The National Assistive Technology Research Institute’s “Top Ten” List of Findings

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Los Angeles, CA
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NATRI

Introduction

- Overview of the National Assistive Technology Research Institute
- Research Areas
- Research Methodologies
- Top Ten List of Findings
Introduction

What is NATRI?

National Assistive Technology Research Institute
NATRI

Background

- Funded by the U.S. Department of Education, Office of Special Education Programs
- Cooperative agreement
- Funded October 1, 2000
- 4 year project-extended for 18 months
- $2.8 million award
Project Goals

- To examine factors related to the planning, development, implementation, and evaluation of AT services in schools

- To disseminate the findings of the research in ways that will assist school personnel to develop or improve AT policies and practices for students with disabilities
7 Research Areas

1. Status of AT use in schools and the role it provides in education
2. Policies & procedures in the development and delivery of AT services
3. AT decision-making by IEP teams
4. Integration of AT use in learning environments (facilitate instruction, access to curriculum)
5. Effects of AT use on academic, social, functional performance of students
6. Training and technical support needed by persons implementing AT
7. Extent to which IHEs are developing AT knowledge and skills
NATRI

Research Methodologies

- AT policy analysis (50 states)
  - Telephone interview
  - Content analysis
- Online document review (10 target states)
- Status of AT use online survey (700 entries)
  - Student demographic information
State Case Studies
State Case Studies

Participants

States:
CA, FL, KY, OR, TX, VA, WI, KS, MA, MT

Districts:
Multiple educational units in each state (43)
Online administrator surveys
  - State level (1)
  - District level (7)

Data Collector Demographic Information (219)

Teacher Demographic Information (264)
Research Methodologies

- **On-site Data Collection**
  - Train team of local AT data collectors (219)
  - Select target students using AT (322)
  - Conduct classroom observations (305)
  - Attend IEP meetings (274)
  - Audio taped interviews
    - Teachers (260)
    - Families (268)
    - Students (145)
NATRI Findings

Top 10 List
10 Policy and Procedure

True or False

AT policies, guidelines, and technical assistance documents are circulated in the majority of states in the nation.
NATRI Findings

10 Policy and Procedure

True

AT policies, guidelines, and technical assistance documents are circulated in the majority of states in the nation.
Policy and Procedure

Documents Circulated

- 92% of states have circulated AT policies, guidelines, or technical assistance manuals
- Teachers have little or no knowledge of state AT policies and guidelines
- 90% of states have documentation on considering AT in IEP meeting
- However when teachers were asked about district or state documents specific to writing AT into the IEP...
Policy and Procedure
Teacher Responses

Percentage of Teachers with AT-Specific IEP Guidelines

N = 81

- No: 54
- Yes: 34
- Not Sure: 12

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Policy and Procedure

Documents Circulated

- No - Have IEP information, but not AT specific
- No - Teachers rely on AT experts
- Yes - Teachers report receiving training on AT-specific IEP information
- Yes - Some districts have AT-specific software
- Yes - AT-specific information is included within a larger IEP document
- Yes - AT-specific information is included in a stand alone document
NATRI Findings

9 Status of AT Use in Schools

Multiple choice

AT use in schools was reported most often for:

(a) K-2nd grades
(b) 3rd-6th grades
(c) 9-12th grades
NATRI Findings

Status of AT Use in Schools

Multiple choice

AT use in schools was reported most often for:

(a) K-2nd grades
(b) 3rd-6th grades
(c) 9-12th grades
Status of AT Use

What groups of children are using AT (e.g., by grade level)?

N = 675

Percent

Grade

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Status of AT Use

What groups of children are using AT (e.g., by disability)?

Disabilities Reported = 1258

Autism
Deaf-blind
Deafness
Emotional
Hearing
MR
Multiple
Orthopedic
OHI
LD
Speech/lang
TBI
Vision
Other

N = 700

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Status of AT Use

What human functions are aided by AT?

- Existence
- Communication
- Positioning
- Mobility
- Education
- Environ. Interact.
- Sports Leis Rec

Functions Aided by AT
Status of AT Use

Where are students using their AT?

N = 243
Locations = 1378

- Regular ed
- Special ed
- Community
- Home
- Other

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NATRI Findings

8 Service Delivery Models

True or False

Formal assistive technology teams are the most predominantly used and effective AT service delivery model.
NATRI Findings

Service Delivery Models

8

False

Formal assistive technology teams are the most predominantly used and effective AT service delivery model.
Service Delivery Models

- Formal assistive technology team
- District AT specialist with building representatives for AT
- Collaborative/cooperative agencies serving multiple districts
- Regional AT centers serving multiple districts
- AT team in which members are responsible for serving students specific AT needs (e.g., written expression) district-wide
- School district personnel serve dual roles (e.g., SLP and AT expert)
- No formal model used
NATRI Findings

Skills Needed to Plan & Implement AT

Multiple choice

When professionals providing AT services were asked what responsibilities they perform, the most frequently stated response was:

(a) Purchase/Acquire AT equipment for students
(b) Consult with other professionals on AT
(c) Assess/evaluate students on AT
NATRI Findings

Skills Needed to Plan & Implement AT

Multiple choice

When professionals providing AT services were asked what responsibilities they perform, the most frequently stated response was:

(a) Purchase/Acquire AT equipment for students
(b) Consult with other professionals on AT
(c) Assess/evaluate students on AT
Skills Needed

Job Responsibilities Most Often Reported

- 36% Assess/evaluate students on AT
- 27% Train students, teachers, families
- 21% Consult/support professionals
- 18% Provide PD trainings
- 15% Implement AT
- 10% Collaborate with IEP team
- 10% Purchase/order/issue AT equipment
Skills Needed

Least Often Reported

- 6% Coordinate AT programs/schools
- 5% Match AT to students/recommend
- 4% Evaluate implementation
- 3% Facilitate access to curriculum
- 3% Maintain AT database
- 3% Maintain AT equipment
- 2% Maintain lending library
- 2% Adapt curriculum
- 1% Set up AT
- .5% Plan for inclusion
Skills Needed

Percent of AT Service Providers by Title

N = 216

AT/AAC: 40
Teacher: 15
SLP: 14
OT: 6
Tech: 5.5
Skills Needed

Percent of Types of AT Positions

N = 87

- **AT alone**: 64
- **With SLP**: 18
- **With OT**: 8
- **With Another Discipline**: 5
- **With PT**: 2
- **With Teacher**: 2

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True or False

In IEP meetings, occupational therapists are rated as having the highest level of AT expertise, second only to AT specialists.
True

In IEP meetings, occupational therapists are rated as having the highest level of AT expertise, second only to AT specialists.
AT in the IEP

AT Expertise Ratings in IEP Meetings

Low

1

2

General Educator

Administrator

3

4

Special Educator

PT

SLP

OT

5

High

AT Specialist
AT in the IEP

Teacher Interview

- How and where in the IEP do you document AT and AT consideration?
  - Documentation of AT in the IEP
  - Documentation of the consideration of AT in the IEP
AT in the IEP

Percentage of Areas Where AT is Documented

N=126

- Accommodations & Modifications: 34
- Related Services: 29
- Special Factors: 21
- Specially Designed Instruction: 10
- Goals & Objectives: 10
- Supplementary Aides & Services: 9
- Present Level of Performance: 6
AT in the IEP

Documentation Of Consideration Of AT

N=81

- Narrative
- Checkbox Only
- Not Sure
- None

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## AT in the IEP

### AT Recommendations in IEP Meetings

<table>
<thead>
<tr>
<th>AT Recommendations Made in IEP Meetings</th>
<th>% of Meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition of AT assigned</td>
<td>79%</td>
</tr>
<tr>
<td>Student training recommended/scheduled</td>
<td>71%</td>
</tr>
<tr>
<td>Trial periods before purchase recommended</td>
<td>66%</td>
</tr>
<tr>
<td>Teacher training recommended/scheduled</td>
<td>62%</td>
</tr>
<tr>
<td>Follow-up evaluation scheduled</td>
<td>43%</td>
</tr>
<tr>
<td>Family training recommended/scheduled</td>
<td>42%</td>
</tr>
<tr>
<td>Funding sources discussed</td>
<td>38%</td>
</tr>
</tbody>
</table>
NATRI Findings

5 Access to Technology

True or False

Teachers and parents express satisfaction in being able to acquire the assistive technology they need for their students.
True

Teachers and parents express satisfaction in being able to acquire the assistive technology they need for their students.
Access to Technology

Teacher Interview Data

- What does your district or school do well in terms of getting AT devices and services for your students?
  - 211 teacher interviews
  - 47% of the teachers
  - Second most frequently stated response
  - Teachers have access to the technology they need
Access to Technology

Funds/AT Are Available

- “Anything that I have asked for they have purchased it for me. They are supportive financially.” Montana teacher

- “Our head of special education does everything she can to get us monies for whatever we need.” Florida teacher

- “I have never asked for any AT device that I have been turned down for. They never even hesitated and I have asked for some really high tech equipment before.” Kentucky teacher
Access to Technology

Funds/AT Are Available

- “They do well in the fact that they usually get whatever the specialist, staff, and I request…They have done well with setting up lots of resources both personal and material wise.” *California teacher*

- “I think [the district] has done a great job because there are a lot of devices that they have available or programs that are available to use.” *Virginia teacher*
Access to Technology

Parent Interview Data

- What does the school or district do well in terms of delivering AT services to your child?
  - 17% of the parents
  - Most frequently stated response
  - Parent indicate the school has provided the technology their child needs
Access to Technology

**Technology Is Provided**

- “They got the equipment for me and they let me know what was available for him.” *Florida parent*

- “Making it available with funds to get what she needs.” *Kentucky parent*

- “Basically they gave her the right equipment and they gave her a chance.” *California parent*

- “They have made it available. I have not had to ask for it. It has just been done for me.” *Virginia parent*
NATRI Findings

True or False

Having access to AT expertise in the district or school is highly valued by both parents and teachers.
NATRI Findings

4 AT Expertise

True

Having access to AT expertise in the district or school is highly valued by both parents and teachers.
**AT Expertise**

**Teacher Interview Data**

- What does your district or school do well in terms of getting AT devices and services for your students?
  - 211 teacher interviews
  - 48% of the teachers
  - Most frequently stated response
  - Teachers value access to AT expertise
    - Knowledgeable/answer questions
    - Training
    - Implementation support
    - Acquire devices
    - Observe/Be present in the classrooms
AT Expertise

AT Expertise is Valued By Teachers

- “I’m very glad that we have assistive technology personnel to come out and help us with the assessment and maybe just to determine what types of devices based on your expertise and your knowledge of what’s out there, to assist them in the learning process. That’s really helpful to a classroom teacher.” California teacher
Help With Implementation

“Gosh, I think just having my own OT that knows all this stuff it helps a lot to be able to give her and my speech therapist ideas on what I’d like to do and then them helping me figure out how to get my students there. I’d probably be at a big loss if I didn’t have them to do that for me because I wouldn’t know what I am looking for at this point and they do.”

Kentucky teacher
AT Expertise

Individualized Assistance

- “They certainly spend a lot of time with us, explaining how the devices work - especially the AT assistant - and we call on her a lot when we are stuck.”  
  *Oregon teacher*

Providing Information

- “Our district technology person is involved and has come around and given one-on-one instructions, new updates.”  
  *Kentucky teacher*
AT Expertise

Monitoring Implementation

• “They don’t put things in place and then just let you do it. They definitely make sure they follow up and just the openness of being able to get the additional services for your students.” Wisconsin teacher

• “If students need schedules or updates, they get them in a timely manner. And devices, switches, people coming out, bring stuff to try, and coming back monitoring if that’s working, and the whole department seems to work quite well getting what’s needed.” Oregon teacher
AT Expertise

Parent Interview Data

- What does the school or district do well in terms of delivering AT services to your child?
  - Second most frequently stated response
  - Parent indicate they value access to personnel with AT expertise
AT Expertise

Source of Information

• “There is a high level of knowledge ability about what is out there. I think you have a very strong base of knowledge, and a great willingness to use whatever [my child] needs.”
  Massachusetts parent

• “They keep themselves very well informed.”
  California parent
AT Expertise

Provide Training

• “I think the rapport I have with my assistive technology personnel is excellent. She’s informative. She comes if I need her. She’s there to teach. I couldn’t ask for a better person.” *California parent*
True or False

Teachers, parents and students all report positive effects of AT use.
NATRI Findings

Effects of AT Use

True

Teachers, parents and students all report positive effects of AT use.
Effects of AT Use

Teacher Interview Data

- What effect does the use of AT have on the academic, social, and functional performance of the students who use them?
Effects of AT Use

Teachers Report Positive Effects

- “Individuals that cannot read fluently will use the Read Write Gold device and they are able to grasp and comprehend the passages and the textbooks in a way that in the past, intervention has not been able to meet.”
  Kentucky teacher

- “AT makes it possible for my students to participate in the general ed curriculum. Whether it’s a Brailler, a Braille n’ Speak so that they can hear or create Braille, whether it’s a switch so that they can talk and communicate, or an FM system so they can hear the teacher. Really, low-tech and high-tech are the only reason why my kids can be in the mainstream”
  Virginia teacher
Effects of AT Use

Teachers Report Positive Effects

- “Academically it helps them out tremendously because he is able to produce more work in less time and he is faster at it than writing it out and I guess less painful also for him because he struggles with handwriting.” Texas teacher

- “Richard can keep up with notes, he can print out tests, and his answers for a test. His time frame is a lot faster and I can read and understand what he is trying to say a lot easier. At first socially, the other students didn’t understand it, but they know that it is just his means of doing something. It’s making him accepted just as a normal student” Florida teacher
Effects of AT Use

Parent Interview Data

- How helpful has AT been for your child?
Effects of AT Use

Parents Report Positive Effects

- “The self-esteem that he can control his environment a little bit more. It’s just priceless. You can’t really measure that. To have a child that has the brain power to know and understand everything, but the signals are being scrambled and he has a difficult time controlling his environment. Now suddenly he can control it.” California parent

- “It is very important. The most important thing at some point. It actually bridges the gap between what she can do and what other typically developing children can do.” Kansas parent
Effects of AT Use

Parents Report Positive Effects

- “[My child] is communicating. I mean that [my child] is autistic and he wasn’t communicating previously and my son can tell me if he doesn’t feel so good…that should sum it up right there.”  
  *Virginia parent*

- “She would be lost in her own world if she did not have these devices to help her to communication to her peers. It gives her power and self-esteem and some control over her environment and that has really helped her with her communication skills.”  
  *Kentucky parent*
Effects of AT Use

Student Interview Data

- What are some of the things that you can do now that you couldn’t do before you had your AT?
Effects of AT Use

**Students Report Positive Effects**

- “Well one of the things is that I can write better and I know how to print stuff out of it. But with the regular paper, I have to write it on hand. I wasn’t very good on the hand. I was slow.”  *Texas student*

- “I don’t need anyone to read to me. My mom doesn’t need to read my homework. I can read on the Kurzweil now.”  *Massachusetts student*
NATRI Findings

Teachers Want More Training

Multiple choice

Teachers most often request training on:
(a) General AT awareness
(b) Specific AT devices
(c) Policy & procedure
NATRI Findings

2 Teachers Want More Training

Multiple choice

Teachers most often request training on:
(a) General AT awareness
(b) Specific AT devices
(c) Policy & procedure
Teacher Training

Teacher Interview Data

- What could your district do better in terms of getting AT devices and services to students who need them?
  - 214 teacher interviews
  - 79% of the teachers
  - Most frequently stated response
  - Teachers indicate they need more AT training
    - Awareness
    - All team members trained in AT
Teacher Training

More Training Is Needed

- “I think probably we as teachers need some PD on an orientation level, just to know what’s out there, what’s out there for certain kinds of kids.” Kentucky teacher

- “I don’t feel like I have enough knowledge, background, and training on AT. Taking college classes is one thing but having real hands-on in the classroom and knowing what’s reasonable, feasible, what’s likely going to be available for a student.” California teacher
Teacher Training

More Training Is Needed

- “I think having more training on what is available would be helpful to special education staff or even general ed staff, because sometimes we just don’t know what we could be doing with AT.” Kentucky teacher

- “I do know that there is a lot more technology available and I’m just not aware of what it is or how I can use it for my students. I believe the general education teachers need to be more aware of what is out there for students who are mainstreamed.” Kentucky teacher
NATRI Findings

AT Implementation

True or False

Professionals providing AT services are showing a trend toward consistent, planned implementation of AT with their students.
False

Professionals providing AT services are showing a trend toward consistent, planned implementation of AT with their students.
Some schools develop written plans to guide how the AT will be implemented following the IEP meeting for individual students. Does your school do anything similar to this and what is included?

- Who is responsible for implementing the AT plan?
- Is there a required or recommended form used by your state for a written AT plan?
- What is included in the plan?
AT Implementation

Percent Of Teachers Using Implementation Plans

N=116

- 52 No AT Plan
- 27 Use IEP
- 10 Not Sure
- 8 Yes
- 3 Sometimes
AT Implementation

School Has Enough Forms

- “No, we have enough forms already, so we don’t need another one.” Montana teacher

People Would Not Use It

- “If there is, I don’t think people would adhere to it. I have never heard of one” California teacher
AT Implementation

**Depend On AT Program**

- “[The AT team] is very good about following through. I just take care of the class, thank [goodness!]” *California teacher*

**IEP is Sufficient**

- “Pretty much what we do with assistive tech is written into the IEP and that’s what we follow. If we felt the need to develop something more elaborate then we could do that, but usually it’s pretty specific in the IEP.” *Wisconsin teacher*
AT Implementation

More Informal

- “I don’t know of a specific plan that we have or it seems like it’s way more informal than that.” California teacher

- “Usually at the IEP meeting, we just talk about how we’re going to use it and then as soon as the IEP meeting is over, that’s when we start using it however we said we would.” California teacher

- I: “It’s pretty loose here and everyone just kind of does what is needed.”

  R: “Yeah and if somebody is not there then everybody is calling that person to see what’s going on.” California teacher
AT Implementation

Individualize Use Of Plan

- “I don’t think it’s unrealistic to think that someone who is using something like a DynaVox that’s going to require training by staff, training by parents, expenses- for that staff to have a plan. As far as my students are concerned, I have not needed to develop one.” Virginia teacher

- “In some specific cases we have written into the IEP some specific implementation as far as some training or making sure that things are specifically in the modifications or in the objectives so that somebody is held accountable to that.” Kentucky teacher
AT Implementation

Plan Is Beneficial

- “No [we don’t] have a specific form, although that would be a good idea. Without a specific form to define all those questions, it’s nebulous.” Massachusetts teacher

- “Most definitely [need a plan], because our AT specialist can only be available just a few hours each month at my school.” Kentucky teacher
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AT Implementation

Plan Is Beneficial

- I: “I think it needs to be in the implementation plan even as specific as who is going to buy it. Once you have all that stuff in writing it will be easier to manage services, manage how much it is being used, and just makes people more responsible for what their role is in the implementation. Kentucky teacher

- “Probably would be a good idea. Somebody would probably kill me for saying that (laugh). [They will say] then you write it!” Kentucky teacher
# AT Implementation

## Sample Implementation Plan

**ASSISTIVE TECHNOLOGY IMPLEMENTATION PLAN**

National Assistive Technology Research Institute

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Grade</th>
<th>DOB</th>
<th>School</th>
<th>Date</th>
</tr>
</thead>
</table>

**Implementation Team** (Teacher, family, Service Providers):

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
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<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
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<tbody>
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</table>

**Equipment**

<table>
<thead>
<tr>
<th>List Equipment and Software to be used</th>
<th>Status*</th>
<th>Task</th>
<th>Persons Responsible</th>
<th>Date Due</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>Order/procure equipment</td>
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<td></td>
<td>Load Software</td>
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<td></td>
<td>Adapt &amp; customize devices/software</td>
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<tr>
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<td>Set up at school</td>
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<td>Set up at home</td>
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<td></td>
<td>Maintain/Repair/Update</td>
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<tr>
<td></td>
<td></td>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Status = Currently Own, Will Purchase, Will Borrow, Will Obtain from District Library, Etc.
Websites

http://natri.uky.edu

e-mail

natri@coe.uky.edu