DO NOT QUOTE

A Task-Based Needs Analysis for the English Language Institute at the University of Hawai'i at Mānoa

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[1] In alphabetical order

Introduction

In recent years, accountability has become an important factor in language teaching programs. Stakeholders of such programs, whether they be language learners, language teachers, or program administrators, are held accountable for the success or failure of language learning. In this context, needs analysis (NA) has taken on renewed interest and importance among second language (L2) course designers. Given the increasing number (at least 514,723 during the 1999-2000 academic year) of international students studying in tertiary educational institutions in the United States that will include those whose first languages are not English (American Council on Education, 2000), any on-campus program specifically designed to facilitate smooth transition and speedy accommodation of non-native speaking students (NNSs) into American academic culture should also be held accountable in this way. Design of language courses that can best prepare NNSs successfully to perform a set of academic tasks required in their specific fields of study necessitates a thorough investigation of the following questions: (a) What are the academic tasks NNSs have to perform in order to succeed in their courses? and (b) How are these academic tasks best identified?

These research questions were explored through a task-based NA approach in the English Language Institute at the University of Hawai'i at Mānoa in the spring semester of 2000.

Methodological Issues in Task-Based NA

While traditional approaches to NA (as with syllabus design) usually incorporate linguistic units of analysis, there has emerged an alternative approach using task as the unit of analysis. In this line of research, Long (this volume), in particular, advocates task as a viable unit of analysis

in NA on several grounds, most fundamentally a SLA-motivated rationale which he provides for adoption of an analytic syllabus in general, and for task-based language teaching, in particular (e.g., Long, 1985, 1998; Long & Crookes, 1992, 1993). Long (this volume) provides a set of procedures for NA (using various sources of information, methods of obtaining such information, and source x method combinations) based on a survey of literature in applied linguistics and social science research methods, supplemented by his own data-based study of methodological issues in a task-based NA of airline flight attendants.

Learners traditionally serve as the main source of information in ESL NA literature. Learners can, of course, be a valid source of information; however, this is not necessarily so, since in many cases learners, particularly pre-experience learners, do not know what their real language needs are. Even experienced in-service workers/learners, who are well informed about the content of their job, are often found to be inaccurate when it comes to their language needs; thus the need for support from additional sources, e.g., teachers, employers, and subject-area specialists, or written documents. Long (this volume) warns that relying on applied linguists' intuitions alone in course design and materials writing is risky, because in many cases they have little or no training or experience in the specialized domains where learners will eventually need to use the target language. Domain experts, on the other hand, are an essential source of information, and although most of them have proved unreliable, when it comes to language, use of task as the unit of analysis, as opposed to asking about grammatical structures, notions, and functions, enables domain experts to provide quality information of the kind they do possess, leaving linguistic information to be obtained via analyses of target discourse samples (pp. 9-10).

Written (published and unpublished) NAs can be a useful source of information, particularly in order to avoid reinventing the wheel. Once information has been gathered from different

sources, it is necessary to compare this information with regard to the relative importance of each source for the specific purpose of the course in question. Long (this volume) also emphasizes the importance of triangulation, a procedure used by researchers, e.g., ethnographers, working within a qualitative, or naturalistic, tradition to help validate their data, and thereby increase the credibility of their interpretations of those data. The process involves the researcher comparing different sets and sources of data with one another, and sometimes, involves comparisons among two or more different sources and methods, i.e., source x method combinations. There have been few studies in the NA literature that have employed genuine triangulation. One was Jasso-Aguilar (1999). In her study of the needs of Waikiki hotel maids, Jasso-Aguilar tapped different sources of information, e.g., hotel maids, hotel management personnel, and hotel customers, and different methods, e.g., participant observation, questionnaires, and interviews.

As with sources of information, methods used to obtain that information are varied, e.g., interviews, questionnaire surveys, observations, journals and logs, and use of multiple methods are desirable. Among these, interviews and questionnaires may be the most widely used for collecting data in NAs. When multiple sources and methods are to be employed in a NA, the question of proper sequencing of such measures must be addressed. Long (this volume) maintains that carefully sequenced use of two or more procedures can be expected to produce better quality information than either alone. Long gives an example of a NA procedure that begins with a literature survey, followed by in-depth unstructured interviews with members of different categories of stakeholders. The purpose of the unstructured interviews would not be to produce a final inventory of target needs, but rather, to obtain a better idea, based on insider knowledge, of the scope and dimensions of the sampling elements and sampling frame to be covered in a survey.

Once the scope of items to be covered in a survey is identified through unstructured interviews or other means, a questionnaire can be designed. When conducting a questionnaire survey, it is important to cover representative members and numbers of each category in the sample, i.e., a stratified random sample of the total population (Long, this volume). If carefully designed based on the relevant issues identified through other means, questionnaires can be used to test hypotheses. There are pitfalls, however. Mackay (1978) illustrates how administrators or language teachers can 'lead' respondents by asking pre-formulated questions based on their own conceptions of the language needs of groups of learners. A questionnaire on EAP reading needs, for example, should not 'lead' respondents by immediately asking about how much reading they assign or do in English for their courses or research. Instead, they can be asked about the availability of relevant literature in the faculty members' or students' L1, and then about such matters as required course readings in 'other languages', before any mention is made of English. Similarly, Horowitz (1986) warns that questionnaire items may reflect analysts' invalid, preconceived notions as to the relevant categories of tasks in an unfamiliar domain. Before asking respondents about academic writing tasks, he suggests discovering and classifying EAP writing tasks from the perspective of those assigning and doing them. To that end, Horowitz collected and examined a corpus of actual writing assignments and essay examinations provided by content-area professors at a U.S. university. Horowitz's study reveals that there are clear differences between the task types he identified as a result of his study and those typically included in lists presented to respondents in traditional surveys.

As a next step, a questionnaire survey can be combined with in-depth structured interviews, following up on the results of the earlier open-ended interviews, with small representative sub-groups of the same stratified random sample. Structured interviews differ from unstructured

interviews in the degree to which questions have been pre-formulated by the interviewer. All of the information collected through multiple sources and measures thus far would then be cross-checked against the results of participant observation and/or non-participant observation of native and foreign language use, e.g., through daily logs kept by members of the target groups. Long notes that whereas interviews and questionnaires involve learners introspecting about tasks and reporting on them, and researchers interpreting those data, participant and non-participant observations have the advantage of allowing direct, in-depth, contextualized study of what participants actually do, and of the activities of interest in their natural environment. Jasso-Aguilar (1999) well illustrates the use of participant observation: She reports the procedure as having been by far the most valuable method of obtaining data, enabling her to cross-check, and then identify as inaccurate, some outsider intuitions about language use (e.g., those of the hotel's human resources manager), and also to identify some relevant sources, e.g., morning briefings, telephone calls to the housekeeping room, and paged messages, that might otherwise have been missed.

Proficiency measures, ranging from language self-assessment procedures to task-based, criterion-referenced performance tests, would help elucidate the gap between learner needs and present abilities. Finally, representative target discourse samples obtained through audio- or video-taped recordings can be collected. Analysis of this target discourse would provide useful additional information for training some categories of staff, and help in the preparation of pedagogic materials.

NA in EAP

Previous NA studies into academic tasks in the English for academic purposes (EAP) setting are summarized in Table 1. As Horowitz (1986) and Johns (1981) point out, and as mentioned above, when data are collected by questionnaire, researchers cannot be sure whether the data mirror what the respondents actually do. The result of the data could be what the respondents *think* they do, or what they think the researcher wants to hear. Horowitz also discussed the process of determining the academic tasks the researcher should include in the questionnaire. In most cases of NA studies the researcher, alone or only with several colleagues, determines the items on the questionnaire. Consequently, the items in the questionnaire are limited in terms of diversity and reality, and preconceived (Horowitz, 1986). In order to avoid this problem, unstructured interviews conducted with the target population through a random sampling are needed. Based on the interviews, researchers move one step closer to what students *really* do in their academic tasks. This idea of generating questionnaire items on the basis of unstructured interviews was explained above.

Another limitation of traditional questionnaires is that the respondents do not answer based on a specific course or examples, so the answers are not course- or task-specific, but too general to elicit a solid conclusion as to the students' real academic needs. Ferris and Tagg (1996a, 1996b) however tried to overcome this limitation by clearly directing respondents to "...choose *one* course which you teach regularly..." (1996a). This is a good way to overcome the limitation of the questionnaire being answered in a context-free because the respondent does not have any course in mind when filling it out. The course (sometimes courses) ought to be one that they think most important in their study (e.g., core courses of the major).

As shown in Table 1, previous research has considered a range of variables when investigating EAP/ESL learners' needs: participants and point of view, skills targeted (i.e.,

listening, speaking, reading, and writing), major disciplines, class standing (undergraduate/graduate, or lower division/upper division), domain specificity ("general" vs. domain-specific English), strategies, and task-types. From the table, one can see that there are significant differences in students' needs in terms of these variables. Based on the studies in Table 1, the literature review, and the unstructured interviews, four research questions were formulated. The study covered all four-skill levels and classified needs according to majors, class standing (undergraduate/graduate), academic major, and ESL status (international/immigrant).

Table 1 about here

Research Questions

Based on the perceived frequency, the perceived importance, and the perceived difficulty of academic tasks:

1. Does academic level (undergraduate / graduate) play a differential role in determining the needs of learners in EAP courses?
2. Does academic discipline (arts & humanities, business, engineering, and sciences) play a differential role in determining the needs of learners in EAP courses?
3. Does academic course play a differential role in determining the needs of learners in EAP courses?
4. Does ESL statuses (international/ immigrant) play a differential role in determining the needs of learners in EAP courses?

Method

Participants

A total of 150 students were enrolled in the University of Hawai'i's ELI in the spring semester of 1999. These students were taking classes that included ELI 70 (Listening Comprehension), ELI 72 (Reading for Foreign Students), ELI 73 (Writing for Foreign Students), ELI 80 (Listening Comprehension II), ELI 82 (Advanced ESL Reading), ELI 83 (Writing for Foreign Graduate Students), and ELI 100 (Expository Writing: A Guided Approach). Most of the classes had more than one section. Among the 150 students, 49 were enrolled in two ELI classes (e.g., ELI 72 and ELI 80), and 15 in three ELI classes, concurrently. Consent forms with such sections as (a) purpose of the project, (b) biodata, (c) procedures, and (e) agreement to participate, were distributed to all students. Eighty-seven students returned the forms. A profile of these 87 students is provided in Table 2. Table 2 shows that there were 17 graduate (20%), and 70 undergraduate (80%), students. 73 academic majors were reported: Arts & Humanities (n=18; 21%), Business (n=15; 17%), Engineering (n=6; 7%), and Science (n=34; 39%). Fourteen students reported their major was "undecided". Four language backgrounds reported were 23 (26%) Chinese (including Cantonese and Mandarin), 1 Farsi (1%), 1 Filipino (1%), 40 Japanese (46%), 15 Korean (17%), 1 Samoan (1%), 3 Spanish (3%), and 3 Thai (3%).

Table 2 about here

Procedures

Stratified Random Sampling. In order to select students for the unstructured interview, we first took a random sample of 25% (22 students) of the entire 87 consent form replies without stratification. We then checked the distribution of graduate/undergraduate students in this subsample, which was found closely to mirror the population as a whole (see Tables 2 and 3). We then separately checked the fields of study in the sample, using a chi-square test. The results of the biodata analysis of the 22 are given in Table 3.

Table 3 about here

In Table 3, there were four graduate (18%) and 18 undergraduate (82%) students. There were four Arts & Humanities (18%), four Business (18%), one Engineering (5%), and nine Science (41%) majors, and four Undecided (18%). Their language background shows that there were five Chinese, 11 Japanese, and six Korean-speaking students. The sample exhibited approximately the same distribution overall in terms of academic status and academic majors, a chi-square test ($\chi^2(4)= 8.60934, p > 0.5$) indicating that the sample distribution was not statistically different from the expected distribution. The next step was to conduct unstructured interviews with the 22 students in the sample.

Unstructured Interviews. Unstructured interviews were conducted with the stratified random subsample (n = 22) drawn from the target population. The unstructured interview was chosen for this initial step in order to avoid preconceived, researcher-imposed presumptions of task needs serving as the basis for questionnaire construction (Horowitz, 1986). This open-ended format allowed interviewees to determine the general course of the interview, shaped only by

researcher probes and follow-ups for further detail or explanation. All the authors of the present study served as interviewers. To the extent possible, interviewers and interviewees were matched based on L1 background, and interviews were conducted in the L1; where this was not feasible, interviews were conducted in English. All interviews were audio tape-recorded, and all were conducted at the University of Hawaii at Manoa. Before the unstructured interview sessions, the interviewers met and discussed the procedures in detail and came up with standardized interview guidelines to minimize any inter- and intra-interviewer variation (see Appendix 1: ELI Needs Analysis Project Interview Guidelines for more information).

Unstructured interviews proceeded as follows. Interviewees selected by stratified random sampling were contacted by email and an interview time and place were agreed upon. Following introductions, interviewer – interviewee rapport was established through the use of warm-up questions ("How do you like living here?", "What are you majoring in?", etc.), after which interviewees were told the general nature of the research project ("The goal of this project is to find out what the language needs of English language learners are."). Interviewees were assured that their participation in the project was not a requirement of their ELI classes, that their instructors would not be informed of the results of their interview, and that their answers would otherwise be held in strict confidence. After interviewees consented to having the interview tape-recorded, the interview proper began. Interviewees were asked about subject-matter courses ("What [non – ELI] courses are you taking this semester?") and the academic tasks required in each ("What kind of things do you do in that course?"). Follow-up questions guided interviewees towards discussion of problems or difficulties in performing the previously identified tasks ("How well do you do those things?", "Do you have any problems with that?"). Interviewees

were allowed to explore a topic/task in detail before being prompted to discuss their next course. On average, the interviews were from fifteen to twenty minutes in length.

Once all interviews had been completed, interviewers individually reviewed their respective interview tapes and created a list of tasks mentioned, indicating whether or not those tasks caused the interviewees any difficulty. All interviewers then met in order to aggregate the interview results, from which a number of common threads emerged. Many of the tasks mentioned involved either spontaneous or planned language production in which students had to (a) express their opinions orally in small groups, in whole classes, or in short presentations, and (b) present objective information by writing lab reports and academic papers. Other tasks included (c) listening to and understanding lectures and general classroom announcements both with and without visual support (i.e., chalkboard, overhead projector, etc.) and taking notes during same, (d) reading content-area texts in preparation for, and as a review of, classroom lectures, and (e) use of technology (computers, internet, email, etc.) to both gather and disseminate information.

The questionnaire (see Appendix 2) was constructed with the following sections: Section A: Background Information, Section B: Task Frequency, Section C: Task Importance, Section D: Task Difficulty, and Section E: Changes You Would Like to See in Your ELI Courses and ESL 100 Course.

Analyses. Survey responses were coded for statistical analyses and stored in a computer database. Based on the three dependent variables (i.e., perceived frequency, perceived difficulty, and perceived difficulty of the tasks), three separate analyses of variance (ANOVAs) were conducted using the *SPSS Graduate Pack 8.0 for Windows*. The significance level for this study

was set at $\alpha < .05$. Since three ANOVAs were computed, the Bonferroni adjustment was used to avoid the increased risk of Type I error. Thus the significance level for each analysis was $\alpha < .017$ ($\alpha/3 = .05/3 = .017$).

RESULTS AND DISCUSSION

Of the 89 surveys returned, 38 were eliminated from the analyses because respondents' background information was incomplete. Several more were also excluded from analyses of one or more dependent variables due incomplete responses to the relevant sections. The total responses analyzed were 41 for Task Frequency, 45 for Task Importance, and 38 for Task Difficulty.

Task Frequency. Table 4 provides an overview of the respondents who were included in the analyses.

Table 4 about here

Means and standard deviations were computed for the perceived frequency of the 28 tasks (see Table 5). As Table 5 and Figure 1 show, some tasks were rated as more frequent than others. More frequent tasks were Task 16 (Take notes from the board, $M = 4.66$), 17 (Take notes while listening to lectures, $M = 4.88$), 18 (Understand in-class announcements, $M = 4.73$), 19 (Understand oral directions, $M = 4.73$), and 20 (Understand technical terms in one's major, $M = 4.85$). Note that these frequent tasks involve "receptive" comprehension and note-taking in lectures. Conversely, rated less frequent were tasks that entail production skills, such as Task 2

(Conduct interviews, $M = 1.78$), 8 (Give oral presentations to the class, $M = 1.93$), 25 (Write lab reports, $M = 1.85$), 26 (Write reaction papers, $M = 1.98$), 27 (Write data-based research papers, $M = 2.00$), and 28 (Write book summaries, $M = 1.85$).

Table 5 about here

Figure 1 about here

A five-way repeated-measures analysis of variance (ANOVA) was computed with task, academic level, major, course, and ESL status as the independent variables (Table 6). A significant main effect for the task was found ($F = 8.896$, $p = .000$), showing that some tasks were rated as significantly more frequent than others. A significant interaction was also found between task and course ($F = 1.479$, $p = .017$), indicating that the relative frequency of a task varies depending on the courses in which students are currently enrolled. In addition, although not statistically significant, it is noteworthy that the F value for the interaction between task and academic level was relatively large ($F = 1.530$, $p = .043$ at $\alpha < .017$). This may imply that graduate and undergraduate courses demand different types of tasks.

Table 6 about here

Task Importance. Table 7 provides a profile of the respondents. The distributions are very similar to those in Table 4.

Table 7 about here

Descriptive statistics (Table 8 & Figure 2) showed that the general pattern for perceived task importance was similar to that for task frequency (c.f., Table 5 & Figure 1). For example, most tasks rated more frequent were also rated more important, such as Task 17 (Take notes while listening to lectures, $M = 5.13$), 18 (Understand in-class announcements, $M = 5.13$), 19 (Understand oral directions, $M = 5.29$), and 20 (Understand technical terms in one's major, $M = 5.27$). Furthermore, tasks that involve oral or written production, which were rated less frequent, were also rated less important, e.g., Task 2 (Conduct interviews, $M = 2.64$), 5 (Send email to instructors, $M = 2.67$), 25 (Write lab reports, $M = 2.56$), and 26 (Write reaction papers, $M = 2.96$).

Table 8 about here

Figure 2 about here

Another five-way repeated-measures ANOVA was computed for task importance (Table 9). A statistically significant main effect was found for task ($F = 7.436$, $p = .000$), indicating that some tasks were perceived as more important than others. Although no other statistically significant differences were found, the main effect for ESL status ($F = 3.501$, $p = .072$) and the interaction between ESL status and course ($F = 3.343$, $p = .050$) need some attention. These

findings may indicate that status as an international student or an immigrant student, by itself or coupled with the particular courses enrolled in, influences the relative importance of certain tasks.

Table 9 about here

Figure 3 provides a closer look at the difference between international students and immigrant students. Although the general response patterns resemble each other, the international students and the immigrant students responded differently to a few tasks. For example, the international students rated Task 1 (Ask questions in class) more than a point higher than the immigrant students (*Ms* = 4.26 and 2.86, respectively). Similar differences are found for Task 8 (Give oral presentations to the class), 10 (Make appointments with instructors), and 18 (Understand in-class announcements). These tasks involve mostly oral communication with instructors or other students.

Figure 3 about here

Task Difficulty. Table 10 presents a profile of the participants. Again, the general pattern is the same.

Table 9 about here

Means and standard deviations for task difficulty are presented in Table 11. As Figure 4 shows, the response pattern for task difficulty was different from those for task frequency or task

importance (c.f. Figures 1 & 2). Those ranked higher in difficulty were Task 1 (Ask questions in class, M =3.92), 6 (Express one's personal opinions and views when asked, M = 4.05), 8 (Give oral presentations to the class, M = 4.08), and 27 (Write data-based research papers, M = 3.92). None of these tasks were ranked high in either task frequency or task importance. It is assumed, therefore, that perceived task difficulty is independent of their perceived relative frequency or perceived importance. It should be noted that three of the tasks listed above involve active participation in classroom discussion. Such a result is understandable since the majority of respondents were from East Asian countries where active participation in the sense of speaking in classrooms is not as common.

Tasks judged less difficult were Task 4 (Send email to instructors, M = 2.11), 5 (Send email to classmates, M = 2.11), 10 (Make appointments with instructors, M = 2.45), and 22 (Use computers for word-processing, M = 2.37). These tasks are simpler in that they involved only some routine work with simple computer skills and are not cognitively demanding.

Table 10 about here

Figure 4 about here

A five-way repeated-measures ANOVA was computed, using the same independent variables, and with task difficulty as the dependent variable. Results are presented in Table 12. The main effect for task was statistically significant (F = 2.031, p = .002), which indicates that certain tasks, possibly 1, 6, 8, and 27, were judged significantly more difficult than some other tasks (e.g., 4, 5,

10, and 22). There were no other significant main effects or interactions, suggesting that perceived task difficulty is independent of such factors as academic level, major, course in which currently enrolled, and ESL status. In other words, it is possible that perceived task difficulty in an EAP context is determined by the tasks themselves rather than other external factors.

Table 11 about here

Below is a brief summary of the main findings.

1. Task Frequency
   - The frequency of certain tasks differs across academic disciplines.
   - Academic level (graduate or undergraduate standing) may influence relative frequency of certain tasks.
2. Task Importance
   - Status as an international or immigrant student may cause differences in perceived importance of certain tasks.
   - ESL status (international or immigrant) and the courses a student takes may interact to influence to perceived importance of certain tasks.
3. Task Difficulty:
   - NNS students perceive certain tasks as more difficult than others, regardless of their academic level (grad/undergrad), major, ESL status, or the courses they are taking.

4. Other issues

- Students' perceived task frequency and task importance showed some similarities, whereas perceived task difficulty was independent of perceived task frequency or importance.

LIMITATIONS OF THE STUDY

Given that a NA is an on-going process in course design, the following is a summary of the limitations of the current study, which need to be addressed in a follow-up study:

- While relatively high for questionnaire surveys, the response rate (i.e., 57%) was still relatively low in absolute terms; nearly half the data collected from the questionnaires were not usable for data analysis for a variety of reasons. A higher return rate may have provided a clearer picture of learner needs.
- Domain experts are often consulted in a task-based NA, but in this study, such experts (i.e., instructors of content courses participants were taking at the time of data collection) were not consulted.
- Observation of ESL learners performing academic tasks in their content courses would likely have produced a more reliable picture of what they were actually doing, as opposed to what they reported to be doing.

CONCLUSION

It may be argued that, without conducting this type of study, teachers and researchers are capable of intuiting the kinds of academic tasks ESL students will need to be able to perform in

their academic courses. One of the aims of this study, however, was to ascertain students' needs empirically. Until now, there has been a proliferation of guesswork in place of genuine student needs analysis, and different (sometimes inappropriate) units of analysis and data-collection methods have been utilized. This study was one of the few to have employed task as the unit of analysis in a learner NA, in contrast to the general current practice of using notions, functions, lexis, or grammatical structures. In addition, this study employed multiple methods of data collection, i.e., unstructured interviews and questionnaires.

By using an appropriate unit of analysis, i.e., task, and data-collection method, the gap between what students will really face in real academic courses and what EAP courses teach can be reduced, which is the ultimate goal of EAP course design. This kind of transferability ought to be guaranteed for the participants in the study because they are taking academic courses and ELI courses at the same time. What students learn should be transferable to real academic courses and enable students to compete effectively with native speakers. Faculty members for ESL and EAP courses should always bear this in mind, and researchers should provide them with a clear picture of students' needs. This study gives ELI instructors a clear picture of student needs and researchers a new way of studying them.

As shown by the literature review, there has been little research on EAP learner NA. Furthermore, only a few studies have used students as sources, as was the case here (see Table 1). This makes it difficult to compare the present findings with those from previous work. However, similarities exist between the present study and that of Ostler (1980). Both employed questionnaire surveys of students as the main source of information, and both used academic major and class standing among their classification criteria. As with the present study, Ostler found a clear difference between undergraduate and graduate students in terms of academic skills

needed. Although it is not clear what is meant by the word 'need' in Ostler (1980), the present survey revealed that there is a difference in task frequency and possible perceived task importance between undergraduate and graduate students. The results of this first step in a task-based NA in an EAP setting suggest that perceived task difficulty may be independent of perceived task frequency and importance, a finding worthy of further investigation.

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Appendix 1. *ELI needs analysis project interview guidelines*

1. Double-check your equipment before the interview.
2. Preferably interview in L1; notes taken during the interview; 15-min. max; no leading Qs; have them talk; when there is silence, just wait until they begin to speak again.
3. Assure to Ss that their interview will be kept confidential, especially from their teachers.
4. Explain to Ss the purpose of this interview in particular and the project in general.
5. Start with some warm-up questions. (While at this stage, ask clarification questions based on the info on the consent forms, if necessary).
6. Ask what subject-matter courses they are taking (e.g., What did you do in your Economics class this week?)
7. Needs in terms of performing academic tasks?
8. Problems or difficulties while acculturating to US academic culture in general and performing academic tasks for their subject-matter courses in particular?
9. We may ask whether there is mismatch between what they learn in their ELI class(es) and what they're required to do in their subject-matter courses.

Appendix 2. *ELI needs analysis questionnaire*

ENGLISH AS A SECOND LANGUAGE STUDENT NEEDS QUESTIONNAIRE
UNIVERSITY OF HAWAI'I AT MĀNOA
SPRING 2000

This questionnaire is part of a research project into the current and future needs of students taking English Language Institute (ELI) classes at the University of Hawai'i at Mānoa (UHM). With the full cooperation of the ELI, the survey is being conducted by a group of graduate students taking ESL 730: Task-Based Language Teaching. We would like to identify the reasons you have for studying **English for academic purposes** (that is, using English for your non-ELI/ESL courses). What uses do you have for English now? What uses do you anticipate having for English in the future? The information you provide is very important to our study, whose purpose is to identify the needs of English language learners like yourself. The questionnaire will take about 15 minutes to complete. Information you provide on this questionnaire will be used only for the purpose mentioned above. If you have any questions or comments regarding this questionnaire or the study, please feel free to contact Youngkyu Kim (youngkyu@hawaii.edu). Thank you very much for your participation.

Section A: Background Information

1) **ELI/ESL course(s)** you are currently taking: [ ] ELI 70 [ ] ELI 72 [ ] ELI 73

(Check **ALL** that apply) [ ] ELI 80 [ ] ELI 82 [ ] ELI 83 [ ] ESL 100

2) **Gender**: [ ] Female [ ] Male

3) **First Language**:

[ ] Cantonese [ ] Farsi [ ] Ilokano [ ] Indonesian [ ] Japanese

[ ] Korean [ ] Mandarin [ ] Samoan [ ] Spanish [ ] Tagalog

[ ] Thai Other (Please specify)

_____

4) **Major/Field of Study** (Please be specific! For example: 'chemistry' not 'science'):

_____ (Or if undecided, please write **your expected major**)

5) **Academic Status** (Check **ALL** that apply):

a) First, are you [ ] a **classified** or [ ] an **unclassified** student?

b) Second, are you [ ] an **undergraduate** or [ ] a **graduate** student?

c) If an **undergraduate** student, are you [ ] a **new freshman** or [ ] a **transfer student** or [ ] a **2nd degree bachelor's** student?

d) If a **graduate** student, are you [ ] a **master's** or [ ] a **doctoral** student?

e) Other (Please specify)

_____

6) **ESL Status:**

[ ] 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])

7) **Total length of Stay** in the United States: _____ year(s) _____ month(s)

8) **University courses** you are currently taking, **NOT INCLUDING** ELI/ESL courses:

Course Number (For example, "MATH 100")	**Course Title** (For example, "Survey of Mathematics")	**Type of Course** (lab, lecture, seminar, etc.)	**Class Size** (For example, 40 students)

➔ Please choose and mark **ONE** course from the above list **with an asterisk** (*) that you think is most relevant to your major. **Answer the following questions in Sections B through D with that asterisked course in mind.**

Section B: Task Frequency

Please indicate **how many times per semester** you perform the following tasks in **the course you marked with an asterisk (*) in Section A, Number 8** by rating each type of task.

1. Ask questions in class	0	1-2	3-4	5-9	10-19	20 or more
2. Conduct interviews	0	1-2	3-4	5-9	10-19	20 or more
3. Collect data from experiments	0	1-2	3-4	5-9	10-19	20 or more
4. Send email to instructors	0	1-2	3-4	5-9	10-19	20 or more
5. Send email to classmates	0	1-2	3-4	5-9	10-19	20 or more
6. Express your personal opinions and views when asked	0	1-2	3-4	5-9	10-19	20 or more
7. Find information on the Internet	0	1-2	3-4	5-9	10-19	20 or more
8. Give oral presentations to the class	0	1-2	3-4	5-9	10-19	20 or more
9. Locate class-related information in assigned readings	0	1-2	3-4	5-9	10-19	20 or more
10. Make appointments with instructors	0	1-2	3-4	5-9	10-19	20 or more
11. Participate in group discussions	0	1-2	3-4	5-9	10-19	20 or more
12. Preview class-related reading materials before class	0	1-2	3-4	5-9	10-19	20 or more
13. Review class-related reading materials after class	0	1-2	3-4	5-9	10-19	20 or more
14. Take exams	0	1-2	3-4	5-9	10-19	20 or more
15. Take quizzes	0	1-2	3-4	5-9	10-19	20 or more
16. Take notes from the board	0	1-2	3-4	5-9	10-19	20 or more
17. Take notes while listening to lectures	0	1-2	3-4	5-9	10-19	20 or more
18. Understand in-class announcements (For example, homework, exam dates)	0	1-2	3-4	5-9	10-19	20 or more
19. Understand oral directions	0	1-2	3-4	5-9	10-19	20 or more
20. Understand technical terms in your major	0	1-2	3-4	5-9	10-19	20 or more
21. Understand visual information in class (For example, watching videos in class)	0	1-2	3-4	5-9	10-19	20 or more
22. Use computers for word-processing (For example, typing papers using Word)	0	1-2	3-4	5-9	10-19	20 or more
23. Use computers for data analysis (For example, using Excel, SPSS, or SAS)	0	1-2	3-4	5-9	10-19	20 or more
24. Use notes to study for exams	0	1-2	3-4	5-9	10-19	20 or more
25. Write lab reports	0	1-2	3-4	5-9	10-19	20 or more
26. Write reaction papers	0	1-2	3-4	5-9	10-19	20 or more
27. Write data-based research papers	0	1-2	3-4	5-9	10-19	20 or more
28. Write book summaries	0	1-2	3-4	5-9	10-19	20 or more

Section C: Task Importance

Please indicate the importance of the following tasks for success in **the course you marked with an asterisk (*) in Section A, Number 8** by rating each task on a scale of 1 (not important) to 6 (very important).

	not important					very important
1. Ask questions in class	1	2	3	4	5	6
2. Conduct interviews	1	2	3	4	5	6
3. Collect data from experiments	1	2	3	4	5	6
4. Send email to instructors	1	2	3	4	5	6
5. Send email to classmates	1	2	3	4	5	6
6. Express your personal opinions and views when asked	1	2	3	4	5	6
7. Find information on the Internet	1	2	3	4	5	6
8. Give oral presentations to the class	1	2	3	4	5	6
9. Locate class-related information in assigned readings	1	2	3	4	5	6
10. Make appointments with instructors	1	2	3	4	5	6
11. Participate in group discussions	1	2	3	4	5	6
12. Preview class-related reading materials before class	1	2	3	4	5	6
13. Review class-related reading materials after class	1	2	3	4	5	6
14. Take exams	1	2	3	4	5	6
15. Take quizzes	1	2	3	4	5	6
16. Take notes from the board	1	2	3	4	5	6
17. Take notes while listening to lectures	1	2	3	4	5	6
18. Understand in-class announcements (For example, homework, exam dates)	1	2	3	4	5	6
19. Understand oral directions	1	2	3	4	5	6
20. Understand technical terms in your major	1	2	3	4	5	6
21. Understand visual information in class (For example, watching videos in class)	1	2	3	4	5	6
22. Use computers for word-processing (For example, typing papers using Word)	1	2	3	4	5	6
23. Use computers for data analysis (For example, using Excel, SPSS, or SAS)	1	2	3	4	5	6
24. Use notes to study for exams	1	2	3	4	5	6
25. Write lab reports	1	2	3	4	5	6
26. Write reaction papers	1	2	3	4	5	6
27. Write data-based research papers	1	2	3	4	5	6
28. Write book summaries	1	2	3	4	5	6

Section D: Task Difficulty

Please indicate your personal sense of the difficulty of the following tasks in **the course you marked with an asterisk (*) in Section A, Number 8** by rating each task on a scale of 1 (extremely easy) to 6 (extremely difficult).

	extremely easy					extremely difficult
1. Ask questions in class	1	2	3	4	5	6
2. Conduct interviews	1	2	3	4	5	6
3. Collect data from experiments	1	2	3	4	5	6
4. Send email to instructors	1	2	3	4	5	6
5. Send email to classmates	1	2	3	4	5	6
6. Express your personal opinions and views when asked	1	2	3	4	5	6
7. Find information on the Internet	1	2	3	4	5	6
8. Give oral presentations to the class	1	2	3	4	5	6
9. Locate class-related information in assigned readings	1	2	3	4	5	6
10. Make appointments with instructors	1	2	3	4	5	6
11. Participate in group discussions	1	2	3	4	5	6
12. Preview class-related reading materials before class	1	2	3	4	5	6
13. Review class-related reading materials after class	1	2	3	4	5	6
14. Take exams	1	2	3	4	5	6
15. Take quizzes	1	2	3	4	5	6
16. Take notes from the board	1	2	3	4	5	6
17. Take notes while listening to lectures	1	2	3	4	5	6
18. Understand in-class announcements (For example, homework, exam dates)	1	2	3	4	5	6
19. Understand oral directions	1	2	3	4	5	6
20. Understand technical terms in your major	1	2	3	4	5	6
21. Understand visual information in class (For example, watching videos in class)	1	2	3	4	5	6
22. Use computers for word-processing (For example, typing papers using Word)	1	2	3	4	5	6
23. Use computers for data analysis (For example, using Excel, SPSS, or SAS)	1	2	3	4	5	6
24. Use notes to study for exams	1	2	3	4	5	6
25. Write lab reports	1	2	3	4	5	6
26. Write reaction papers	1	2	3	4	5	6
27. Write data-based research papers	1	2	3	4	5	6
28. Write book summaries	1	2	3	4	5	6

Section E: Changes You Would Like to See in Your ELI Courses and ESL 100 Course

Considering the responses you have provided above for studying **English for academic purposes**, and based on past, current, or anticipated future uses you have for English, are there any changes you would like to see in your ELI or ESL classes at UHM? Which parts seem most useful to you? Which parts seem least useful to you? What else would you like to see included that would be relevant to your needs? Please use your first language if it is **Chinese**, **Japanese**, or **Korean**. Otherwise, please write in English.

Most useful:

Least useful:

What else you would like to see included:

THANK YOU VERY MUCH FOR YOUR COOPERATION!

If you would like to receive a copy of our findings, please provide your name and address below:

Table 1. *EAP learner needs analyses*

Study	Method	Focuses	Skills targeted	Needs classification criteria	Results
Ostler (1980)	Survey; 56questions from professors and teachers	133 advanced ESL students (Ten different majors Graduate and Undergraduate)	Self-assessment of 16 academic skills (frequency or percentage) and aural/oral proficiency Sentence-combining & summary skill	Academic major Class standing	Clear difference in academic skills needed by Graduate and Undergraduate. Sharp decrease in confidence in creative language skills
Johns (1981)	Questionnaire	200 randomly selected faculty (140 returned)	Reading, writing, speaking, and listening	Academic major Class standing "general" vs. domain-specific English	Receptive skills ranked first, regardless of class standing General English was put above Specific Purposes English
Horowitz (1986)	Take home writing tests & in-class writing tests	750 faculty contacted (36 usable data/ 38 responses)	Writing	Range (seven categories) and nature (determined by how much information is given to students, e.g., controlled vs. free) of writing tasks	Teachers give too much detail for a given writing task, so all that students do is summarize or reorganizing what is given to them. A pedagogic suggestion is to have students "simulate", if not "master", what they will experience later in real academic contexts.
Powers (1986)	Questionnaire	150 faculty 28/34 institutions participated 150 questionnaires returned (6 graduate majors/1 undergraduate English)	Measuring listening comprehension abilities	Academic majors	Like Johns (1981), in general, reading and listening were turned out to be more important than writing and speaking. Lectures were ranked highest in all majors as an appropriate measure for listening comprehension even though this should be cautioned because of differences among various types of lectures.

Table 1. *EAP learner needs analyses* (continued)

Study	Method	Focuses	Skills targeted	Needs classification criteria	Results
Shih (1992)	Qualitative		Reading	Strategy	More holistic, task- and text-specific strategies should be developed. These strategies should not be discrete skills but those that could be used optimally for later or even present content-based classes.
Leki (1995)	Qualitative Interview (Students & professors) Class observation Written material Journal	Five first semester ESL visa students	Writing	Strategies by different academic majors & class standing	10 categories of strategies (p. 240) Most of the students already had many of these strategies and very efficiently used one after another or several strategies together. It will be helpful to talk about strategies and let students be aware of these and yet other strategies.
Ferris & Tagg (1996a)	Quantitative (survey Part A, B, and C)/ Qualitative (comment and course description parts (F & G) of the survey)	234/946 (sent) professors in four different institutions	Listening and speaking	Types of listening/speaking tasks	Types of listening/speaking tasks vary across disciplines, class sizes, and class types. Genre- or context-specific listening/speaking training is necessary. EAP teachers should prepare the students to actively participate in various kinds of university academic classes. They also prepare themselves to be aware of changes in teaching trend (e.g., formal to less formal and interactive).
Ferris & Tagg (1996b)	Quantitative (survey Part D and E)/ Qualitative (comment and course description parts (E & F) of the survey)	234/946 (sent) professors in four different institutions	Listening and speaking	What kind of aural/oral abilities do ESL learners lack of for the content classes? What can ESL teachers do about this?	Interaction and participation in the classroom should be encouraged to learn and practice. ESL students' lecture comprehension abilities are quite good compared with speaking, writing, and reading skills. Fluency and coherence of speech are desirable.

Table 2. *Biodata analysis results*

Class	N	Academic Status	N	Major	N	Gender	N	L1	N
ELI 70	15 (17%)	Graduate	17 (20%)	A & H	18 (21%)	Female	54 (62%)	CHN	23 (26%)
ELI 72	5 (6%)	Undergrad.	70 (80%)	Business	15 (17%)	Male	33 (38%)	Farsi	1 (1%)
ELI 73	2 (2%)			Engineering	6 (7%)			FIL	1 (1%)
ELI 80	23 (26%)			Science	34 (39%)			JPN	40 (46%)
ELI 82	20 (23%)			Undecided	14 (16%)			KOR	15 (17%)
ELI 84	6 (7%)							Samoan	1 (1%)
ELI 100	16 (18%)							SPN	3 (3%)
								Thai	3 (3%)
Total	87		87		87		87		87

Table 3. *Sample biodata analysis results*

Class	N	Academic Status	N	Major	N	Gender	N	L1	N
ELI 70	2 (9%)	Graduate	4 (18%)	A & H	4 (18%)	Female	12 (55%)	CHN	5 (23%)
ELI 72	3 (14%)	Undergrad.	18 (82%)	Business	4 (18%)	Male	10 (45%)	JPN	11 (50%)
ELI 80	5 (23%)			Engineering	1 (5%)			KOR	6 (27%)
ELI 82	6 (27%)			Science	9 (41%)				
ELI 100	6 (27%)			Undecided	4 (18%)				
Total	22		22		22		22		22

Table 4. *Overview of the respondents (n=41)*

First language		Academic level[a]		Academic major[b]		Academic areas of the courses selected[b]		ESL status[c]	
Cantonese	4	UND	26	A&H	10	A&H	9	INT	35
Japanese	16	GR	15	BUS	10	BUS	6	IMM	6
Korean	5			ENG	5	ENG	4		
Mandarin	10			SCI	16	SCI	22		
Other	6								

[a] UND: undergraduate, GR: graduate. [b] A&H: Arts and Humanities, BUS: Business, ENG: Engineering, SCI: Sciences. [c] INT: international students with student visa, IMM: immigrant students.

Table 5. *Descriptive Statistics: Task Frequency (n=41)*

Task #	*M*	*SD*	Task #	*M*	*SD*
1	2.95	1.55	15	2.63	1.71
2	1.78	0.94	16	4.66	1.74
3	2.27	1.63	17	4.88	1.60
4	2.63	1.55	18	4.73	1.36
5	2.37	1.46	19	4.73	1.23
6	3.05	1.52	20	4.85	1.22
7	3.80	1.50	21	3.88	1.71
8	1.93	1.08	22	3.71	2.04
9	3.56	1.58	23	2.76	2.01
10	2.05	1.18	24	3.90	1.85
11	2.88	1.66	25	1.85	1.64
12	3.63	1.80	26	1.98	1.29
13	3.85	1.80	27	2.00	1.34
14	2.73	1.16	28	1.85	1.28

Table 6. *ANOVA Table: Task Frequency*

Source	*SS*	*df*	*MS*	*F*	*p*
Within-Subjects Effects					
T	457.880	27	16.959	8.896	.000*
T x AL	78.740	27	2.916	1.530	.043
T x M	188.832	81	2.331	1.223	.099
T x ESL	63.723	27	2.360	1.238	.190
T x CM	152.235	54	2.819	1.479	.017*
T x AL x M	0.000	0	.	.	.
T x AL x ESL	0.000	0	.	.	.
T x M x ESL	92.157	54	1.707	0.895	.687
T x AL x M x ESL	0.000	0	.	.	.
T x AL x CM	0.000	0	.	.	.
T x M x CM	29.311	27	1.086	0.569	.962
T x AL x M x CM	0.000	0	.	.	.
T x ESL x CM	105.746	54	1.958	1.027	.424
T x AL x ESL x CM	0.000	0	.	.	.
T x M x ESL x CM	0.000	0	.	.	.
T x AL x M x ESL x CM	0.000	0	.	.	.
Error	1286.784	675	1.906		
Between-Subjects Effects					
AL	7.205	1	7.205	0.724	.403
M	13.297	3	4.432	0.445	.723
ESL	1.769	1	1.769	0.178	.677
CM	15.491	2	7.745	0.778	.470
AL x M	0.000	0	.	.	.
AL x ESL	0.000	0	.	.	.
M x ESL	28.951	2	14.476	1.454	.253
AL x M x ESL	0.000	0	.	.	.
AL x CM	0.000	0	.	.	.
M x CM	2.432	1	2.432	0.244	.625
AL x M x CM	0.000	0	.	.	.
ESL x CM	12.421	2	6.210	0.624	.544
AL x ESL x CM	0.000	0	.	.	.
M x ESL x CM	0.000	0	.	.	.
AL x M x ESL x CM	0.000	0	.	.	.
Error	248.889	25	9.956		

* $p < .017$ (.05 / 3 = .017)

Notes: *T: task, AL: academic level, M: academic areas that the participants were majoring in, ESL: ESL status, CM: academic areas of the courses on which the participants answered the questionnaire.*

Table 7. *Overview of the respondents (n=45)*

First language		Academic level[a]		Academic areas of the majors[b]		Academic areas of the courses selected[b]		ESL status[c]	
Cantonese	4	UND	31	A&H	12	A&H	10	INT	38
Japanese	20	GR	14	BUS	11	BUS	8	IMM	7
Korean	5			ENG	4	ENG	3		
Mandarin	10			SCI	18	SCI	24		
Other	5								

[a] UND: undergraduate, GR: graduate. [b] A&H: Arts and Humanities, BUS: Business, ENG: Engineering, SCI: Sciences. [c] INT: international students with student visa, IMM: immigrant students.

Table 8. *Descriptive Statistics: Task Importance (n=45)*

Task #	*M*	*SD*	Task #	*M*	*SD*
1	4.04	1.69	15	4.18	1.93
2	2.64	1.43	16	4.93	1.45
3	3.04	1.82	17	5.13	1.39
4	3.16	1.86	18	5.13	1.32
5	2.67	1.51	19	5.29	1.10
6	4.16	1.69	20	5.27	1.30
7	4.31	1.74	21	4.84	1.61
8	3.27	2.06	22	4.27	1.80
9	3.96	1.58	23	3.73	1.88
10	3.36	1.60	24	5.16	1.36
11	3.87	1.80	25	2.56	1.74
12	4.56	1.49	26	2.96	1.82
13	4.64	1.42	27	3.33	1.99
14	4.93	1.72	28	3.27	2.04

Table 9. *ANOVA Table: Task Importance*

Source	*SS*	*df*	*MS*	*F*	*p*
Within-Subjects Effects					
T	461.060	27	17.076	7.436	.000*
T x AL	46.675	27	1.729	0.753	.814
T x M	186.325	81	2.300	1.002	.478
T x ESL	67.867	27	2.514	1.095	.339
T x CM	126.754	54	2.347	1.022	.433
T x AL x M	0.000	0	.	.	.
T x AL x ESL	0.000	0	.	.	.
T x M x ESL	84.222	54	1.560	0.679	.962
T x AL x M x ESL	0.000	0	.	.	.
T x AL x CM	0.000	0	.	.	.
T x M x CM	131.425	54	2.434	1.060	.363
T x AL x M x CM	0.000	0	.	.	.
T x ESL x CM	81.900	54	1.517	0.660	.971
T x AL x ESL x CM	0.000	0	.	.	.
T x M x ESL x CM	0.000	0	.	.	.
T x AL x M x ESL x CM	0.000	0	.	.	.
Error	1736.049	756	2.296		
Between-Subjects Effects					
AL	10.755	1	10.755	0.827	.371
M	9.487	3	3.162	0.243	.865
ESL	45.520	1	45.520	3.501	.072
CM	36.574	2	18.287	1.407	.262
AL x M	0.000	0	.	.	.
AL x ESL	0.000	0	.	.	.
M x ESL	33.992	2	16.996	1.307	.287
AL x M x ESL	0.000	0	.	.	.
AL x CM	0.000	0	.	.	.
M x CM	13.144	2	6.572	0.506	.609
AL x M x CM	0.000	0	.	.	.
ESL x CM	86.935	2	43.468	3.343	.050
AL x ESL x CM	0.000	0	.	.	.
M x ESL x CM	0.000	0	.	.	.
AL x M x ESL x CM	0.000	0	.	.	.
Error	364.020	28	13.001		

* $p < .017$ (.05 / 3 = .017)

Notes: *T: task, AL: academic level, M: academic areas that the participants were majoring in, ESL: ESL status, CM: academic areas of the courses on which the participants answered the questionnaire.*

Table 10. *Overview of the respondents (n=38)*

First language		Academic level[a]		Academic areas of the majors[b]		Academic areas of the courses selected[b]		ESL status[c]	
Cantonese	4	UND	26	A&H	9	A&H	7	INT	31
Japanese	15	GR	12	BUS	10	BUS	7	IMM	7
Korean	4			ENG	5	ENG	4		
Mándarin	9			SCI	14	SCI	20		
Other	6								

[a] UND: undergraduate, GR: graduate. [b] A&H: Arts and Humanities, BUS: Business, ENG: Engineering, SCI: Sciences. [c] INT: international students with student visa, IMM: immigrant students.

Table 11. *Descriptive Statistics: Task Difficulty (n=38)*

Task #	*M*	*SD*	Task #	*M*	*SD*
1	3.92	1.38	15	2.95	1.84
2	3.53	1.39	16	2.79	1.56
3	3.32	1.56	17	3.74	1.62
4	2.11	1.48	18	3.24	1.40
5	2.11	1.33	19	3.29	1.47
6	4.05	1.09	20	3.34	1.42
7	2.68	1.66	21	2.92	1.53
8	4.08	1.50	22	2.37	1.42
9	3.03	1.28	23	2.53	1.43
10	2.45	1.50	24	2.87	1.49
11	3.32	1.44	25	3.61	1.55
12	2.79	1.49	26	3.34	1.53
13	3.47	5.11	27	3.92	1.48
14	3.66	1.96	28	3.66	1.42

Table 12. *ANOVA Table: Task Difficulty*

Source	*SS*	*df*	*MS*	*F*	*p*
Within-Subjects Effects					
T	145.244	27	5.379	2.031	.002*
T x AL	27.591	27	1.022	0.386	.998
T x M	174.927	81	2.160	0.815	.873
T x ESL	33.777	27	1.251	0.472	.990
T x CM	67.743	54	1.255	0.474	1.000
T x AL x M	0.000	0	.	.	.
T x AL x ESL	0.000	0	.	.	.
T x M x ESL	111.198	54	2.059	0.777	.875
T x AL x M x ESL	0.000	0	.	.	.
T x AL x CM	0.000	0	.	.	.
T x M x CM	43.949	54	0.814	0.307	1.000
T x AL x M x CM	0.000	0	.	.	.
T x ESL x CM	86.778	54	1.607	0.607	.988
T x AL x ESL x CM	0.000	0	.	.	.
T x M x ESL x CM	0.000	0	.	.	.
T x AL x M x ESL x CM	0.000	0	.	.	.
Error	1501.869	567	2.649		
Between-Subjects Effects					
AL	7.225	1	7.225	0.278	.604
M	52.162	3	17.387	0.668	.581
ESL	12.171	1	12.171	0.468	.502
CM	84.914	2	42.457	1.631	.220
AL x M	0.000	0	.	.	.
AL x ESL	0.000	0	.	.	.
M x ESL	12.194	2	6.097	0.234	.793
AL x M x ESL	0.000	0	.	.	.
AL x CM	0.000	0	.	.	.
M x CM	11.949	2	5.974	0.229	.797
AL x M x CM	0.000	0	.	.	.
ESL x CM	93.374	2	46.687	1.793	.191
AL x ESL x CM	0.000	0	.	.	.
M x ESL x CM	0.000	0	.	.	.
AL x M x ESL x CM	0.000	0	.	.	.
Error	546.691	21	26.033		

* $p < .017$ (.05 / 3 = .017)

Notes: T: task, AL: academic level, M: academic areas that the participants were majoring in, ESL: ESL status, CM: academic areas of the courses on which the participants answered the questionnaire.

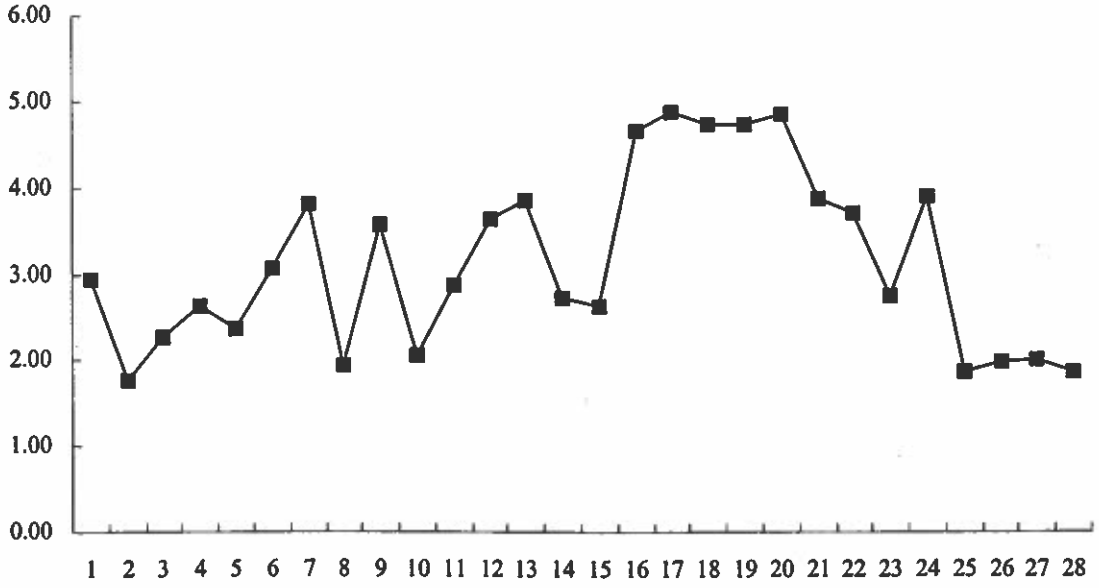

Figure 1. Means for Task Frequency

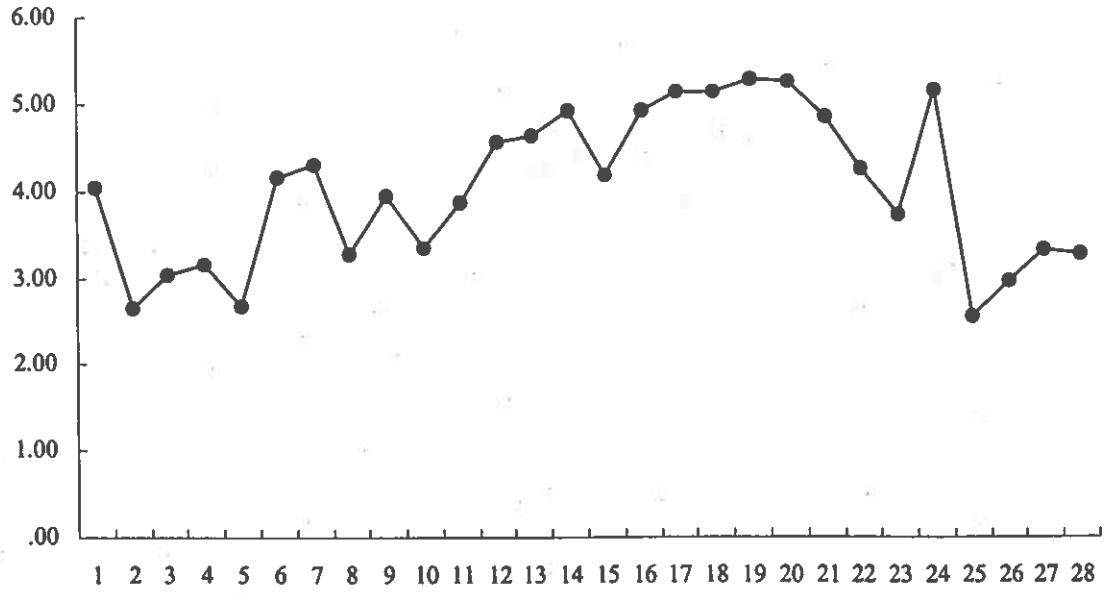

Figure 2. Means for Task Importance

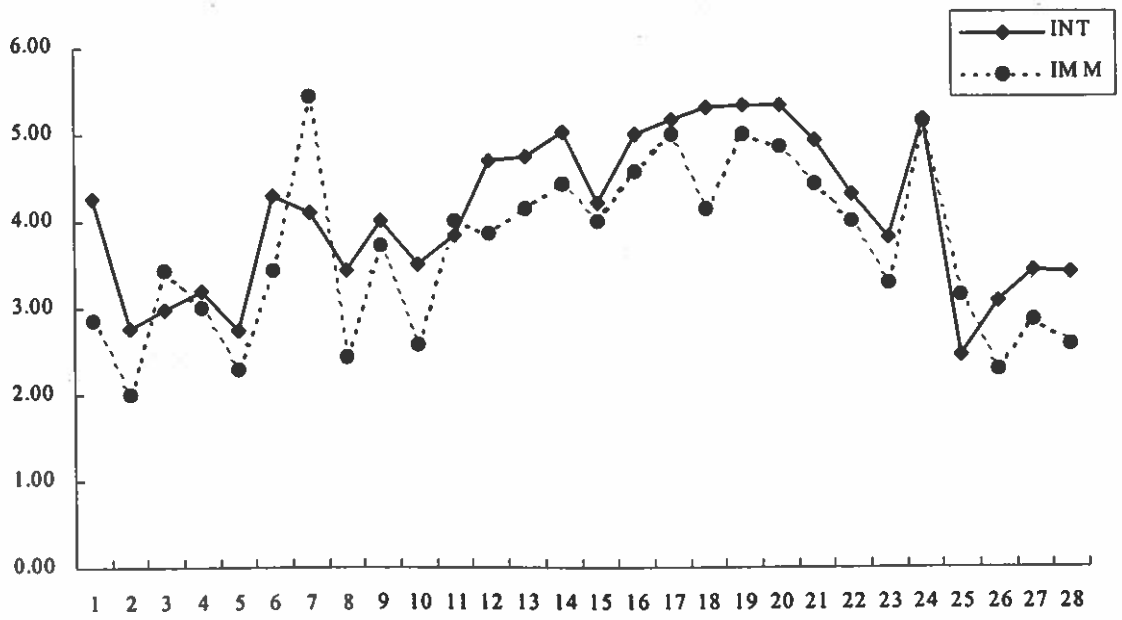

Figure 3. Means for Task Importance (International & Immigrant Students)

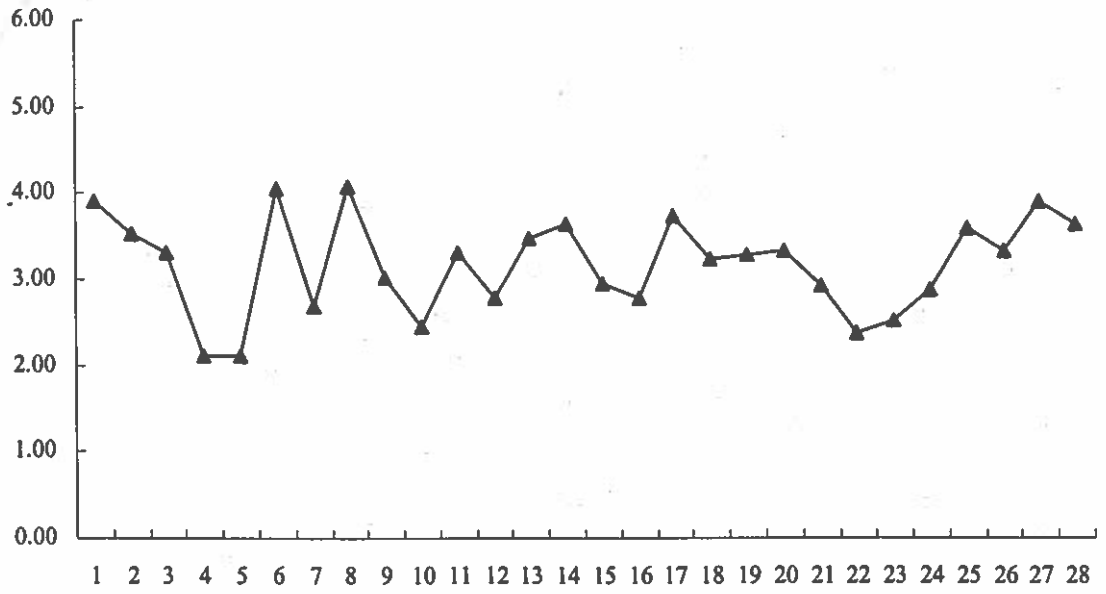

Figure 4. Means for Task Difficulty