DOCUMENT RESUME

ED 422 690 EC 306 652

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TITLE Assistive Technology Training for Occupational Therapy. Final Performance Report.
INSTITUTION Colorado State Univ., Ft. Collins. School of Education.
SPONS AGENCY Special Education Programs (ED/OSERS), Washington, DC.
PUB DATE 1997-07-14
NOTE 8p.
CONTRACT H029F30064
PUB TYPE Reports - Descriptive (141)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Appropriate Technology; *Assistive Devices (for Disabled); *Disabilities; Educational Cooperation; Elementary Secondary Education; Higher Education; *Inservice Teacher Education; *Occupational Therapy; Outreach Programs; Postsecondary Education; Professional Development; Professional Personnel; Professional Training; Program Effectiveness; Rural Areas; Speech Language Pathology; Teamwork; *Training Methods

ABSTRACT

This report describes the outcomes of a 4-year project undertaken by the Department of Occupational Therapy at Colorado State University in cooperation with numerous school districts and the Colorado Department of Education. The Assistive Technology Training For Occupational Therapy (ATTOT) prepared a total of 20 related service professionals (19 occupational therapists and 1 speech language pathologist) to address the technology-related needs of children and youth with disabilities. As part of their training, the students shared their acquired expertise with others and delivered inservice training and support to regular and special educators (including related service personnel), and families. This outreach effort reinforced and expanded the use of assistive technology among students with disabilities in the public schools in the largely rural Rocky Mountain region. Outcomes of the program included: (1) a total of 20 graduate students completed participation in the assistive technology program; (2) all participants worked with public school teams in 10 different school districts to provide assistive technology training and services; and (3) a total of 388 school team members received consultative or collaborative services directly from the participants in the program, and 154 students with disabilities in 40 schools have been impacted as a result of this collaborative effort. (CR)

FINAL PERFORMANCE REPORT

Project #H029F30064
Assistive Technology Training for Occupational Therapy
July 14, 1997

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I. PROJECT SUMMARY

To meet the letter and intent of federal special education and technology laws, highly trained personnel are needed to assess individual technology-related needs, identify and present an array of low and/or high tech solutions, identify funding opportunities, provide training for individuals users and support persons, and monitor long term effectiveness and needs. The **ASSISTIVE TECHNOLOGY TRAINING FOR OCCUPATIONAL THERAPY(ATTOT)** prepared a total of 20 related service professionals (19 occupational therapists and one speech language pathologist) to address the technology-related needs of children and youth with disabilities. This four year project was undertaken by the Department of Occupational Therapy at Colorado State University in cooperation with numerous school districts and the Colorado Department of Education.

As a part of their training, the students shared their acquired expertise with others and delivered inservice training and support to regular and special educators (including related service personnel), and families. This outreach effort reinforced and expanded the use of assistive technology among students with disabilities in the public schools in the largely rural Rocky Mountain region.

II. PROJECT STATUS

GOALS 1 and 2

Note: Goals 1 and 2 will be described together. They were the most central to the ATTOT and related directly to the training/education of students.

Goal 1: Prepare 7-10 occupational therapists at the post professional masters level (occupational therapists seeking an advanced degree) to address the technology-related needs of children and youth with disabilities.

Goal 2: Prepare 10-13 occupational therapists at the professional masters level(students seeking entry into the profession) to address the technology-related needs of children and youth with disabilities.

1. A total of 20 graduate students have either partially or totally completed participation in the ATTOT program. Nine have completed all requirements and are currently working as occupational therapists in school related services. One is working as a speech therapist in the public schools. Ten have completed all coursework and are currently working on their theses. All nineteen of these students are either completing their OT-required internships or working with school-aged children in public schools or programs that support public schools.

2. All ATTOT-supported students that participated in this grant worked with public school teams in 10 different school districts - some rural and some suburban. The focus of ATTOT student work was to increase the capacity of local schools to support and serve students with disabilities who are users or potential users of assistive technology. Assistive technology includes both low and high tech devices or adaptations that promote full participation of students with disabilities in educational environments and activities. The assistive technology-related services that were provided were primarily collaborative and consultative - focusing on members of the education team who, in turn, support their own students. Over the past 4 years, the ATTOT students have spent an excess of 2500 hours providing assistive technology training and services in public schools or related community settings.

3. A total of 388 school team members have received consultative or collaborative services directly from the ATTOT students in the past academic year alone. 154 public school students with disabilities in 40 schools have been impacted as a result of this collaborative effort. The ATTOT project has far exceeded initial projections of project impact on public schools and children with disabilities.

4. ATTOT students have completed five research theses entitled:

- "Interrater Reliability of the Technology Team Assessment Process" - this was published in the American Journal of Occupational Therapy, (1997, April), 51(4), 297 - 301.
- "Middle School Team Dynamics related to Assistive Technology"
- "From the Outside to the Inside and Back Again: The Impact of Transition on One Group's Experience"
- "Students who Use Assistive Technology and Their Families: A Preliminary Study"
- "Augmentative and Alternative Communication Training at Technology Camp: A Case Study"

Thesis projects that are in process include:

- "Evaluation of a Peer Coaching Model of Staff Development related to Assistive Technology"
- "Attitudes and Skills related to Assistive Technology in Rural Public Schools"

- "The Role of Assistive Technology in Promoting Learning Opportunities in an Inclusive Classroom"
- "Factors Contributing to the Success of College Students with Learning Disabilities"
- "Development of Computer Items on a Standardized Test of Motor and Process Skills for Children"

5. Approximately half of the participating ATTOT students had previously worked in public school systems or have experience with school-age children. All expressed a strong interest in school-based practice with five having a strong interest in rural settings.

6. Workshops targeting educational personnel and families were regularly conducted by ATTOT students. Topics varied and were chosen based on participant needs. Examples of workshop topics included: low tech options for the classroom, KE:NX applications, Intellikeys applications, ergonomic considerations, and switch-making.

7. ATTOT students participated, on a regular basis, in small group seminar activities focusing on specific assistive technology applications or school system context issues. Seminar topics were determined based on student needs and stated preferences.

Goal 3: Establish an on-going curricular emphasis in assistive technology in the undergraduate and graduate occupational therapy education program at Colorado State University.

Goal 3 Activities, Accomplishments, and Outcomes

1. Assistive technology content was permanently infused into three courses within the Occupational Therapy Department curriculum. Two of these courses emphasize experiential lab components which allow students to work directly with an array of adaptive computer hardware and software. The content for each course was taught by ATTOT students and staff. There is currently discussion among faculty about the feasibility of an assistive technology seminar to be offered to students who would like more in-depth instruction in this area.

2. A total of 360 professional OT students (90 students/yr. x 4 years) and 300 pre-OT students received in-class instruction regarding assistive technology. In addition, 4 students were involved in service learning, 2 on level one field work, 5 interns, and 4 student hourly workers received assistive technology content.

3. Occupational therapy faculty were well informed about the ongoing ATTOT project and the services being provided to local schools. General faculty involvement in ATTOT has been primarily through their service on ATTOT

student research committees. In addition, departmental faculty and staff members have participated in open houses where assistive technology was demonstrated.

4. In order to address the Occupational Therapy Department's need for fieldwork sites for undergraduate and graduate students, the ATTOT project staff have taken responsibility for teaching and mentoring OT students during short 40 hour fieldwork experiences in the area of assistive technology. ATTOT staff also established rotating 3 month internship opportunities for the Department's seniors or finishing graduate students. These 40 hour and 3 month opportunities are expected to continue beyond the grant period.

Goal 4: Administer project activities, disseminate project findings, and evaluate project effectiveness.

Goal 4 Activities, Accomplishments, and Outcomes

1. Project progress was reviewed via staff meetings, ATTOT student meetings, exit interviews of students as they left the grant project, electronic mail correspondence between current and past project participants, and numerous informal methods.

2. The project budget was continuously reviewed by the project director and staff along with Departmental administrative staff.

3. Formative and summative evaluation activities were conducted by external evaluators using interview and survey methods for data collection. Results indicated that the project has met and exceeded the original project goals with only minor modifications to project activities and focus. The modifications to the project included: changing the mix of professional and post-professional students, adding advanced internships for practicing therapists, adding an interdisciplinary component in year 4, and focusing the last year upon building on-going partnerships between CSU and the public schools.

4. Informal feedback from the public school teams who received training and support from ATTOT staff and students has been overwhelmingly positive.

III. SUPPLEMENTAL INFORMATION AND PROJECT EVALUATION FINDINGS

As part of the ATTOT grant project, the external evaluators interviewed six of the current grant-supported graduate students and surveyed the undergraduate classes of occupational therapy students who had participated in courses with infused assistive technology. Faculty members, the project director

and the primary ATTOT coordinator were also interviewed. What follows is a summary of the findings.

The graduate students responded very positively about their experiences on the ATTOT project. One participant reported that the training was an enormous asset to her education and allowed her to expound on what was being taught in her other occupational therapy classes. Another student described the project as "problem solving with a purpose," emphasizing the hands-on, experiential aspects of ATTOT. Each student mentioned that the applied learning inherent within the project made it both meaningful and beneficial to them.

Becoming familiar with all of the computer systems and adaptive software that was available presented the most significant challenge to the graduate students. Each student needed a familiarity and comfort level with the equipment before they could effectively provide services to the local school teams. Another challenge was the need to be self-directed and self-motivated. One student noted the that balancing her work on the grant with her thesis research and other schoolwork was difficult.

When asked about the extent to which they had learned about assistive technology for school-aged children, the students each felt confident about the knowledge that they had gained. Many discussed a change in their approach in providing technology related services -- from device oriented to more functional applications ("Instead of being technology focused [my approach] is more task focused;" "I have learned to question the why and how technology fits into the picture;" "Focus on activity: technology is a tool not a goal"). A greater awareness of the option available to children with disabilities was also mentioned. Two students recognized that the software and other equipment that they worked with on the grant may soon be outdated, but their experience gave them the confidence and knowledge base to use any assistive technology ("If it's not something that I am familiar with right now, I know I can sit down and look at it and know where to go").

The students felt that the services that they provided were very well received by the school system. Overall, the students found the school team members receptive to suggestions and willing to try them. The school team members seemed to value the expertise of the students. Two students mentioned the change in the emphasis of the ATTOT services from more direct service in their initial year on the grant to a consultative focus in the final year ("Sometimes it was hard to know if providing someone with information and letting them decide what to do, or what not to do with it, was enough").

All of the grant supported students valued their experience on the ATTOT project. One student felt that the mentoring from other staff members was invaluable while another stated: "I could not imagine the last two years [of the OT program] without the opportunity to do the things that I have done as part of the project." The benefits of the project extended beyond the grant participants

to the school personnel and, most importantly, to the students with disabilities who were being given greater opportunities to learn and interact.

Each grant supported student expressed a desire to practice in the public schools or related settings. For the students who already had a professional degree, this meant returning to their previous school district employers. Others will eventually be seeking a first-time position in a school system. The students felt that the experience that they gained on the ATTOT project has made them more marketable and knowledgeable therapists.

Finally, the students commented upon the excellent, innovative supervision that they received as ATTOT staff members. They noted the working environment that inspired them to excel and think creatively. One student commented: "this has been a once in a lifetime experience -- just having the TIME to explore and learn. What a luxury!"

The undergraduate students were asked to complete a short survey regarding the assistive technology content in their occupational therapy classes. Three classes received information about assistive technology and its applications. Two of the classes received experiential learning opportunities using case studies and hands-on experience with specific assistive technology devices and systems. The majority of the students felt that they now had a basic knowledge of assistive technology and the benefits it may offer to people with disabilities. Almost all of the students reported an interest in gaining more information and experience in the area of assistive technology. In addition, the undergraduate students wanted more assistive technology related information infused into their curriculum. The assistive technology content that is currently infused into the curriculum will continue beyond the grant period.

The faculty infused assistive technology information into three occupational therapy classes. The instructors gained additional assistive technology information through open houses, faculty meetings, oral presentations, and informal communications. The faculty reported that the ATTOT project has been an asset to the OT program. The creation of a seminar or elective course focused entirely upon assistive technology issues has been suggested.

The project director asserted that the most beneficial aspect of the project was the opportunity for the graduate students to work in the field. This gave the students a chance to implement assistive technology in real life situations while honing their consultative skills. The project also opened doors for both education and research while building the reputation of the Assistive Technology Resource Center.

Effectively infusing assistive technology into public schools for students with disabilities. She commented that system-level constraints limit the schools' ability to provide quality assistive technology services in a timely manner. While interest in assistive technology has increased and schools are concerned about

compliance with assistive technology legislation, change for the system as a whole is a difficult and long-range endeavor. A four year grant can start the process, but there is more work to be done.

Another challenge is finding a way to effectively infuse assistive technology content into the occupational therapy curriculum at CSU. She commented that "there are so many things that need to be taught that it is hard to find room for anything new." The faculty will need to periodically evaluate the curriculum and possibly eliminate or change some content if new material is to be added. Additionally, faculty members tend to focus upon their respective areas of expertise. Therefore, she believes that assistive technology is addressed primarily by those instructors who have an interest in it.

In closing, the project director was sad that ATTOT is ending. "It has been a fantastic learning opportunity for me and we have prepared some wonderful people who will do very good work as OT's. I think school-aged children and the larger education systems we have worked with have seen some real benefits and are now more invested in assistive technology for students who need it."

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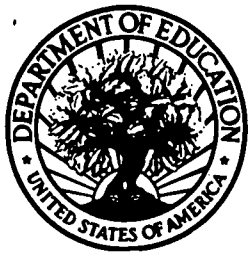

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