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# Speaking and Writing Proficiency of International Graduate Students in Elective, Mentoring Environments

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## ABSTRACT

Technical communication skills are critical for non-native speakers who must study and interact in English-only professional settings. Often, formal instruction to pass admission thresholds and other minimum requirements are not sufficient to attain proficiency. This paper describes elective, long-term programs that provide systematic opportunities for both speaking and writing development. These programs are tailored to international students through the key features of individualized activities, applied task-oriented practice, and social interaction. The elective programs attract and retain participants with interest and need for high-level language proficiency. Program evaluations show that participating graduate students give primary credit for their growing fluency to individualized practice and to sustained interaction with native speakers.

## I. INTRODUCTION

International graduate students have a significant presence in science and engineering degree programs throughout North America. In addition to the rigors of graduate study and research and the distraction of cultural differences, most of these students must write, read, speak, and listen in a foreign language. Their English-only activities include classroom assignments, research interactions, and other professional tasks. Many desire to work in U.S. companies after graduation. A proficiency in American English clearly facilitates participation in academic and professional worlds and may be critical for getting the chance to hold a professional position within the U.S. after graduation. Potential international students must pass university admission thresholds for language ability, but their entrance English skills are often far from proficient. Their prior language training may have emphasized written English and may have ignored the technical expectations of science or engineering. For instance, command of English grammar and syntax does not in itself give the ability to meet rhetorical needs [1]. Problem areas can include poor listening and oral comprehension skills [2], unfamiliarity with expressions and

terminology, and inexperience with technical writing techniques. Consequently, these non-native speakers of English need further long-term means to develop language skills that are tied to their engineering and scientific careers. While some students are interested primarily in educational advancement and are satisfied with functional language skills, others have interests and needs for high-level language proficiency. Universities have a vested interest in assisting this segment of their student population.

Common recommendations for continuing communication development are more formal classes, informal activities, or advisor support. These approaches are often unrealistic since students may not have the time or money for added courses, the confidence to exploit unfamiliar social opportunities, and a research advisor with mentoring abilities in communication. The needs for a student working toward proficiency are different and more varied than the needs of a student building rudimentary skills, e.g., grammatical competence. The context in which a technical student works can be tied to language development with beneficial results [3]. A contention of ESP (English for Specific Purposes) instructions is that [4] "Uniquely tailored programs are far more efficient and effective for learners who require special skills to carry out highly specialized tasks for which general English may not prove sufficient." Also, isolated development activities by a student are not likely to produce comprehensive improvements. Therefore, programs that target English proficiency must work within the practical constraints on student resources and must be flexible, focused, and ongoing. In short, what key characteristics should an effective *proficiency* program possess? The speaking club and a writing center described in this work are not unique programs in themselves, but the internal focus and structure of these programs offer an example of effective organization and emphasis for proficiency training.

This paper gives insight into the needs and interests of international graduate students who are working toward English proficiency. An assessment process was performed for students in successful language-support programs at the University of Missouri-Rolla. These elective, long-term student programs are targeted at international graduate students who are non-native speakers of English. Characteristics of effective program structure are discussed based on the assessment of current students and our experience within a predominantly technological university. Speaking and writing development is provided in systematic program environments that include highly tailored mentoring relationships and significant interaction with native speakers of English. Furthermore, the programs are self-paced and the communication content is related to student interests and academic work. Oral communication development is promoted in weekly speaking clubs associated with the Toastmasters International organization. Native and non-native speakers practice various speaking tasks and

peer evaluation. Written communication development is promoted through a tutoring service in the campus writing center. Students bring drafts of academic or research assignments as examples for assessment of writing skills. Both programs include an explicit one-on-one relationship with experienced mentors and give special attention to the needs of international students. Both graduate and undergraduate students participate in these programs, but the majority of international participants are graduate students. We discuss the communication abilities of beginning international graduate students, the elective development programs, and the program assessment.

## II. COMMUNICATION ABILITIES OF BEGINNING GRADUATE STUDENTS

The University of Missouri-Rolla (UMR) specializes in science and engineering degree programs with complementary programs in liberal arts and business. International graduate students comprise approximately fifteen percent of the total student population. For international students that are non-native English speakers, the admission process includes documentation of English ability. A minimum score of 550 on the Test of English as a Foreign Language (TOEFL) or satisfactory completion of an English-as-a-Second-Language (ESL) program is the normal requirement. Additionally, students that work as Graduate Teaching Assistants must pass a workshop that includes instruction and evaluation of English fluency.

The majority of our students are engineering and science majors. Graduate programs in these areas are rigorous technically and contain no formal communication coursework after meeting the admission requirements. Lecture concepts typically require more mathematical understanding than reading comprehension. Presentations and written assignments are not required in all courses and are rarely a majority of the grade if they are required. Also, research literacy assignments expose students to a narrow professional style of language and research work assignments are often somewhat solitary activities. The graduate students tend to be very focused on meeting schedules and achieving immediate results. They tend to have poorer oral skills than written skills and to have limited social interaction outside of formal academic activities.

## III. ELECTIVE DEVELOPMENT ACTIVITIES

The graduate students who are non-native speakers of English must cope with an array of communication tasks—course lectures, group discussions, teaching assistant duties, library usage, research papers, professional presentations, etc. While the entrance structure of testing, workshops, and ESL instruction ensure a minimal ability in spoken and written English, many students struggle with communication demands. Additional formal development activities such as more ESL coursework may not focus on higher rhetorical issues of communication, may not address weak areas directly, may not accommodate scheduling expectations, and may not give sufficient practice. Other informal development activities such as social interaction with native speakers are limited by the introversion of many students and their discomfort with unfamiliar situations. Also, the research advisor, the main professional mentor of most students, may not have the ability or time to provide significant help

with communication techniques. Consequently, good options are elective development activities that provide some structure for practice and that promote extra social interaction with native speakers.

### A. Toastmasters International Clubs

The UMR Toastmasters Clubs provide an environment for developing speaking skills. Two clubs are part of the campus community—the first is a student-only club and the second includes students, staff, faculty, and community members [5]. The clubs were chartered in 1982 and 1987, respectively. The student-only club has twenty-two members, of which fifteen are international graduate students. The open club has thirty-two members, of which seventeen are international graduate students. Since 1999, about 100 international students have participated in the clubs. There is a mix of members just beginning membership and members with several years of experience. If international students join, they typically maintain membership for multiple semesters, often until graduation. Over seventy percent of non-graduating international members renewed during the last membership period. Faculty and staff advisors provide additional guidance. While the “Toastmasters” name and the typical Toastmasters club are associated with non-technical speaking such as the dinner-speech genre, the meeting format allows much greater flexibility. Most club activities involve techniques and experiences in the context of technical and professional speaking, e.g., conference-style presentations, lectures, and interviews, due to the campus technological mission. The audience and evaluators are often asked to assume a particular role. The weekly meetings for both clubs are structured into three parts: prepared speeches, short impromptu speeches, and peer oral evaluations. The assignments rotate among the members. Other special activities include speech contests and training seminars. Membership includes educational speech literature, manual guides for the prepared speeches, and a monthly magazine from the parent organization [6]. The membership dues are modest in comparison to formal classes and workshops. Also, participation can be extended throughout a student’s academic career.

The clubs are promoted to the international student population as an elective activity for English training and to the general student population as an elective activity for speaking development. The environment is an excellent complement to formal training in English and speech. The effectiveness of the club experience stems from three key characteristics.

- *Flexible, Self-Paced Environment*—The scheduling of speeches and other assignments is made per member request. Attendance may be regular or irregular. Assignments requiring outside preparation, e.g., manual speeches, are mixed with assignments requiring no preparation, e.g., impromptu speeches. Our typical student member averages between one and two speeches per semester, while a few students do one speech per month.
- *Task-Oriented Communication Activities*—The assignments give a systematic process for improvement. Manual speeches have objectives that focus on aspects of speaking, e.g., organization or gestures. The topics of speeches are up to the members and often relate to other interests or activities such as student research. The other meeting assignments develop listening skills and teach meeting protocols.
- *Mentoring and Peer Involvement*—The meetings involve a large group with mixed international and American backgrounds. Since participation is expected at all meetings and

speaking naturally reveals personality, the meetings promote strong social interaction. In addition, experienced members are assigned to new members to guide the orientation process and faculty and staff advisors provide additional mentoring. Grades are not given, but positive suggestions for improvement are an expected part of club culture.

The Toastmasters affiliation provides other benefits that encourage and reward membership. Many of our students are motivated to participate by employment concerns, especially if they are planning to seek American jobs. Their proactive activity is a résumé enhancement that is widely recognized by American employers. Non-student clubs are found worldwide and are often sponsored by corporations as approved training activities. Consequently, students have a long-term option for networking and communication development.

### *B. Center for Writing Technologies and Moeller Writing Studio*

The UMR Center for Writing Technologies is an academic support organization created in 1996 [7]. Its purpose is to assist students with writing assignments in courses and with other professional writing such as theses. The assistance emphasizes the techniques and expectations of technical writing tasks due to the campus technological mission. The center staff consists of English professors, non-tenured professional writing mentors, and student peer tutors. One writing mentor is sponsored by the School of Engineering. This Engineering Liaison conducts workshops for classes, trains graduate teaching assistants, and provides dedicated tutoring assistance to engineering students. A second writing mentor provides tutoring services to all students, but he is specifically charged with assisting international graduate students. The student peer tutors represent a cross section of UMR disciplines and are trained in technical writing techniques and expectations. The one-on-one tutoring by staff or student tutors is limited to discussing a draft work, evaluating the strengths and weaknesses of writing style, and suggesting strategies for improving writing technique. The tutors and mentors must balance an understanding of writing principles with a familiarity with technical terms and phrasing. The facility offers tutoring during open studio hours and by formal appointment and includes an open computer word-processing laboratory to promote irregular consultations during writing. All services are provided free to any UMR student.

The writing center is promoted to the student population as a resource for editing academic papers and research documentation. For students who are non-native speakers of English, the center provides English instruction as part of the overall writing instruction and builds on the knowledge gained in earlier formal training. The effectiveness of the tutoring experience stems from three key characteristics.

- *Flexible, Self-Paced Environment*—The tutoring is initiated at the student's request. The degree of help can range from a minor consultation while using the computer laboratory to a full critique of a draft during a scheduled appointment. The typical international student user will interact with a same tutor several times during the completion of their thesis or first professional paper.
- *Task-Oriented Communication Activities*—The student users are required to bring a draft or a sample of their writing for one-on-one evaluation. The tutors have the dual objectives of improving the writing and instructing the student on the writing process. In particular, techniques to effectively edit and proofread papers are emphasized. For a critique of larger

works, an appointment can be scheduled within twenty-four hours after the draft is submitted.

- *Mentoring and Peer Involvement*—The students are encouraged to meet with the same tutor if multiple sessions are requested. The student tutors provide an important peer interaction and handle most of the open tutoring sessions. The writing mentors provide most of the tutoring for larger works such as theses and professional papers. One mentor has actively become involved in international student life such as cultural dinners and festivals. The added social interaction publicizes the tutoring service and promotes repeat visits.

The writing mentor charged with assisting international graduate students has a key role in meeting the special needs of these students. In addition to his social acceptance in several of the international student circles, he has specialized in the problems of non-native speakers. The cultural perspectives and language patterns of non-native English speakers should be considered when identifying language problems and suggesting potential techniques [8].

## IV. ASSESSMENT OF PROGRAM EFFECTIVENESS

International graduate students involved in the Toastmasters clubs and the writing center were contacted to assess the effectiveness of these elective, mentoring programs. The assessment objectives were to identify what subset of the overall international student population is active and to determine why these students participate and maintain participation in our programs. Emphasis was given to their past language training, their perceived proficiency, and their program involvement. Twenty international students currently active in these programs were surveyed and a subset of these students was interviewed. The surveys were conducted at the end of meetings for the Toastmasters students and through e-mail for the writing center students. Scheduling conflicts and travel prevented obtaining responses from all students. The interviews were conducted in person for ten selected students. These students were chosen from the most active program participants and they represented a cross section of nationalities. All students contacted were involved in at least one elective program and a few were involved in both. Nine of the twenty students were aware of both Toastmasters and the writing center.

The first assessment tool was a survey questionnaire that consisted of four parts—Demographics, Activities, Opinions, and Comments. Different surveys were prepared for the Toastmasters subjects and for the writing center subjects. The Parts A, B, and C were identical. The two versions differed in the wording of the Part D “Comments,” which are given in Figure 1. The writing center version of the questionnaire contained questions about the subject's experiences with the writing center while the Toastmasters version dealt with the comparable experiences related to the two Toastmasters organizations on campus. The interview questions are shown in Figure 2. This assessment tool was aimed at the students' prior training in English and their language-related experiences while at UMR.

### *A. Student Survey*

The Demographics, Activities, and Opinions sections of the survey questionnaire consisted of primarily multiple-choice questions. They began with requests for information such as “Country of origin” and proceeded to more reflective questions such as “Do

**COMMUNICATION QUESTIONNAIRE**

**PART D: Comments (Toastmasters Version)**

What is the greatest factor or the most important factors in improving your spoken and written American English skills while at UMR?

Describe the role of Toastmasters in your development of American English skills.

How did you hear about Toastmasters, why did you join Toastmasters, how has Toastmasters met or not met your expectations, and why have your friends decided to participate or not participate with you in Toastmasters?

Other comments regarding your development of English skills while at UMR?

Are you aware of the UMR Writing Across the Curriculum Center and have you used it for improving your writing?

.....

**PART D: Comments (WAC Center Version)**

What is the greatest factor or the most important factors in improving your spoken and written American English skills while at UMR?

Describe the role of the UMR Writing Across the Curriculum (WAC) Center in your development of American English skills.

How did you hear about the UMR WAC, why did you use the UMR WAC, how has the UMR WAC met or not met your expectations, and why have your friends decided to participate or not participate with you in the UMR WAC?

Other comments regarding your development of English skills while at UMR?

Are you aware of the UMR Toastmasters Club and have you used it for improving your speaking?

*Figure 1. The two versions of section D “Comments” in the student questionnaire targeted the communication experiences of the students.*

**COMMUNICATION INTERVIEW**                      **NAME** \_\_\_\_\_

- Please respond to the following questions as honestly as possible. We are seeking to understand the current and needed resources for developing communication skills among international students.
- Your answers may be used directly or indirectly (through analysis) in papers, reports, etc., but your name will be kept confidential. Your name will only be available to the persons compiling and analyzing the information.

What was your TOEFL score?

What formal training in English did you have before arriving in the United States and UMR?

What one or two factors contributed most to improving your English since arriving at UMR?

If UMR were to add a new service for international graduate students with the goal of assisting them with English fluency, what service do you recommend?

What advice about English proficiency would you give other international students preparing to come to UMR?

*Figure 2. Questions included in student interviews.*

you have an American that you consider a mentor?” to aid the student in becoming comfortable with the survey. The Comments section, see Figure 1, required open-ended, written responses.

The Demographics showed a student profile similar to the overall cross section of international students on the UMR campus. The

male-to-female ratio was 13 to 7 and the ages were twenties and early thirties. The countries of origin were China 10, India 5, Thailand 2, Germany 1, Turkey 1, and Korea 1. (Indian and Chinese students have the largest on-campus populations with 271 and 172 students, respectively.) Seven majors were represented from engineering and

science degree programs; the largest numbers were five for mechanical engineering and four for engineering management. Our program participants were dissimilar to the overall campus in two categories. Our programs preferentially involve Ph.D. students (the doctoral/masters mix was about one to one) and preferentially involved students planning to stay and work in the United States for at least two years after graduation. Eighteen of the twenty surveyed had this intention.

The next two sections provide insight into the students' communication as international students in the United States. These sections give details about their current level of English interaction and about their training in English. Figure 3 shows the results for Activities. A majority read English-language publications regularly and had attended professional conferences in the United States. More than half of the students spent less than twenty-five percent of their daily activities with Americans and three out of four spent less than twenty-five percent of their social activities with Americans. Also, most of the students had written a professional paper in English,

but most had not taken any formal English or technical writing classes while at UMR. Figure 4 shows the results for Opinions. When not in class, half of the students spoke English less than one-quarter of the time. Many of the students had a language mentor, exclusive of other students, outside of our programs and uniformly valued the relationship as a means of improving their English skills. These mentoring relationships were with a mix of faculty and staff who went beyond expected student interactions and of off-campus individuals who linked with the students through varied activities such as church or "International Friends" programs. About two-thirds of the students felt that they needed additional English training upon arrival at UMR, but they were mixed in regard to English affecting academic work. However, they strongly felt that English fluency would aid their professional career.

The Comments section sought insight into the students' experiences at UMR and in particular with the subject programs through five questions.

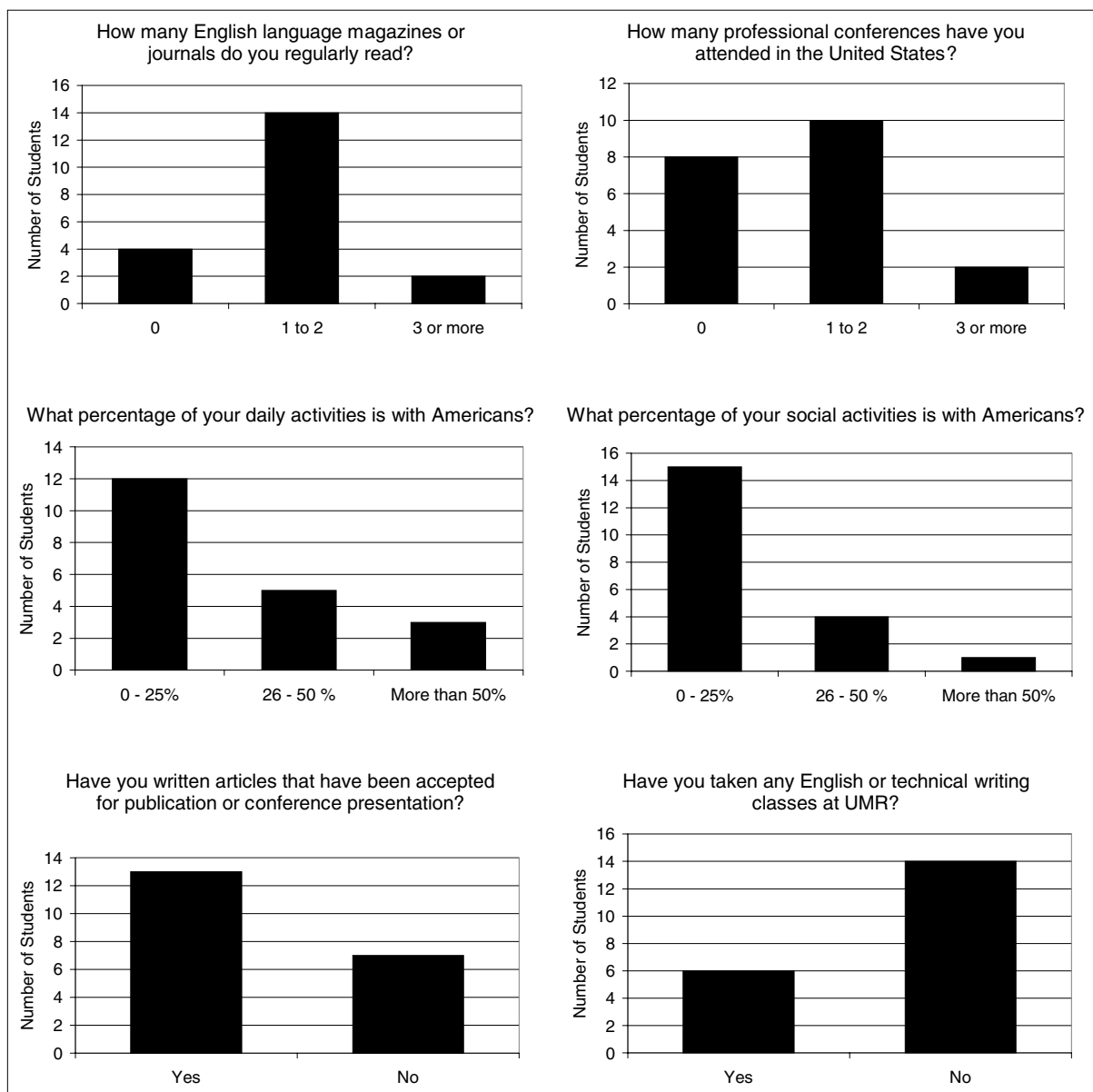


Figure 3. Survey results for Activities section (N = 20).

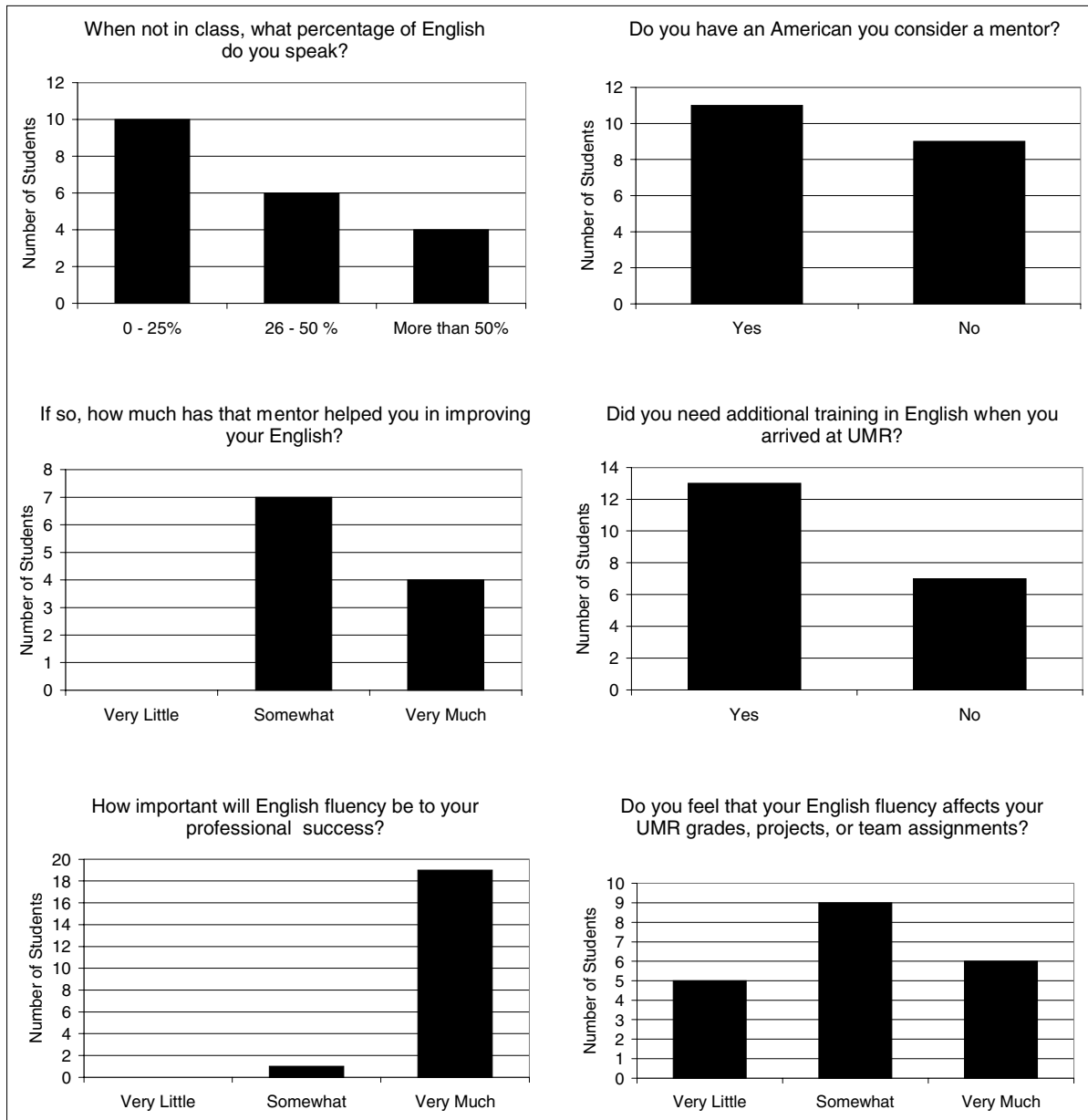


Figure 4. Survey results for Opinions section ( $N = 20$ ).

- The students tended to emphasize interactions and practice, rather than a more formal classroom setting as being the most important vehicle for their increased fluency. Sample responses were joining Toastmasters (three responses), “writing a journal,” writing for the campus newspaper, “practice, practice, practice,” working as a teaching assistant, “interacting with Americans,” and “watching the History Channel.”
- When responding to the role of Toastmasters in their speaking development, the students listed a wide range of aspects including “vocabulary development,” “overcoming nervousness,” “organize my ideas,” and “English grammar.” The most common response was overcoming nervousness and anxiety and one dissenting response was that “it helped me to improve my skills at giving speeches. It really did not help me to improve my American English.” When responding to the role of the writing center in their speaking development, the students mainly listed “polishing my reports for class,” and English grammar.
- Most student responses to why they became involved in the Toastmasters and writing center programs indicated that, while participation was voluntary, their advisors or an instructor made a personal recommendation. Several students said that friends encouraged them to participate. One student was motivated by the opportunity to make American friends. Typical responses as to why some friend did not join them in participating were “Some of my friends are too busy and some are too shy” and “They [other students] didn’t because they were expecting short cuts to improve their English, which is impossible in the world.”
- Several students added under the “other comments” question that time and practice were necessary to measurably increase their English proficiency. They viewed improvement as a long-term effort. One said, “Constant help is appreciated.”
- When asked about the companion program, i.e., Toastmasters for the Writing Center participants and vice versa, the

students were generally aware or were interested in learning more about added informal programs.

### B. Participant Interviews

The interview consisted of open-ended questions as shown in Figure 2. The authors recorded the answers and often asked for clarification or more detail.

- The students had all taken the TOEFL as a means to gain university admission. Several mentioned that preparation for the examination did not help them significantly improve their English. One respondent said, "Attended TOEFL and GRE prep classes. Felt that scores often indicate a better ability than is the case."
- The students generally had several years of regular English coursework. Most had taken elective language classes to prepare for coming to a foreign university. The majority of students felt much more comfortable with written English than with spoken English. The exceptions were students with significant prior experience such as attending undergraduate universities with English-only instruction. The Indian and European students tended to be in this category and were equally comfortable with spoken and written English.
- They valued interaction and mentoring above all other factors in attaining English proficiency. Several responses indicated that practice outside of the classroom and that proactive involvement outside of nationality cliques were necessary. They did not feel that additional formal coursework in English would be helpful or convenient. One said, "ESL class on campus. Not so much the contents as the opportunity to interact," and another "Presentations for research sponsors and conferences. Writing papers with advisor."
- The students did not generally have suggestions for additional campus language programs. The few suggestions were for additional types of mentoring or systematic group interaction with native speakers. The common themes were, "There is not enough time available for 'extra' language skills or courses," and "We need to take part in many activities for gradual benefits."
- The student advice to other international students was primarily that practice and interaction with native speakers was needed.

## V. CONCLUSION

The international graduate students in our programs supported our underlying assumptions concerning the background and needs of a student seeking English proficiency. Typically, these students have years of classroom training in English language fundamentals and have a functioning ability, especially with written English. However, they overwhelmingly feel a need for improving their language skills and choose not to pursue more formal English coursework. They regard proficiency development as a long-term effort and realize that interaction and practice are important aspects of this effort. Finding a means to develop proficiency is complicated by the range of needs, e.g., grammar, nervousness, organization, and editing, and by compelling academic and research obligations. Presumably, our program participants are among the most proactive and extroverted international students with regard to English activities. Yet, they spend a small percentage of their time speaking

English and interacting with Americans. While they are not looking for short cuts, they appreciate language activities in which they can also accomplish other goals, e.g., preparing for an assigned presentation or paper. Hence, programs and activities with a technical context are particularly appropriate. These observations are limited to the students involved in our programs. The backgrounds and needs of international students who do not elect to participate in Toastmasters or the writing center are likely to be similar, but a comprehensive view may be obtained through future research. Differences in background and needs among the various nationalities were not part of this work and would also be a subject for future research. Based on our observations, our elective programs tend to attract proportionately more Ph.D. students than masters students and more international students aiming at a post-graduation job in the United States. These students may have adopted a longer view of their career paths, have more desire for ongoing training vehicles, and have greater motivation for attaining English proficiency.

International students who are non-native speakers of English have long-term language training needs. Formal English coursework and testing are necessary to ensure that the students can function in American classrooms. However, formal language training can be poor or inconvenient means for developing proficiency as opposed to developing rudimentary skills. Supplemental elective activities are useful options for meeting the needs of these students. A speaking club and a writing center are not unique programs in themselves, but the internal focus and structure of our programs offer an example of effective organization and emphasis. Both the speaking and the writing elective programs have targeted international students for several years and have adjusted the development activities based on this experience. The program structure directly addresses the technical presentation and writing interests of our student population. Also, the programs have been further modified to include significant mentoring activities. Since the programs are elective and require active participation, our excellent student retention is a measure of effectiveness. Furthermore, our program evaluations show that a large group of UMR international graduate students maintain participation in the Toastmasters clubs and in the Center for Writing Technologies and credit their growing English proficiency to these and similar experiences. Their growth in confidence and skill is facilitated by the program environments in which there is little penalty for trying different techniques and failing. Such a sustained activity provides a training role that formal classes and seminars and supervisor guidance cannot easily or efficiently provide. In particular, the effectiveness of the speaking and writing development experiences stem from three key characteristics: flexible and self-paced environment, task-oriented communication activities, and mentoring and peer involvement.

Our assessment work shows that international graduate students have distinct needs and interests regarding language proficiency development. The internal characteristics of the speaking club and the writing center are models of successful program structure for meeting proficiency needs of international students.

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