook based on a content-based approach to the learning and practice of reading strategies, (b) *Changes* (Withrow, Brookes, & Cummings, 1996), a textbook focused on the integrated development of reading and writing skills, and (c) *Reading Strategies for Academic Success* (Day, Ono, & Harsch, manuscript in progress), a packet of EAP reading materials which provide instruction and practice of academic reading strategies. The required materials for ELI 82 included *Responding Voices* (Ford & Hughes, 1997), a collection of published and unpublished essays and articles based on general themes such as nature, health, and work. Instructors for the ELI reading courses are typically graduate students in the Second Language Studies MA and Ph.D. programs who have been awarded graduate assistantships to teach in the ELI.

Participants

[1] The ELI Reading Curriculum Philosophy was drafted by the ELI Reading Lead Instructor and based on instructor and administrative feedback. It will appear in the revised ELI Teacher's Manual, 2003.

Student participants. Out of the total 110 students enrolled in all ELI reading courses during the Spring 2002 semester, 109 students participated in this needs analysis by completing the ELI Reading Student Questionnaire. Table 1 presents the biographical data, collected from the "Background Information" portion of the questionnaire, for the 109 participants.

Table 1: *Biographical Data for ELI Reading Student Participants*

Class	*N* (%)	Academic Status	*N* (%)	Major	*N* (%)	Gender	*N* (%)	Resident Status	*N* (%)	L1	*N* (%)
ELI 72	21 (19%)	Graduate	19 (17%)	Natural Sci.	13 (12%)	Female	66 (61%)	Internat.	91 (83%)	CHN	24 (22%)
ELI 82	88 (81%)	Undergrad.	85 (78%)	Social Sci.	40 (37%)	Male	43 (39%)	Immigrant	15 (14%)	ENG	1 (1%)
		Other[1]	5 (5%)	Arts & Hum.	18 (17%)			NR[2]	3 (3%)	Hebrew	1 (1%)
				Bus/ICS/Math	20 (18%)					JPN	54 (50%)
				Engineering	6 (5%)					Khmer	1 (1%)
				Education	4 (4%)					KOR	16 (15%)
				Undecided/NR[2]	8 (7%)					LITH	1 (1%)
										Pohnpean	1 (1%)
										Romanian	1 (1%)
										Samoan	2 (2%)
										SLV	1 (1%)
										SPN	1 (1%)
										Tetun	1 (1%)
										Thai	2 (2%)
										NR[2]	2 (2%)
Total	109		109		109		109		109		109

[1] includes exchange students and no response

[2] No Response

Out of the total student participants in the study, 21 students were enrolled in ELI 72 (19%) and 88 students in ELI 82 (81%). This imbalance was due to the fact that only one section of ELI 72 was offered at the time of the study, whereas five sections of ELI 82 were offered. There were 66 female (61%) and 43 male (39%) participants. The majority were undergraduate students (78%) with a comparatively small group of graduate student participants (17%). A large number of participants indicated that they were Social Science majors (37%), with many others majoring in Business/ICS/Math (18%), Arts and Humanities (17%) and Natural Science (12%) academic disciplines. Most participants reported studying at the University of Hawaii with an international student status (83%). Additionally, the participants were predominately Asian, with half of the participants identifying Japanese as their first language (50%). Many participants also indicated Chinese (22%) and Korean (15%) as their first language.

Instructor participants. For the Spring 2002 semester, 4 instructors were responsible for teaching ELI reading courses. All four instructors were students participating in the Second Language Studies graduate MA or Ph.D. programs and had been awarded graduate assistantships to teach in the ELI. There were three female instructors and one male instructor, ranging from 25 to 29 years of age. Experience teaching in the ELI ranged from two semesters to four semesters, and all instructors had at least two semesters experience teaching ELI reading courses. Structured interviews were conducted with three of the instructors in order to investigate their perceptions of students' academic reading needs as well as the current design and implementation of ELI 72 and ELI 82 reading courses[2].

Materials

A questionnaire (see Appendix 1) was devised in order to investigate the reported academic reading needs of students enrolled in ELI 72 and ELI 82 courses during the Spring

[2]One ELI 72 instructor, the researcher of this needs analysis project, was eliminated as an actual participant in order to limit researcher bias.

2002 semester. The questionnaire was constructed to obtain information pertaining to (a) students' biographical information, (b) the frequency and perceived difficulty of various types of academic tasks performed in students' academic courses, (c) students' perceived difficulty of performing various types of reading-related skills, and (d) students' evaluation of their current ELI reading courses to meet their academic reading needs.

For responses to questionnaire items addressing academic reading tasks and specific reading skills, students were asked to select and consider their experience in the *one* academic course for which they had *the most difficulty with their reading assignments*. This measure was taken in order to avoid the limitations of eliciting general responses that were not course- and task-specific. Context-dependent responses are likely to produce data for which more accurate conclusions can be drawn (Kim, Kong, Lee, Silva & Urano, in press; Ferris & Tagg, 1996a, 1996b). It was determined that data reflecting students' experiences in the course for which they had the *most reading difficulty* would provide more reliable information concerning students' specific academic reading needs.

Additionally, careful considerations of the types of academic tasks and specific reading skills presented in the questionnaire were taken. As Horowitz (1986) and Johns (1981) point out, questionnaire items are often pre-selected based on researcher intuition and, thus, data may not clearly reflect what respondents actually *do* in contexts addressed in the needs analysis. Gathering information to form the basis of questionnaire items through unstructured interviews with a random sample of the target population and/or domain experts would ensure greater validity of the data (Horowitz, 1986; Johns, 1981; Long, in press; Kim, et.al, in press). Unfortunately, due to time and resource constraints, those measures were not possible for the present NA. However, in their task-based NA of the entire University of Hawaii ELI student population during the Spring 1999 semester, Kim, et.al. (in press) performed unstructured

interviews with a stratified random sample of ELI students ($n = 22$) to select the academic tasks presented in their NA student questionnaire. Those academic tasks that involved reading were selected for the present NA student questionnaire. Additionally, other previously published and unpublished NAs and various taxonomies of reading skills were reviewed in order to select tasks and skills considered to be relevant to ELI students' academic reading task and skill demands (Horowitz, 1986; Loschky, Stanley, Cunha, & Singh, 1987; Asahina, Bergman, Conklin, Guth, & Lockhart, 1988; Grabe, 1986). For additional feedback, a second language testing and curriculum development specialist, Professor J.D. Brown, the ELI Assistant Director, and the ELI Lead Reading Instructor reviewed the questionnaire and most suggestions were incorporated.

Procedures

Student questionnaire. ELI instructors were provided with copies of the questionnaire to administer to their students during the 13th week of the Spring 2002 semester. Instructors were also provided with a form letter indicating that it was up to the instructors' discretion whether to provide class time for the completion of the questionnaire or to ask students to complete it at home. Additionally, instructors were asked to emphasize that responses were completely confidential and in no way would affect students' grades in the course. Completed questionnaires were returned to the researcher during the 15th week of the semester for analysis.

Instructor interviews. Out of the three ELI reading instructor participants, 1 interview was based on the instructor's past experience teaching the intermediate ELI reading course, ELI 72. The remaining two interviews were based on the instructors' experiences teaching the advanced ELI reading course, ELI 82. Interview questions (see Appendix 2) were primarily designed to elicit information concerning (a) the instructor's goals, design and implementation of their ELI reading courses, (b) the instructor's perceptions of their students' academic reading

needs, and (c) any issues or concerns the instructor had concerning the instruction of the course. The ELI Assistant Director, the ELI Lead Reading Instructor, and Professor J. D. Brown reviewed the questions and their suggestions were incorporated.

The researcher conducted interviews with individual instructors during the 14th and 15th weeks of the semester. Each interview lasted between 45 to 60 minutes, was audiotaped, and later transcribed for analysis.

Analysis

Student questionnaire. For quantitative items, responses were coded for statistical analyses and stored in a computer database. Because the *missing response rate* per questionnaire item was relatively low (3.3% per item), missing responses were filled in using the average score for that particular item. Subsequently, using *SPSS Graduate Pack 11.0 for Windows*, one-way analyses of variance (ANOVAs) were conducted to investigate possible main effects for the dependent variables (i.e., types of materials, task frequency, task difficulty, difficulty with reading skills, and usefulness of various components of the ELI reading courses). Follow-up pair-wise Lease Significant Differences (LSD) comparisons were conducted to examine any main effects found to be significant further. Additionally, two-way ANOVAs were conducted to examine significant interactions that may have existed between target subgroups and each dependent variable. Finally, a factor analysis was employed to investigate student questionnaire items and make suggestions for suitable revisions for the improvement of future needs analysis. A conservative significance level of $\alpha < .01$ was set for this study due to the use of multiple analyses.

For open-ended questionnaire items, responses were transcribed and the content of each item categorized according to *response-type*, which was based on the specific issues or concerns

addressed in the response. Subsequently, the frequencies of the various response-types for each item were tallied.

Instructor interviews. The audio-taped interview were transcribed, however, due to the limited number of instructor participants ($n = 3$), it was impossible to categorize and quantify response-types. Therefore, the results of the instructor interviews will consist of the key issues that concern the current design and implementation of ELI 72 and ELI 82 reading courses and that are relevant to the academic reading needs of the students placed or promoted into these courses.

RESULTS

Table 2 provides the descriptive results for responses concerning (a) students' total amount of academic reading per week, (b) types of courses that students report having the *most difficulty* with their reading assignments, and (c) the amount of academic reading per week for that selected NA course.

Table 2. Reading amount and selected NA course data

Total Reading Amount per Week	*N* (%)	Academic Field of Selected Course	*N* (%)	Selected NA Course Reading Amt. per Wk.	*N* (%)
0-25 pgs.	22 (20%)	Natural Sci.	21 (19%)	0-25 pgs.	34 (31%)
26-50 pgs.	27 (25%)	Social Sci.	34 (31%)	26-50 pgs.	43 (39%)
51-75 pgs.	17 (16%)	Art & Hum.	25 (23%)	51-75 pgs.	13 (12%)
76-100 pgs.	16 (15%)	Bus/ICS/Math	18 (17%)	76-100 pgs.	7 (6%)
101-125 pgs.	11 (10%)	Engineering	4 (4%)	100+ pgs	9 (8%)
126-150 pgs.	5 (6%)	Education	2 (2%)	NR[1]	2 (2%)
151-175 pgs.	4 (4%)	NR[3]	5 (5%)		
176-200 pgs.	1 (1%)				
200+ pgs.	6 (6%)				
Total	109		109		109

[3] NR = No Response

Most students indicated that they read less than 125 pages per week for all academic courses combined (76%), with 26 – 50 pages being the response selected most (25%). Social Sciences (31%) and Arts and Humanities (23%) courses were selected as the top two types of courses that pose the most reading difficulty. Of course, this response was dependent on the variability in the types of courses in which students were enrolled at the time of this study. For the selected NA course, most students reported reading less than 75 pages per week (83%), with 26 – 50 pages being the response selected most (39%).

Types of Materials (RQ #1)

Descriptive statistics for the types of reading materials students reportedly use in their academic courses are presented in Table 3 and the means are graphically represented in Figure 1. Additionally, the results of the one-way ANOVA investigating the mean differences are presented in Table 4.

Table 3: Descriptive statistics for the types of materials used

Materials (Question #)	*M*	*SD*	*N*
Textbooks (16a)	3.56	1.20	109
Academic Journals (16b)	2.07	1.09	109
Novels (16c)	1.48	0.88	109
Magazines (16d)	1.63	0.90	109
Newspapers (16e)	1.67	0.85	109
Internet Sources (16f)	2.39	1.18	109

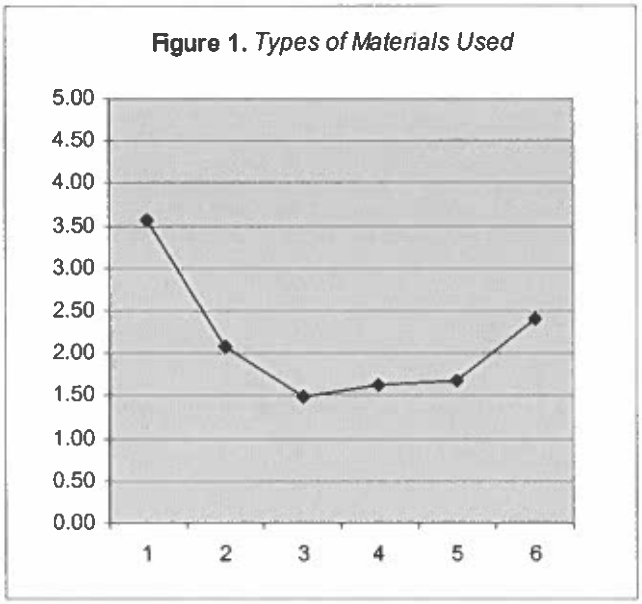

Figure 1. *Types of Materials Used*

Table 4: Results of one-way repeated measures ANOVA – Material Use

Source	*SS*	*df*	*MS*	*F*	*p*	eta squared	power
Within-subjects Effects							
Material Use	172.97	3.67	47.10	38.35	0.00	.26	1.00
Error	482.61	392.93	1.23				

A statistically significant main effect was found for Material Use ($df = 3.67$, $F = 38.35$, $p = .000$). These results indicate that students use certain types of reading materials significantly more often than others in their academic courses. Follow-up pair-wise LSD comparisons of the mean differences revealed that the use of textbooks ($M = 3.56$) was significantly higher than all other reading materials ($p = 0.00$). Additionally, the use of internet sources ($M = 2.39$) was significantly higher than novels, magazines and newspapers; whereas, the use of academic journals ($M = 2.07$) was significantly higher than novels and newspapers.

With regards to the target sub-groups of ELI students, no statistically significant differences were found. This result is not surprising considering that the types of reading

materials that instructors utilize in their courses are most likely not dependent on differences within the student population of a given course.

Frequency of Tasks (RQ #2)

Descriptive statistics for the frequency of different types of tasks involving reading that students perform in their academic courses are presented in Table 5 and the means are graphically represented in Figure 2. The results of the one-way ANOVA examining mean differences are presented in Table 6.

Table 5: Descriptive statistics for the frequency of tasks

Tasks (Question #)	*M*	*SD*	*N*
Follow and understand a lecture (17a)	3.60	1.18	109
Take a midterm or final exam (17b)	3.77	1.18	109
Take a quiz (17c)	2.80	1.55	109
Write a summary of the text (17d)	2.04	1.15	109
Write a reaction paper (17e)	1.92	1.14	109
Write a research paper (17f)	2.06	1.24	109
Participate in a discussion (17g)	2.37	1.36	109
Give a presentation (17h)	1.94	1.17	109
Answer comp. questions based on text (17i)	2.44	1.27	109
Research (search for information in the library or on the internet) (17j)	2.05	1.21	109
Understand lab instructions to perform experiments (17k)	1.94	1.20	109

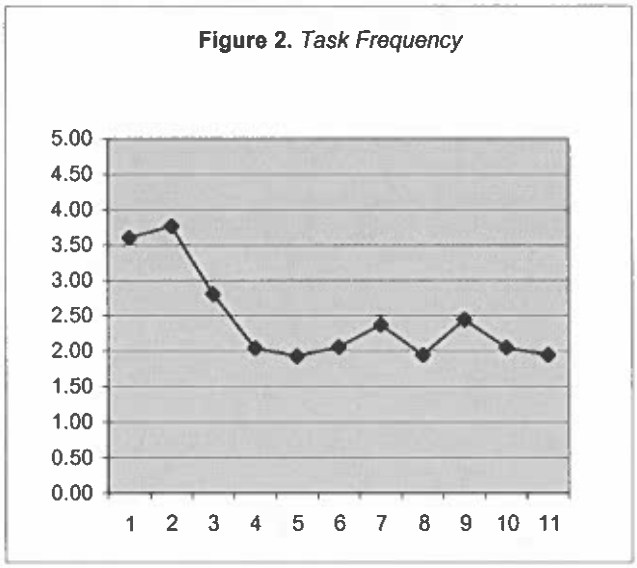

Table 6: Results of one-way repeated measures ANOVA – Task frequency

Source	*SS*	*df*	*MS*	*F*	*p*	eta squared	power
Within-subjects effects							
Task Frequency	487.75	6.91	70.53	38.40	0.00	.26	1.00
Error	482.61	392.93	1.23				

A statistically significant main effect was found for Task Frequency ($df = 6.91$, $F = 38.40$, $p = .000$). These results indicate that students perform certain types of tasks that involve reading more frequently than others in their academic courses. Follow-up pair-wise LSD comparisons of these means indicated that reading for the purpose of taking a final exam or midterm ($M = 3.77$) and understanding a lecture ($M = 3.60$) were significantly higher than all other tasks. Statistically significant differences for task frequency between target sub-groups of ELI students were not found.

Perceived Task Difficulty (RQ3)

Descriptive statistics for the perceived difficulty of tasks (involving reading) that are performed in students' academic courses are presented in Table 7 and the means are graphically

represented in Figure 3. The results of the one-way ANOVA examining mean differences are presented in Table 8.

Table 7: Descriptive statistics for perceived difficulty of tasks

Tasks (Question #)	*M*	*SD*	*N*
Follow and understand a lecture (18a)	2.87	0.99	100
Take a midterm or final exam (18b)	3.31	1.08	99
Take a quiz (18c)	2.81	1.04	70
Write a summary of the text (18d)	2.67	1.02	57
Write a reaction paper (18e)	2.73	1.06	49
Write a research paper (18f)	3.10	1.10	51
Participate in a discussion (18g)	2.81	1.16	63
Give a presentation (18h)	3.19	1.10	47
Answer comp. questions based on text (18i)	2.74	0.90	69
Research (search for information in the library or on the internet) (18j)	2.74	1.00	53
Understand lab instructions to perform experiments (18k)	2.50	0.93	44

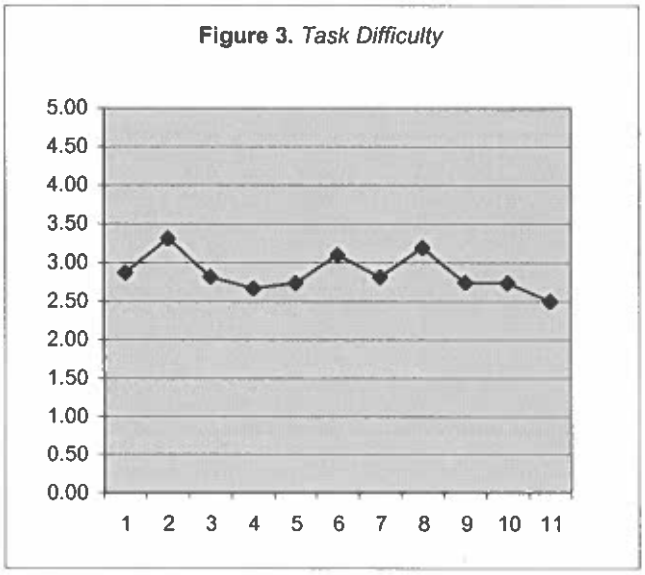

Table 8: Results of one-way repeated measures ANOVA – Task difficulty

Source	*SS*	*df*	*MS*	*F*	*p*	eta squared	power
Within-subjects effects							
Task Difficulty	13.89	4.81	2.89	2.30	0.06	0.13	0.45
Error	90.65	72.16	1.26				

For task difficulty, a statistically significant main effect was not determined ($df = 4.81$, $F = 2.30$, $p = 0.06$). Additionally, no significant differences were found for target sub-group populations. These results might be primarily due to the design of the task difficulty items to directly correspond with students' reported frequency in performing those tasks in the selected academic course. In the task difficulty questionnaire prompt, students were asked to skip task difficulty questionnaire items for tasks the student does not perform in the selected academic course. In other words, if a student indicated "not at all" when asked about the frequency of performing a certain task, the student was asked to refrain from providing a task difficulty rating for that same task. As a result those that had a response for *all* task difficulty items, could be included in the one-way ANOVA analysis ($n = 17$).

Based on observation of the descriptive statistics for Task Difficulty, reading for the purpose of taking a midterm or final exam ($M = 3.31$), giving a presentation ($M = 3.19$), and writing a research paper ($M = 3.10$) were perceived as being more difficult than other tasks involving academic reading. The least difficult tasks were reported to be reading for the purpose of understanding lab instructions ($M = 2.50$) and writing a summary of a text ($M = 2.67$).

However, caution in interpreting the reported perceived difficulty of reading to perform academic tasks must be taken. Although students were asked to consider the difficulty of *reading* in order to perform a task, it is possible that students provided a rating for the difficulty of performing the actual task. For example, a student may have rated giving a presentation as

more difficult due to his/her lack of presentation skills or fear of presenting, rather than reading for the purpose of giving a presentation. In the future, task difficulty may be more appropriately assessed and examined through random follow-up interviews with students.

Difficulty with Reading Skills (RQ #4)

Descriptive statistics for students' perceived difficulty with specific reading skills are presented in Table 9 and the means are graphically represented in Figure 4. The results of the one-way ANOVA examining mean differences are presented in Table 10.[4]

Table 9: Descriptive statistics for perceived difficulty of reading skills

Skills (Question #)	*M*	*SD*	*N*
Understanding the main ideas (20a)	2.28	1.03	109
Understanding details (20b)	2.81	1.03	109
Understanding at the sentence level (20c)	2.38	0.90	109
Understanding at the paragraph level (20d)	2.50	0.94	109
Quickly finding certain info (scanning) (20e)	2.46	1.07	109
Quickly reading for general understanding (skimming) (20f)	2.47	1.08	109
Reading speed (20g)	2.98	1.19	109
Understanding general vocabulary (20h)	2.85	1.04	109
Understanding technical vocabulary (20i)	3.32	1.07	109
Recognizing the author's purpose (20j)	2.54	0.99	109
Recognizing the difference between facts and opinions (20k)	2.50	0.95	109
Guessing the meaning when it is not stated directly in the text (20l)	2.69	0.98	109
Interpreting visual aides (20m)	2.00	0.83	109
Connecting meaning of the text with my own knowledge of the topic (20n)	2.39	0.86	109
Using a dictionary (20o)	2.10	1.13	89

[4] Item 20o was not included in the one-way ANOVA due to the large number of participants ($n = 20$) who did not respond to this question.

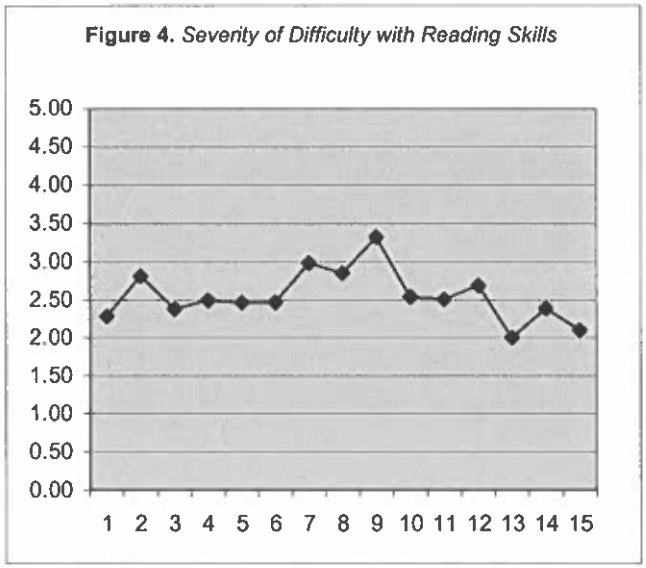

Figure 4. *Severity of Difficulty with Reading Skills*

Table 10: Results of one-way repeated measures ANOVA – Skill difficulty

Source	*SS*	*df*	*MS*	*F*	*p*	eta squared	power
Within-subjects effects							
Skill Difficulty	9.55	9.55	15.92	19.34	0.00	.15	1.00
Error	848.77	1031.32	.82				

A statistically significant main effect for Skill Difficulty was found ($df = 9.55$, $F = 19.34$, $p = 0.00$). These results indicate that some reading skills were reported to be significantly more difficult than others. Follow-up pair-wise LSD comparisons revealed that understanding technical vocabulary ($M = 3.32$) was significantly higher than all other reading skills. Additionally, understanding general vocabulary ($M = 2.85$) and reading speed ($M = 2.98$) were also identified as significantly more problematic than the majority of reading skills. Statistically significant differences for target sub-groups of ELI students were not found.

Evaluation of ELI Reading Course Components (RQ #5)

ELI reading course evaluation close-ended items. Students' evaluation of their ELI reading course to meet their academic reading needs was assessed by means of both close-ended

and open-ended questionnaire items. Although the student participants were enrolled in different ELI reading courses, which varied according to level (intermediate and advanced), materials, activities and instructor, statistical analysis for course component evaluation revealed no significant differences for target sub-groups of ELI reading students -- this included those students enrolled in ELI 72 in comparison to those taking ELI 82. Because no differences between these particular subgroups were determined, close-ended response results for the evaluation of ELI 72 and ELI 82 course components will be presented together. Additionally, although an analysis of results obtained from each section of the ELI 82 course would better account for instructional differences which may influence the data, it is beyond the scope of this paper to do so at this time.

Descriptive statistics for students' evaluation of various ELI reading course components are presented in Table 11 and the means are graphically represented in Figure 5. The results of the one-way ANOVA examining mean differences are presented in Table 12.

Table 11: Descriptive statistics for the evaluation of ELI reading course components

Reading Course Components (Question #)	*M*	*SD*	*N*
Follow and understand a lecture (22a)	2.94	0.98	109
Take a midterm or final exam (22b)	3.42	1.01	109
Take a quiz (22c)	2.98	0.96	109
Write a summary of the text (22d)	2.72	0.96	109
Write a reaction paper (22e)	3.00	0.95	109
Write a research paper (22f)	2.74	0.98	109
Participate in a discussion (22g)	3.37	0.97	109

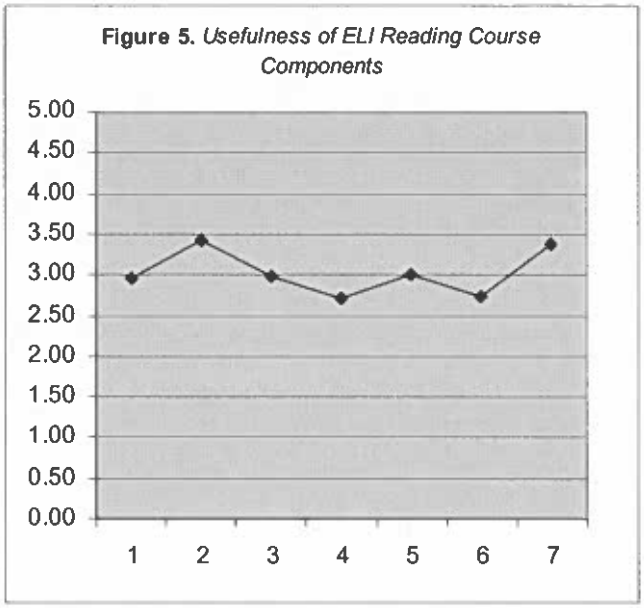

Table 12: Results of one-way repeated measures ANOVA – ELI course components

Source	*SS*	*df*	*MS*	*F*	*p*	eta squared	power
Within-subjects effects							
ELI Course	49.99	5.26	9.50	19.66	0.00	0.15	1.00
Error	274.64	568.04	0.48				

For close-ended items assessing students' perceived usefulness of various ELI reading course components, a statistically significant main effect was found ($df = 5.26$, $F = 19.66$, $p = .000$). Follow-up pair-wise LSD comparisons revealed that instructors' lectures ($M = 3.42$) and additional materials provided by the instructor ($M = 3.37$) were significantly higher than all other ELI reading course components. As previously mentioned, no significant differences in responses for target sub-groups of ELI reading students were found.

It should be noted that the means for all items tended to be relatively high (all above the 2.50 median), which could indicate that students, for the most part, found ELI reading course components to be useful. Alternatively, students may have been apprehensive in being too critical since they were asked to evaluate a course still in progress. Although the students were

reassured that their responses would be confidential and not affect their course grade, there is still the possibility that submitting the completed questionnaire to their ELI reading course instructor might have influenced the data.

ELI reading course evaluation open-ended items. Because the open-ended questionnaire items solicited responses that were specific to the students' current ELI reading course curriculum, results for these items will be discussed according to the level of ELI reading course (ELI 72 or ELI 82) the student participant was taking at the time of completing the questionnaire. It is beyond the scope of this project and paper to attempt an analysis of the open-ended responses according to the different sections of ELI 82 or for the target sub-groups of ELI reading students.

Each of open-ended questionnaire items was analyzed and quantified according to response-type. For each item, there were several instances where (a) there was no response, (b) the response was not related to the question, or (c) it was difficult to interpret the meaning of the response. A general description of only the most frequent types of responses for both ELI 72 and ELI 82 respondents will be presented here.

For the *ELI 72 Reading Course,* unfortunately, the results were somewhat confounded by the limited number of ELI 72 student participants ($n = 21$) and missing responses to questions. These problems may be a result of the intermediate ELI reading students' limited English proficiency -- an issue that will be examine in the factor analysis, which is to follow. Future needs analysis research of this sort may benefit from seeking more detailed information through follow-up student interviews with specific questions based on questionnaire open-ended results.

Despite these hindrances, several key issues concerning the ELI 72 course curriculum and course implementation were raised in students' responses. First, students named the "Reading Circle" activity to be the most useful activity experienced in the ELI 72 course ($n = 8$).

This activity consisted of a weekly in-class small group discussion of an article related to a general theme (such as health, sports, food, etc.) selected and prepared by a fellow group member. Students favoring this activity reported that it was useful because they could read and discuss different types of texts. Additionally, students indicated that being the "Reading Circle Leader", the group member in charge of preparing the weekly article, was helpful in improving their research skills. In addition to the Reading Circle activity, the in-class activities designed to improve reading speed were also rated as very useful ($n = 4$), however, no concrete reasons were provided.

When asked how the ELI 72 is *not* meeting students' academic reading needs, there were a relatively high number of missing responses and responses that were difficult to interpret ($n = 10$). As some students indicated in their response to this question, this may be due to the complicated wording of the question and, as a result, students were unable to comprehend or adequately answer the question. Nonetheless, several respondents indicated that the course was "too easy" and should be more challenging ($n = 3$). An equal number of students indicated that the course was satisfactory and useful in improving their reading abilities ($n = 3$).

When asked for suggestions on how to improve the ELI 72 course, one of the most frequent responses was to increase the use of activities that help students to learn and memorize difficult vocabulary ($n = 3$). Additionally, several students indicated their desire to read different types of "interesting" texts, such as novels ($n = 3$) and newspapers or magazines ($n = 2$).

For the *ELI 82 Reading Courses*, student participants ($n = 88$) identified the most useful activities to be those designed to increase reading speed ($n = 20$). Students indicated that such activities were effective in increasing reading speed, helped to improve comprehension of texts, and were beneficial to improving reading performance in their academic courses. Additionally, similar to the ELI 72 student responses, the Reading Circle activity was also identified as a

useful ELI 82 in-class activity (n = 14). Several students mentioned that they enjoyed the group discussions and acting as the group leader was useful in improving research skills. Other useful ELI 82 activities included the instruction and practice of reading strategies (n = 12) and methods of learning new vocabulary (n = 9).

When asked how ELI 82 is *not* meeting their academic reading needs, the majority of those that responded indicated that, in some way, the course did not directly apply to the reading demands of students' academic reading courses (n = 26). A variety of specific reasons were provided, some of which were as follows:

- ELI 82 readings are not academic texts, so they differ from academic course readings
- ELI 82 readings are easier than academic course readings
- ELI 82 readings are more difficult than academic course readings
- The course does not fit graduate students' academic reading needs
- The course does not help to improve academic reading abilities
- Students are unable to use their academic course materials in the ELI 82 course
- The ELI 82 course is too easy compared to other academic courses

When asked for suggestions on how to improve the ELI 82 course, the majority of responses addressed changing the amount and types of readings assigned in the course. Some of the specific answers were as follows:

- Course readings should include newspapers, magazines and novels
- Course readings should include more academic texts
- Students should use their own academic course readings in the ELI 82 course
- Change the textbook
- Students should read more in the ELI 82 course

Other suggestions for improvement concerned the types of activities performed in the ELI 82 reading course (n = 24). Specific responses included:

- Discuss and practice reading strategies more
- Assign fewer writing assignments
- Assign less homework in general
- Provide more reading speed activities
- Provide more vocabulary learning activities
- Provide more activities to help students in their academic courses

Perceived Reading Needs and ELI Reading Course Design and Implementation (RQ #6)

Results for both the ELI 72 instructor interview ($n = 1$) and ELI 82 instructor interviews ($n = 2$) will be presented in terms of the following three dominant themes which emerged from the interviews and are relevant to this needs analysis project: (a) the instructors' perceptions of students' reading needs and subsequent design and implementation of his/her ELI reading course, (b) issues or concerns the instructors expressed regarding their ELI reading courses, and (c) the instructors' suggestions for improving the ELI reading courses.

ELI 72 Instructor Interview. The ELI 72 instructor identified several key deficiencies in students' reading abilities that influenced the instruction of her ELI 72 reading course. First, she noted that, compared to ELI 82 students, the level of English proficiency among ELI 72 students was considerably lower. She observed that students tended to read "word-by-word" and, therefore, had difficulty "seeing the big picture" while reading a passage. Students had a tendency to focus and become distracted by words or concepts they did not understand, which severely hindered their reading fluency. In order to build reading fluency, the instructor primarily focussed on vocabulary building activities and drills designed to increase reading speed in her course. Additionally, she felt that students needed instruction and practice of "basic reading strategies", such as skimming, scanning, and finding the main idea, in order to help them become familiar with processes involved with academic reading.

The instructor identified the students' extremely low level of English ability as the primary difficulty she experienced in teaching the ELI 72 course. Students' relatively low English proficiencies caused communication difficulties at times, with students not understanding basic instructions for activities and being hesitant to ask questions when they did not understand. As a result, the instructor spent much time "providing explicit guidance" which, in turn, slowed the pace of the course. Additionally, the instructor noticed a large disparity

between the English abilities of students who transferred from other local academic institutions[5] versus other students in the course. She mentioned that "when I asked them to do the exercises, they struggled and weren't at the same level as the other students… their vocabulary level seemed much lower than other students… this was a major issue in my class."

When asked how she would improve the course if she were to teach it again, the instructor mentioned that she would introduce students to a greater variety of academic texts. In addition, she would incorporate more "awareness raising activities" to assist students in applying and reflecting on reading strategies that they learn in ELI 72 to the students' own academic readings. She also indicated the need for more vocabulary work, suggesting that vocabulary quizzes might encourage students to engage in the active learning of new vocabulary items.

For the improvement of the ELI reading program as a whole, the instructor indicated that the ELI 72 and ELI 82 course goals should be more specific. This would help to distinguish the curriculum between the two courses and allow instructors, especially new ELI reading instructors, to be better prepared when designing the syllabus and lesson plans.

ELI 82 Instructor Interviews. Both ELI 82 instructors interviewed for this NA project expressed similar approaches to teaching ELI 82 and similar concerns they experienced in teaching the course. They identified improving students' overall academic reading efficiency as a primary reading need for ELI 82 students. One instructor noted that "they just read in the same way, that's why I focus on how to change their ways of reading depending on the goals, depending on the types of materials…" Both instructors sought to build students' reading efficiency through the instruction and practice of reading strategies. Practice of the strategies was typically followed-up by meta-awareness activities where students applied the strategies to their academic course readings and then reflected, through writing or discussion with fellow

[5] *Transfer students* refers to those who have received enough academic credits to be admitted into the university without needing a TOEFL score, however do not have enough transferable credits to be exempt from ELI courses.

students, about the experience. Such activities were intended to not only help students strengthen their academic reading skills, but also allow students to "know what their (reading) problems and weakness are and know how to cope with them". Additionally, to meet students' reading needs, the instructors indicated that activities designed to improve reading comprehension, critical reading skills, and vocabulary knowledge were strong components of their course curriculum.

In terms of issues or concerns the instructors had while teaching the course, both indicated the need to change the required course materials, *Responding Voices* (Ford & Hughes, 1997).[6] Because the book is a collection of essays, short stories and poems and is primarily intended to assist students improve their writing skills, the instructors indicated that it was difficult to use in an advanced EAP reading course. Along similar lines, both instructors mentioned being unable to turn to one solid EAP reading resource for appropriate and effective teaching materials. Instead, they utilized a variety of resources, such as self-created materials, internet sources, and EAP textbooks, to incorporate different texts and activities into the course curriculum.

The difference in the academic reading needs between graduate and undergraduate students was another concern identified by both instructors. One instructor observed that the difference is not necessarily in reading ability, but in what the students *want to do* – "The grad students have less patience in doing anything that isn't directly related to what they're studying." The other instructor indicated that, although it would be ideal to have a separate course for graduate students to meet their "totally different" reading needs, at this time it might not be possible because of the relatively small number of graduate students taking ELI 82.

---

[6] During the process of this needs analysis project, the ELI reading instructors, with the support of the ELI administration, decided to change the required ELI 82 course materials for the Fall 2002 semester. The new required textbook for ELI 82 is *Guide to College Reading* (2003).

When asked how they would change the course if teaching it again, the instructors primarily indicated changing the required textbook. Additionally, one instructor mentioned that she would work more on "finding the main idea" of passages earlier in the semester and spend more time on critical reading skills as well.

Similar to the ELI 72 instructor, the ELI 82 instructors noted the need to revise and clarify course goals. One instructor summed up the issue by mentioning, "It's good to have (course) goals… what we do in our daily classes isn't based on anything, it's based on each instructor's philosophy. But that's not consistent and may not be appropriate. So we need to have some bridge between abstract curriculum and activities… goals and sets of activities would be useful".

Investigation of the Student Questionnaire Variance

A factor analysis was conducted in order to (a) strengthen the interpretative power of results obtained from closed-ended student questionnaire responses, and (b) identify problematic questionnaire items so that proper revisions can be suggested for future needs analyses that may employ such a measure. A careful examination of the scree plot and results obtained with an Eigen value set at 1.00 indicated that a six-factor solution fit this data. A VARIMAX rotation was then performed, the results of which are presented in Table 13.

Table 13: VARIMAX rotation for the six-factor solution

	1	2	3	4	5	6	*H(sq.)*
Materials							
16a	.157	.111	.004	-.425	**.653***	-.017	.644
16b	.016	.059	**.573***	.132	.187	.035	.386
16c	.001	-.028	.207	.038	.191	**-.676***	.539
16d	-.133	.184	.094	**.740***	-.149	-.120	.645
16e	-.247	.150	.164	**.630***	-.084	-.154	.538
16f	-.134	.211	.288	**.555***	.070	.011	.458
Task Frequency							
17a	-.076	.126	.161	-.236	**.658***	-.068	.541
17b	.087	.045	-.053	.189	**.761***	-.059	.631
17c	.043	-.001	.065	**.567***	.510 *	-.141	.608
17d	-.158	-.030	**.489***	.441 *	.001	-.002	.459
17e	.111	-.008	**.468***	.269	-.208	-.206	.389
17f	.106	-.013	**.742***	.074	.129	.117	.598
17g	.147	-.034	**.718***	-.074	-.070	-.275	.624
17h	-.094	-.038	**.842***	.060	-.006	.044	.725
17i	.026	-.006	.232	.251	.040	**-.581***	.457
17j	-.085	.109	**.756***	.127	-.073	-.011	.612
17k	-.190	-.143	.219	**.510***	-.027	.061	.369
Reading Skills							
20a	**.698***	-.088	.145	-.314*	.032	-.084	.623
20b	**.760***	-.052	-.026	-.281	-.055	-.015	.663
20c	**.630***	.201	.137	-.398*	-.046	-.269	.689
20d	**.754***	.101	.073	-.350*	-.081	-.020	.714
20e	**.777***	.019	.058	.017	-.069	.104	.624
20f	**.801***	-.022	-.015	-.128	-.045	.212	.706
20g	**.642***	-.039	-.162	-.035	.190	-.016	.478
20h	**.674***	.163	-.185	.166	.129	-.019	.560
20i	**.607***	-.169	-.174	-.061	.128	.073	.453
20j	**.551***	-.007	.149	.178	.224	.449*	.609
20k	.360*	.038	.313*	-.030	.027	**.644***	.645
20l	**.480***	.028	.293	.064	-.045	.400*	.483
20m	**.415***	.169	.186	-.109	-.324*	.367 *	.487
20n	**.540***	.126	.225	-..271	-.240	.309*	.585
20o	**.428***	.118	.204	-.410*	.088	.170	.443
ELI Evaluation							
22a	.062	**.810***	.195	-.048	.052	.042	.704
22b	.064	**.829***	-.096	-.152	.195	.036	.763
22c	.181	**.726***	.054	.079	-.007	-.013	.569
22d	-.098	**.858***	-.057	.053	-.054	.013	.754
22e	-.054	**.827***	.137	.001	.006	.131	.723
22f	-.047	**.665***	-.057	.168	-.106	-.165	.514
22g	-.008	**.745***	-.078	.079	.180	.070	.605
Proportion of Var.	.162	.122	.098	.084	.057	.051	.574
Cumulative %	16.191	28.238	38.209	46.637	52.340	57.422	

* = loadings over +/- .300
bold = highest loading for a particular item

Perhaps the clearest results are evident for the ELI EVALUATION items, all which load heaviest on Factor 2. Because no other items load on this factor, it may be safe to assume that

Factor 2 is related to students' evaluation of various ELI course components. Additionally, the results for READING SKILLS are convincing as well, with the majority of these items loading heaviest on Factor 1. However, it should be noted that items *20j – 20n* also load above .300 on Factor 6, with *20k* being the only item loading heaviest on this factor. Considering that, aside from these READING SKILL items, no other variable loaded positively on Factor 6, one explanation for these results may be that questionnaire respondents perceived reading skills identified in items *20j-20n* to be somewhat different from the others. Based on observation, in comparison to the other reading skills, items *20j-20n* do seem to involve skills more related to *critical reading* processes. Although it is beyond the scope of this paper to present a detailed exploration of this issue, future EAP reading NA questionnaires presenting a taxonomy of reading skills may benefit from a careful investigation and possibly separation (based on *purpose* and/or *level of difficulty*) of the skills presented.

The variables, MATERIALS and TASK FREQUENCY, yielded more complicated results, most likely because the types of reading materials students use in their academic courses closely correspond to the types of academic tasks they are required to perform. Additionally, student population differences (i.e., graduate/undergraduate, different majors, etc.) may have also influenced the variance between these two variables. Because MATERIALS and TASK FREQUENCY share loadings on the same 3 factors (Factor 3, Factor 4, and Factor 5), it may be useful to examine their results holistically to determine any possible patterns of variance which these variables may exude. The first important observation to note is that *16a* (textbook), the academic reading material used significantly most often compared to all other materials, loaded heaviest on Factor 5. Additionally, *17a* (read to follow a lecture) and *17b* (read to take a midterm/final exam), both rated as significantly higher than all other academic tasks, also loaded heaviest on Factor 5. With no other items loading positively on this factor, it could be the case

that Factor 5 is related to the *most typical* academic reading contexts, which provides indication that the variables MATERIALS and TASK FREQUENCY should not be considered independent.

The loadings for Factors 3 and 4 are slightly more difficult to interpret. Although the majority of the TASK FREQUENCY items loaded heaviest on Factor 3, several loaded on Factor 4. In contrast, the majority of the MATERIALS items loaded heaviest on Factor 4, with one item loading heaviest on Factor 3. To determine the extent to which target subgroup differences may have given rise to this pattern, the item response means for these groups were examined. Interestingly, those items that loaded particularly high (above .700) for TASK FREQUENCY, which include *17f-17h* and *17j*, were also the only tasks which graduate students reported performing more often than undergraduate students. Similarly, item *16b* (journal articles) loaded on Factor 3 and was rated higher by graduate than undergraduate students. However, *16f* was rated slightly higher by graduate students, yet loaded on Factor 4, and *17d* and *17f* were both rated higher by undergraduates, yet loaded just above .300 on Factor 3. These varied results prevent definite claim that Factor 3 may be related to academic standing, however, there does seem to be a hint of an emerging pattern. Perhaps questionnaire items consisting of more detailed descriptions of the tasks which graduate and undergraduates typically perform, and academic reading materials they commonly use, may sift out factors which possibly influenced the responses in the present study.

Lastly, it is important to note that both *16c* (novels) and *17i* (reading and answering comprehension questions) did not load positively on any of the 6 factors. In fact, they both loaded negatively on Factor 6, a factor earlier hypothesized to be related to critical reading skills. Again, these results are difficult to interpret, however, it may be that lack of any positive loading for these items may suggest that they do not pertain to the reading contexts students encounter in

their academic courses. This is an explanation in need of further investigation, but, if determined to hold some truth, would offer a bit of irony considering that *reading to answer comprehension questions* is a notoriously common reading activity in EFL/ESL/EAP learning contexts.

DISCUSSION

If using certain types of reading materials in EAP reading courses which are commonly used in academic courses is deemed important for improving academic reading abilities (Long & Crookes, 1992; Shih, 1992), then the *task frequency* close-ended student questionnaire responses suggest that academic genre, such as textbooks and journal articles, should be selected for instructional purposes over non-academic genre, such as novels, magazines and newspapers. These results may contradict what students report they *want* to read in their EAP courses, as indicated by the students' open-ended responses. However, what may be 'interesting' and 'fun' to read, may not provide students with the appropriate level of text necessary to improve academic reading abilities. Thus, it is recommended that reading selections for ELI reading courses represent frequent types of texts used in academic courses, such textbooks, internet sources, and journal articles, as implied by the results of this study. Additionally, instructors should clarify and inform students of the rationale supporting academic text selection so that they are aware of the purpose for using such texts in their EAP courses.

Furthermore, although not statistically significant, the results of the target sub-group analysis for *types of materials* revealed a tendency for graduate students to encounter academic journal article reading material in their content courses more frequently than undergraduate students. These results are consistent with Ostler's (1980) findings where, in a survey conducted among an American university EAP student population, graduate students reported the need to use skills specific for reading academic journal articles more so than undergraduate students. Furthermore, in this study, both ELI 82 instructors also acknowledged a noticeable difference

between graduate and undergraduate students' reading needs. This suggests that the ELI reading curriculum, whenever possible and especially at the advanced level, should accommodate and address the special needs of graduate students' academic reading demands. Additionally, if the ELI reading graduate student population increases, the ELI administration may want to consider offering a reading course specifically for graduate students.

Currently, the ELI reading program curriculum is predominantly skill and strategy based, with instructional efforts to raise students' meta-cognitive awareness concerning the application of skills and strategies while reading for their content courses. Without proper testing to measure the effects of instruction, it is difficult to advocate one type of instructional approach over another. However, previously reviewed literature suggests that an isolated skills and strategies based approach, particularly for advanced EAP learners, may not allow for the practice and acquisition of reading skills in the context for which they will be expected to perform. Long & Crookes (1992) among others (Shih, 1992; Carrel & Carson, 1997) argue that second language curriculum be based on the actual tasks students will be required to perform with the language. If the ELI reading program were to adopt such an approach, the results of this NA for *task frequency* strongly suggest that the curriculum include the incorporation of tasks involving reading to take a midterm or final exam and reading in order to follow a lecture. Of course, the specific types of exams (whether essay, multiple-choice, etc.) and lectures that students experience will need to be further investigated. One viable option is for instructors to conduct a preliminary needs analysis at the start of the semester to gather information concerning the specifics of typically frequent target tasks, such as those frequent tasks indicated in the results of this study. This analysis could include a student questionnaire as well as a survey of students' current content course syllabi in order for each instructor to gain concise information about the

academic tasks students are required to perform. In this way, materials and lessons can be designed to accommodate the needs for each particular class.

In terms of the results concerning problematic reading skills, students identified their lack of technical and general vocabulary knowledge as a major reading weakness. This result was supported by the instructor interviews as well, particularly by the ELI 72 instructor who mentioned the students' low English proficiency and need to build vocabulary. Although both ELI 72 and ELI 82 courses, to varying extent, currently incorporate vocabulary-building activities into their course design, these results indicate that more vocabulary work, especially at the intermediate level, may be beneficial for students.

One of the major underlying purposes of this needs analysis was to extract information that might be useful to curriculum coordinators in their efforts to distinguish and strengthen the curriculum for both the ELI 72 and ELI 82 courses. From these results, it is difficult to provide solid conclusions. However, as Spector-Cohen et. al. (2001) have proposed, it may be beneficial to consider the possible role of students' varying levels of language proficiency in curriculum design, especially at the ELI 72 level. Based on the ELI 72 instructor interview, low language proficiency does appear to play a governing role in the current design and implementation of the ELI 72 course. Whereas the ELI 82 instructors indicated the strong need for the advanced students to improve "reading efficiency," the ELI 72 instructor stressed the need for the intermediate students to build "reading fluency." Spector-Cohen et. al. (2001) suggest that level of vocabulary knowledge may ultimately differentiate the low and high proficiency students, which would indicate the possible need for more explicit teaching and learning of vocabulary at the intermediate reading level. However, currently there is no concrete proof for these suggestions. Thus, more research into issues concerning the influence of language proficiency and vocabulary knowledge is needed.

Finally, although statistically significant differences in questionnaire responses between the NA target sub-groups were not determined, the relatively small *n*-sizes for each group may have accounted for these results. In some cases, the results revealed certain tendencies, such as the previously mentioned indication that the types of reading materials encountered in content courses differs between graduate and undergraduate students. Curriculum development efforts may benefit from follow-up investigations that examine target sub-group differences, especially if these particular populations of students increase. Furthermore, based on the results of the instructor interviews, future analysis should consider the identification of ELI reading transfer students as a possible target sub-group population for investigation.

Proper NAs are typically composed of information gathered from a variety of sources that is relevant to the language needs of a particular target group. Due to time and resource constraints, the present NA was limited to the collection and assessment of ELI student-reported and ELI instructor-reported information. Therefore, the following limitations of the present NA should be addressed in the methodological design of future studies of this kind:

- Domain experts, such as the NA student-participants' content course instructors, were not consulted. Information gathered from domain experts would provide a more accurate picture of students' content course academic demands.
- Follow-up interviews with stratified random samples of student-participants were not conducted. Such interviews would be useful in gathering more precise information concerning issues raised in the questionnaire results.
- Observations of student-participants performing academic tasks in the context of their content courses would have provided more reliable data pertaining to what students actually do, as opposed to what they simply report doing.

- The present NA would have benefited from a greater number of ELI instructor participants.
- Testing procedures were not employed. The use of performance-based testing would provide more reliable information concerning the identification of students' academic reading weaknesses.
- Gathering information from ELI administrators would have been helpful in providing a program administrative perspective for the present NA.

CONCLUSION

Despite obvious limitations, the present NA was useful in identifying several key issues related to the needs of ELI reading students. First, students reported using certain types of texts more frequently than others in their content courses. ELI curriculum efforts should be made to base instruction on the use of these types of texts. Second, students reported performing certain types of academic tasks more frequently than others in their content courses. Incorporating these tasks in task-based activities within ELI course design might better meet the needs of ELI reading students. Finally, students reported experiencing reading difficulty due to their lack of vocabulary knowledge and reading speed. Improving and increasing instruction within these areas may help students cope with the heavy reading demands of their content courses.

For the improvement of the ELI Reading Program as a whole, revising and establishing clear course goals for both ELI 72 and ELI 82 may allow instructors to better design and implement courses to meet the reading needs of the intermediate and advanced ELI reading student populations. Additionally, it would be ideal if a range of teaching materials are made available that are intended to specifically address these goals. However, this latter aim is not easily achieved due to the current lack of effective and appropriate published EAP teaching materials based on the actual academic reading needs of EAP students. To improve EAP reading

instruction in general, materials designers need to better account for the types of texts and activities which meet the academic reading demands faced by EAP learners. Until this is achieved, program instructors and curriculum developers may need to consider collaborating and creating materials suited for needs of specific EAP student populations.

REFERENCES

Anderson, T. H., & Armbruster, B. B. (1984). Studying. In P. D. Pearson, R. Barr, M. L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (pp. 657-680). New York: Longman.

Asahina, R., Bergman, M., Conklin, G., Guth, J., & Lockhart, C. (1988). ELI 82 Curriculum Development Project. University of Hawaii, Department of Second Language Studies, Unpublished paper.

Carrell, P., & Carson, J. G. (1997). Extensive and intensive reading in an EAP setting. *English for Specific Purposes,* 16(1), 47 – 60.

Day, R., Ono, L., & Harsch, K. (manuscript in progress). *Reading strategies for academic success.*

E.L.I. Teacher's Manual. (2002). University of Hawaii, English Language Institute, Unpublished manual.

Ferris, D., & Tagg, T. (1996a). Academic listening/speaking tasks for ESL students: Problems, suggestions, and implications. *TESOL Quarterly, 30*(2), 297-320.

Ferris, D., & Tagg, T. (1996b). Academic oral communication needs of EAP learners: What subject-matter instructors actually require. *TESOL Quarterly, 30*(1), 31-58.

Ford, J., & Hughes, E. (1997). *Responding voices: A reader for emerging writers.* New York: Mc-Graw-Hill.

Horowitz, D. M. (1986). What professors actually require: Academic tasks for the ESL classroom. *TESOL Quarterly, 20*(3), 445-462.

Johns, A. M. (1981). Necessary English: A faculty survey. *TESOL Quarterly, 15*(1), 51-57.

Kim, Y., Kong, D. K., Lee, Y., Silva, A., & Urano, K. (in press). In M. H. Long (Ed.), *Second language needs analysis*. Cambridge: Cambridge University Press.

Long, M. H. (in press). Methodological issues in learner needs analysis. In M. H. Long (Ed.), *Second language needs analysis*. Cambridge: Cambridge University Press.

Long, M. H., & Crookes, G. (1992). Three approaches to task-based syllabus design. *TESOL Quarterly, 26*(1), 27-56.

Loschky, L., Stanley, J., Cunha, C., & Singh, S. (1987). Evaluation of the University of Hawaii English Language Institute Reading Program. Department of Second Language Studies, Unpublished paper.

McWhorter, K. T. (2003). *Guide to college reading, 6h edition*. New York: Longman.

Ostler, S. E. (1980). A survey of academic needs for advanced ESL. *TESOL Quarterly, 14*(4), 489-502.

Pakenham, K. J. (1998). *Making Connections: An interactive approach to academic reading*. Cambridge: Cambridge University Press.

Shih, M. (1992). Beyond comprehension exercises in the ESL academic reading class. *TESOL Quarterly, 26*(2), 289-318.

Spector-Cohen, E., Kirschner, M., & Wexler, C. (2001). Designing EAP reading course at the university level. *English for Specific Purposes, 20,* 367–386.

Withrow, J., Brookes, G., & Cummings, M. C. (1996). *Changes: Readings for writers, 2nd edition*. New York: St. Martin's Press.

APPENDIX 1

The English Language Institute (ELI) Reading Course Questionnaire
University of Hawaii at Manoa
Spring 2002

To help the ELI keep up with students' academic reading needs, we ask that you take the time to answer the following questions. Your answers are completely confidential and will not affect your grade in this ELI reading course in any way. Your feedback is very important to us – thank you for your help!

I. BACKGROUND INFORMATION

1) Gender: (circle one) male female

2) The ELI reading course are you currently taking: (circle one) ELI 72 ELI 82

3) If you are currently in ELI 82, did you previously take ELI 72? (circle one) Yes No

4) Academic standing: (circle one) undergraduate graduate other:_____

5) Resident status: (check one) _____ international student (F1, J1 or similar visa)

_____ immigrant student (moved to the U.S. from another country – now either a U.S. citizen or on an immigrant visa [green card])

6) Home country: _____

7) First language(s): _____

8) Total length of stay in the United States: Years: _____ Months: _____

9) Number of semesters you have been a student at the University of Hawaii (including the current semester): _____

10) Major or field of study (Please be specific. For example, 'chemistry' not 'science'):

_____

11) Your most recent TOEFL score: _____ Year of exam:_____

II. ACADEMIC READING IN ENGLISH

12) In an average week, approximately how many total pages of reading material are you required to read for all of your academic courses, **not including ELI courses**? (please check one)

0 – 25 pages _____

26 – 50 pages _____

51 – 75 pages _____

76 – 100 pages _____

101 – 125 pages _____

126 – 150 pages _____

151 – 175 pages _____

176 – 200 pages _____

more than 200 pages _____

13) Please list the academic courses you are currently taking, **not including ELI courses**:

Course Number (For example, "MATH 100")	**Course Title** (For example, "Survey of Mathematics")	**Type of Course** (lecture, lab, discussion, seminar, etc.)	**Class Size** (For example, 30 students)

14) From the above list of courses, please choose the **one course** for which you have the most difficulty with your reading assignments:

Course Number: _____ Course Title: _____

***** PLEASE ANSWER QUESTIONS #15 THROUGH #21 AS THEY RELATE TO THE ONE COURSE YOU SELECTED IN QUESTION #14.**

15) In an average week, approximately how many pages of reading material do you read for **the course you selected** (your answer to Question #14)? (please check one)

0 – 25 pages _____

26 – 50 pages _____

51 – 75 pages _____

76 – 100 pages _____

more than 100 pages _____

16) Think about the types of English reading material you read for **the course you selected** (your answer to Question #14). Please indicate how often you read each of the following types of material for that course:

		not at all	sometimes	often	very often	all of the time
a.	Textbooks:	1	2	3	4	5
b.	Articles from academic journals	1	2	3	4	5
c.	Novels	1	2	3	4	5
d.	Magazines	1	2	3	4	5
e.	Newspapers	1	2	3	4	5
f.	Internet sources	1	2	3	4	5
g.	Other: _____	1	2	3	4	5
h.	Other: _____	1	2	3	4	5

17) Think about the types of assignments based on readings you have for **the course you selected** (your answer to Question #14). Please indicate how often you read in order to complete each of the following types of assignments for that course:

		not at all	sometimes	often	very often	all of the time
a.	Follow and understand a lecture:	1	2	3	4	5
b.	Take a midterm or final exam:	1	2	3	4	5
c.	Take a quiz:	1	2	3	4	5
d.	Write a summary of the text:	1	2	3	4	5
e.	Write a reaction paper:	1	2	3	4	5
f.	Write a research paper:	1	2	3	4	5
g.	Participate in a discussion:	1	2	3	4	5
h.	Give a presentation:	1	2	3	4	5
i.	Answer (in writing) comprehension questions based on the text:	1	2	3	4	5
j.	Research (search for information in the library or on the internet in English)	1	2	3	4	5
k.	Understand lab instructions to perform experiments	1	2	3	4	5
l.	Other: _____	1	2	3	4	5
m.	Other: _____	1	2	3	4	5

18) Think about the difficulty you may experience in reading to complete assignments for **the course you selected** (your answer to Question #14). Please indicate the amount of difficulty you have in reading to complete each of the following types of assignments for that course. If you do not have to complete one of the listed assignments (for example, the items you answered "not at all" in question #17), then please skip that item.

		Not difficult	slightly difficult	moderately difficult	very difficult	extremely difficult
a.	Follow and understand a lecture:	1	2	3	4	5
b.	Take a midterm or final exam:	1	2	3	4	5
c.	Take a quiz:	1	2	3	4	5
d.	Write a summary of the text:	1	2	3	4	5
e.	Write a reaction paper:	1	2	3	4	5
f.	Write a research paper:	1	2	3	4	5
g.	Participate in a discussion:	1	2	3	4	5
h.	Give a presentation:	1	2	3	4	5
i.	Answer (in writing) comprehension questions based on the text:	1	2	3	4	5
j.	Research (search for information in the library or on the internet in English)	1	2	3	4	5
k.	Understand lab instructions to perform experiments	1	2	3	4	5
l.	Other: _____	1	2	3	4	5
m.	Other: _____	1	2	3	4	5

19) If you have any additional comments about your academic reading assignments, please write them here:

_____

_____

20) Think about the specific reading problems you may have for **the course you selected** (your answer to Question #14). Please indicate how serious each of the following reading problems is for you when reading for that course:

		Not a problem	slightly serious	moderately serious	very serious	major problem
a.	Understanding the main ideas:	1	2	3	4	5
b.	Understanding the details:	1	2	3	4	5
c.	Understanding at the sentence level:	1	2	3	4	5
d.	Understanding at the paragraph level:	1	2	3	4	5
e.	Quickly finding certain information (scanning):	1	2	3	4	5
f.	Quickly reading for general understanding (skimming):	1	2	3	4	5
g.	Reading speed:	1	2	3	4	5
h.	Understanding general vocabulary:	1	2	3	4	5
i.	Understanding technical vocabulary:	1	2	3	4	5
j.	Recognizing the author's purpose:	1	2	3	4	5
k.	Recognizing the difference between the author's opinions and facts:	1	2	3	4	5
l.	Guessing the meaning when it is not stated directly in the text:	1	2	3	4	5
m.	Interpreting visual aides (graphs, tables, illustrations, etc.):	1	2	3	4	5
n.	Connecting meaning of the text with my own knowledge of the topic:	1	2	3	4	5
o.	Using a dictionary	1	2	3	4	5
p.	Other: _____	1	2	3	4	5
q.	Other: _____	1	2	3	4	5

21) If you have any additional comments about your reading problems, please write them here:

_____

_____

III. YOUR CURRENT ELI READING COURSE

22) Consider your answers to the above questions about the *types of readings* you have, your *reading assignments*, and your *reading problems*. Please indicate how useful the following components (parts) of your current ELI reading course are in providing you the chance to improve your academic reading abilities:

		Not useful at all	slightly useful	moderately useful	very useful	extremely useful
a.	The topics covered in the course:	1	2	3	4	5
b.	The instructor's lectures:	1	2	3	4	5
c.	In-class activities:	1	2	3	4	5
d.	Homework assignments:	1	2	3	4	5
e.	Major course assignments (see syllabus):	1	2	3	4	5
f.	Required course materials listed on the syllabus (textbook, reading packet, etc.):	1	2	3	4	5
g.	Additional materials provided by the instructor (handouts, readings, etc.):	1	2	3	4	5
h.	Other: _____	1	2	3	4	5
i.	Other: _____	1	2	3	4	5

23) Specifically, what are the most useful activities that you've experienced in your ELI reading course? Why do you consider these activities useful?

_____

_____

_____

24) Specifically, how is your ELI reading course NOT meeting your academic reading needs?

_____

_____

_____

25) How would you add or change anything about this ELI reading course to better help you improve your academic reading abilities? Please describe your ideas:

_____

_____

_____

26) If you have any additional comments about your ELI reading course, please write them here:

_____

_____

Thank you for your help!!!

APPENDIX 2

ELI Reading Teacher Interview Questions

1) What are your goals for your students? What do you hope they will gain from your class?

2) What factors influenced the design of your syllabus and course schedule? (This includes the selection of topics covered, the time spent on certain topics, major projects assigned, etc.)

3) From your observations, what would you say are your students' academic reading needs? (In other words, what academic reading problems do they have that they would benefit from if improved?)

4) Do you see any difference between the needs of particular subgroups of your students? For example, differences between those who placed into 82 and those who came up from 72? Between graduate students and undergraduate students? Between students from US territories (Samoa or Guam) and those who are not?
Between social science and hard science majors?

5) What difficulties do you have in teaching this course?

6) What kinds of teaching materials do you use for this course? Which seem to be the most effective or useful? Which seem to be the least?

7) What kinds of topics are covered in the supplementary materials you provide? Is there any teaching source that you have found to be particularly valuable or useful to use in your class?

8) Out of all the topics that you've covered in your course, which ones have you emphasized or covered the most? For these topics, what types of activities did your students engage in?

9) Do students use reading material from their own academic courses in this ELI reading course? If so, what are some ways they are used?

10) If you were to teach this same course next semester, what changes (if any) would you make? (in design and in implementation)

11) What do you think about the current ELI reading goals for the course you teach? Do you use them in your teaching? If you could make any changes to these goals, what would they be?

12) Currently, there are not set objectives for the two levels of ELI reading courses. From your teaching perspective, what is your opinion about having set objectives for each of the two levels of ELI reading courses?

13) Now think of the ELI reading program as a whole. Do you have any suggestions for improvement?

14) Are there any other questions you think I should be asking or issues important to the ELI reading courses that you think should be addressed?