A Web-Based Initiative to Infuse English Across the Curriculum for Deaf and Hard-of-Hearing Students

June 26, 2001

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Abstract

The presenters will demonstrate their "Supporting English Acquisition" (SEA) web site and will outline a collaborative, web-based effort to infuse English teaching principles and methods into technical, math, science, social science, and humanities courses taken by students at the National Technical Institute for the Deaf (NTID). This broad-based effort involves faculty in NTID's Center for Research, Teaching, and Leaning, the Center for Arts and Sciences, and the Center for Technical Studies, as well as peer tutors in the NTID Learning Center. Because English remains a formidable challenge to most NTID students, the goal of this effort is to provide teachers with on-line professional development which will enable and empower them to promote their students' English skill development within the naturalistic context of their specific course content. The presenters will provide an overview of the current expansion of the SEA site and demonstrate the site's modules, which contain grammatical summaries, interactive guided practice, and suggestions for supplementing course content with easy-to-implement English activities. The presenters will also summarize the stages of the broad-based "English across the curriculum" initiative which employs the SEA site and which includes a needs assessment for continued expansion of the site, the authoring of new site modules by English-teaching faculty, the implementation of site suggestions by NTID faculty, the monitoring of students' English progress in content classrooms, and a summative evaluation of the initiative.

The Supporting English Acquisition Project

The SEA Project involves the infusion of English teaching principles and methods into technical, math, science, social science, and humanities courses taken by students at the National Technical Institute for the Deaf. Although NTID students receive rigorous English language instruction in programs offered by the NTID Center for Arts and Sciences and the Center for Baccalaureate and Graduate Studies, English skill development remains a formidable challenge to the majority of NTID students and is a major factor affecting student retention, academic success, prospects for gainful employment, and later success on the job. Within the RIT environment, faculty find that the English receptive and expressive skill levels of deaf and hard-of-hearing students limit those students' access to information in the classroom. In view of these factors, NTID Vice President Davila and Dean Hurwitz have articulated the need to infuse English teaching principles throughout the college curriculum in order to enhance NTID student success (*NTID's Blueprint: Strategic Objectives 1999-2004*).

In response to this need, Gerald P. Berent and E. William Clymer began in 1999 the development of a professional development web site--"Supporting English Acquisition," www.rit.edu/~seawww. The site is designed to teach educators how to promote deaf students' English skill development. It summarizes the characteristics of specific problematic English structures and processes, discusses English language research implications, offers interactive guided practice, and suggests how to support English acquisition in content courses. At this point in time, the SEA web site needs to be expanded, refined, and employed by faculty serving NTID students in technical, math, science, social science, and humanities courses. Such an effort will constitute the first concrete step toward implementing an "English Across the Curriculum" initiative at NTID.

The SEA project undertakes strategic expansion of the SEA site by enlisting the collaborative involvement of several English-teaching NTID faculty members to author specific modules thus far not included in the site's contents that focus on a variety of problematic English structures and processes. Once the site has been appropriately expanded, its methods will be tested by faculty serving NTID students in special "Grammar Group" courses, and it will be used experimentally to help train "peer tutors," NTID students with strong English skills who help other students with English reading and writing assignments in the NTID Learning Center. Subsequently, NTID faculty volunteers who teach in technical programs in the Center for Technical Studies (CTS) and who teach math, science, social science, and humanities courses in the Center for Arts and Sciences (CAS) will visit and study the SEA site's modules as a professional development undertaking. They will familiarize themselves with the characteristics of specific problematic English structures and processes and study suggestions for incorporating English teaching principles and methods into their own courses. They will then implement some of the site's suggested applications into their courses, monitor their students' performance and reaction to the new English-related course components, and report on the effectiveness of their initiatives.

One example of a problematic structure to be addressed is the "relative clause," as in _A camera which has a solid-state image sensor_ is a digital camera. Currently, large numbers of deaf students do not have an adequate understanding of the grammatical facts and functions of sentences containing relative clauses. Suggested SEA site activities will contribute to improving students' reading comprehension of relative clause sentences, which are prevalent in technical discourse, and to the appropriate usage of such sentences in written expression (e.g., in lab reports). Activities undertaken within the context of specific course content will help students to manage the grammatical components of relative clause sentences and to understand the important role of the relative clause as a modifier.

The participating faculty's summative evaluation of their efforts to implement SEA site suggestions will contribute to the project's final report that will be shared with faculty and administrators in a variety of forums. Successful outcomes of this project will validate the use of a specific medium, the SEA web site, for infusing English teaching principles and methods throughout the NTID curriculum for enhancing the English language skills of NTID students.

Rationale for the SEA Ph

There is no formal mechanism in place to implement the infusion of English teaching principles and methods throughout the NTID curriculum. The SEA Project is an ideal mechanism for initiating a tangible English Across the Curriculum effort. Importantly, tf4he SEA web site is an

already existing vehicle whose expansion and refinement will make this effort readily implementable.

The SEA Project is directly relevant to required NTID college, center, and department competencies. English language instruction is an integral component of the NTID curriculum, and English competency determines NTID students' access to degree programs and is a major factor in student retention, academic success, prospects for gainful employment, and later success on the job.

This project is relevant to any and all faculty who teach deaf and hard-of-hearing students in view of the major challenge that English poses to these students and the critical need to foster these students' English skill development at all level4s of their education. Success on this project can be readily transferred to other RIT faculty through the SEA site web-based medium and through the endorsement of the Centers whose faculty and administrators have been involved in the project. More broadly, the SEA site's applications are relevant not only to the NTID faculty described in this proposal, but to RIT faculty serving cross-registered NTID students and to any professionals serving deaf students nationally and internationally.

The faculty to be involved in this project have strong credentials in their disciplines and years of experience teaching deaf and hard-of-hearing college students. Most are tenured, senior faculty members. The English faculty who will author SEA modules are all contributors to the development of the NTID English curriculum and have written English instructional materials. The technical, math, science, social science, and humanities faculty who will implement the SEA site recommendations in their courses are all specialists in their discipline areas.

Targeted Learners

The targeted learners of this project are deaf and hard-of-hearing NTID students enrolled in courses offered through CAS and CTS. Through CAS, the targeted learners will be students in select math and science courses offered by the Department of Science and Mathematics and in select social science and humanities courses offered by the Department of Cultural and Creative Studies. Through CTS, the targeted learners will be students in select technical courses offered through some of the following programs: Applied Art and Computer Graphics, Applied Computer Technology, Business Occupations, Computer Integrated Machining Technology, Digital Imaging and Publishing Technology, Healthcare Billing and Coding, and Ophthalmic Optical Finishing Technology. CTS courses also include the Job Search and Employment Seminar courses. The targeted students are pursuing undergraduate Diploma, A.O.S., or A.A.S. degrees.

Of the approximately 650 NTID students pursuing these degrees, the number of learners impacted by this initial project ranges between 200 and 400. These estimates are based, at the low end, on 10 faculty volunteers x 2 courses in which they implement SEA site recommendations x 10 students per class and, at the high end, on 20 volunteers x 2 courses x 10 students per class. These figures assume the possibility that the same student might be served in more than one of the targeted courses.

Anticipated Impact on Teaching and Learning

Faculty's incorporation of English teaching principles and methods into NTID content courses through the guidance of the SEA web site should have a significant impact on both teaching and learning. By supplementing their course materials with English-related activities, faculty will be taking a bold first step toward addressing the need articulated by Vice President Davila and Dean Hurwitz to infuse English teaching principles broadly throughout the NTID curriculum.

The impact on teaching is that participating NTID faculty members will enhance the delivery of their instructional activities by incorporating simple suggestions from the SEA web site that will provide their students with guidance and practice on essential English language structures and processes while simultaneously delivering course content. Activities will be simple and logical (e.g., guiding students to question and respond to course content using correctly formed English questions, guiding students to elaborate technical concepts using modifying clauses, expressing technical procedures with logical ordering using appropriate English verb tenses, etc.). Importantly, these activities reflect natural English language usage and do not require of faculty any background in English language teaching. Accordingly, by taking these initial steps to infuse English into the curriculum, faculty will come to feel empowered and confident to address English skill improvement at the same time that they deliver course content.

The impact on learning will be equally significant. Students will receive "English instruction" at the same time that they receive content instruction. Because good English skills are critical to deaf students' academic and employment success, students will derive the benefit of English skill enhancement not only in their NTID English language courses but simultaneously in their content courses. Ultimately, the considerable increase in time devoted to English language practice—in naturalistic settings related to students' major subject areas—is expected to result in a significant improvement in students' English language skills. Furthermore, the inclusion of an English focus in their content courses will signal to students that good English skills are an integral part of technical training and job skills. This message should increase student motivation to improve in English.

Measuring the Impact, Reporting the Findings, and Sharing the Outcomes

The ultimate impact of this proposed project will be measured through a summative evaluation at the end of spring quarter 2002 consisting of a survey and focus groups with participating faculty. This evaluation will gather information on faculty's utilization of the SEA site, including samples of any new course activities they employ, perceptions of efficacy, and views on students' performance and reactions. The chances of a positive impact will be enhanced through the needs assessment performed during the pre-grant period, which will guide the planning of specific SEA site modules based on faculty's perceived needs for relating the content of the SEA site to their specific programs. The chances of a positive impact will be further enhanced during the winter quarter testing of new SEA modules by Grammar Group faculty and peer tutors to guide further refinement before the spring quarter implementation of SEA site recommendations in content courses.

Findings will be reported in a final written report in June 2002 summarizing the activities and outcomes of the SEA project with recommendations for future utilization. These findings will also be shared in meetings with CAS chairs, CTS chairs, and participating CAS and CTS faculty members. After the grant period, the findings will also be shared during academic year 2002-03 in

a "Brown Bag" presentation sponsored by the Center for Research, Teaching, and Learning and in other forums.

The SEA Project Timetable

1. A special program is being developed which will facilitate conversion of text to HTML for posting modules to the SEA web site.

2. A needs assessment survey has been completed by NTID faculty who teach content courses. This needs assessment will guide the development of new SEA site modules and the revision of existing modules and will help to guarantee the relevance and usefulness of SEA modules by participating faculty.

3. Four NTID English faculty members have been recruited to author new modules for the SEA web site. The new modules will be authored during summer 2001.

4. The newly authored modules will be edited and posted to the SEA web site during fall 2001.

5. During fall 2001, NTID math, science, social science, and humanities faculty members will be invited to participate in the SEA Project.

6. During winter 2001-02, faculty teaching "Grammar Group" courses for the NTID English Department will test SEA site applications for teaching Grammar Group students.

7. During winter 2001-02, NTID student "peer tutors" will test SEA site applications for assisting NTID students with English in the NTID Learning Center.

8. Interviews and focus groups will be conducted with Grammar Group faculty and with peer tutors. These interviews and focus groups will provide formative evaluation of the SEA site and guide further refinement of the site's modules in winter quarter.

9. During winter 2001-02, participating CTS and CAS faculty members will be given written guidelines for accessing and using SEA site modules and for incorporating SEA site applications into NTID content courses. These faculty will then begin studying SEA site modules on line and will begin planning specific implementations of SEA site recommendations in their spring quarter courses.

10. During spring 2002, participating CTS and CAS faculty will implement SEA site English teaching principles into their content courses. They will keep written notes on their utilization of SEA site modules and their perceptions of the efficacy of incorporating SEA site principles into their course activities. They will record details about student performance on activities based on SEA modules and students' reactions to the new English-related course components.

11. In May 2002, participating CTS and CAS faculty will provide a summative evaluation of their SEA-related activities through a survey which asks about SEA site utilization, perceptions of efficacy, and students' performance and reactions (information logged in faculty's notes). Focus groups will also be conducted to gather additional feedback from faculty. Faculty will also provide samples of course materials that incorporated SEA concepts.

12. In June 2002, a final written report will be submitted summarizing the activities and outcomes of the SEA Project with recommendations for future utilization. Oral reports will be shared in meetings with CAS chairs, CTS chairs, and participating CAS and CTS faculty members. The results of the SEA Project will also be shared in professional presentations and publications.

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