Teacher Competencies with Assistive Technology

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Introductions

- Who are we?
- Who are you?
- Companion website & materials:
  - www.tinyurl.com/taer17

Literature Review

- **Abstract:** Using the expert opinion of more than 30 professionals, this Delphi study set out to develop a set of assistive technology competencies for teachers of students with visual impairments. The result of the study was the development of a highly reliable and valid set of 111 assistive technology competencies
- **111 Competencies**

Smith, D., Kelley, P., Maushak, N., Griffin-Shirley, N., & Lan, W. (2009). Assistive technology competencies for teachers of students with visual impairments. *Journal Of Visual Impairment & Blindness, 103*(8), 457-469.

Literature Review

- **Abstract:** This article reports on a survey of 165 teachers of students with visual impairments in Texas to examine their perceptions of their knowledge of assistive technology. The results showed that they had significant deficits in knowledge in 55 (74.32%) of the 74 assistive technology competencies that were examined and that 57.5% of them lacked adequate confidence about teaching assistive technology to students.

Li, Z., Parker, A. T., Smith, D. W., & Griffin-Shirley, N. (2011). Assistive Technology for Students with Visual Impairments: Challenges and Needs in Teachers' Preparation Programs and Practice. *Journal Of Visual Impairment & Blindness*, *105*(4), 197-210.

Literature Review

- **Abstract** (abbreviated): 840 TVIs completed an online survey to identify their perceived level of mastery of assistive technology competencies. Implications for practitioners: Given the findings of the study, it is recommended that all university programs develop a course on assistive technology, as well as embed assistive technology competencies in their training curricula. Research is needed to explore further what universities are currently doing to address assistive technology in their curricula. Finally, professional organizations should provide ongoing in-service training in assistive technology for practicing teachers of students with visual impairments.

Zhou, Li, Ajuwon, Paul M., Smith, Derrick W., Griffin-Shirley, Nora, Parker, Amy T., & Okungu, Phoebe. (2012). Assistive Technology Competencies for Teachers of Students with Visual Impairments: A National Study. *Journal of Visual Impairment & Blindness, 106*(10), 656-665

Purpose of Study

- Researchers have determined that teachers are not prepared to use AT, much less to teach students to use it (Abner & Lahm, 2002; Cadela, 2003; Edwards & Lewis, 1998; Kapperman, Sticken, & Heinze, 2002).

- Lack of preservice training in AT has been cited as a primary obstacle to meaningful integration of students with disabilities (Judge & Simms, 2009; Michaels & McDermott, 2003).

- "The success and use of AT by students with disabilities is directly related to the AT knowledge and skills of their teachers" (Judge & Simms, 2009), and "teacher preparedness is the primary significant predictor of student AT use" (Connor, Snell, Gansneder, & Dexter, 2010).

- This study sought to train preservice and inservice general education teachers regarding AT competencies identified by the researchers from a larger, established list (Smith et al., 2009), as applicable in the general education setting and to general educators.

Research Questions

1. What are preservice and in service teacher self-reported competencies with AT (pre-survey)?
2. Does preservice and in service teacher preparation in AT improve as a result of training in AT, as measured by their self-reported competence with established AT competencies (post-survey)?
3. Do participant responses to the open-ended questions support their self-reported levels of competence with AT (pre and post survey)?

Intervention

- **35 pre-service teachers at Texas A&M University at Commerce completed a [Scavenger Hunt](#) in [TAMU-C AT Lab](#)**

Measure

- [20 Competencies](#) selected from original 111 competencies in Smith et al.'s (2009) study
- Same 4-point Likert scale (1 = novice, 2 =basic, 3 = proficient, or 4 = advanced)
- Pre and Post Ratings of Competency Level
- Open-Ended Questions for qualitative data
  - Who might benefit from AT?
  - What is an AT device? Name as many as you can.
  - Name some resources for information on AT
  - In your own words, state what you have learned…

Smith, D., Kelley, P., Maushak, N., Griffin-Shirley, N., & Lan, W. (2009). Assistive technology competencies for teachers of students with visual impairments. *Journal Of Visual Impairment & Blindness, 103*(8), 457-469.

Demographic Data

Mean Age: 26 years

Gender:

Answer	Response	%
Male	5	14.29
Female	30	85.71
Total	**35**	**100**

Ethnicity:

Answer	Response	%
Hispanic	9	25.71
African American	5	14.29
Asian/Asian American	0	0
Native American	0	0
Caucasian	17	48.57
Other (please type in answer)	4	11,43
Total	**35**	**100%**

Choose the option that best describes your situation.

Answer	Response	%
No teaching experience	29	82.86
Teaching currently	0	0
Teaching experience	6	17.14
Total		**100%**

Mean Years Experience = .4 overall; 2.33 for those with experience

Results

- Competency Means Pre/Post, N=35
  - Training appeared to have the least effect on Competency 18 (Resources).

Change in Competency Means Pre/Post
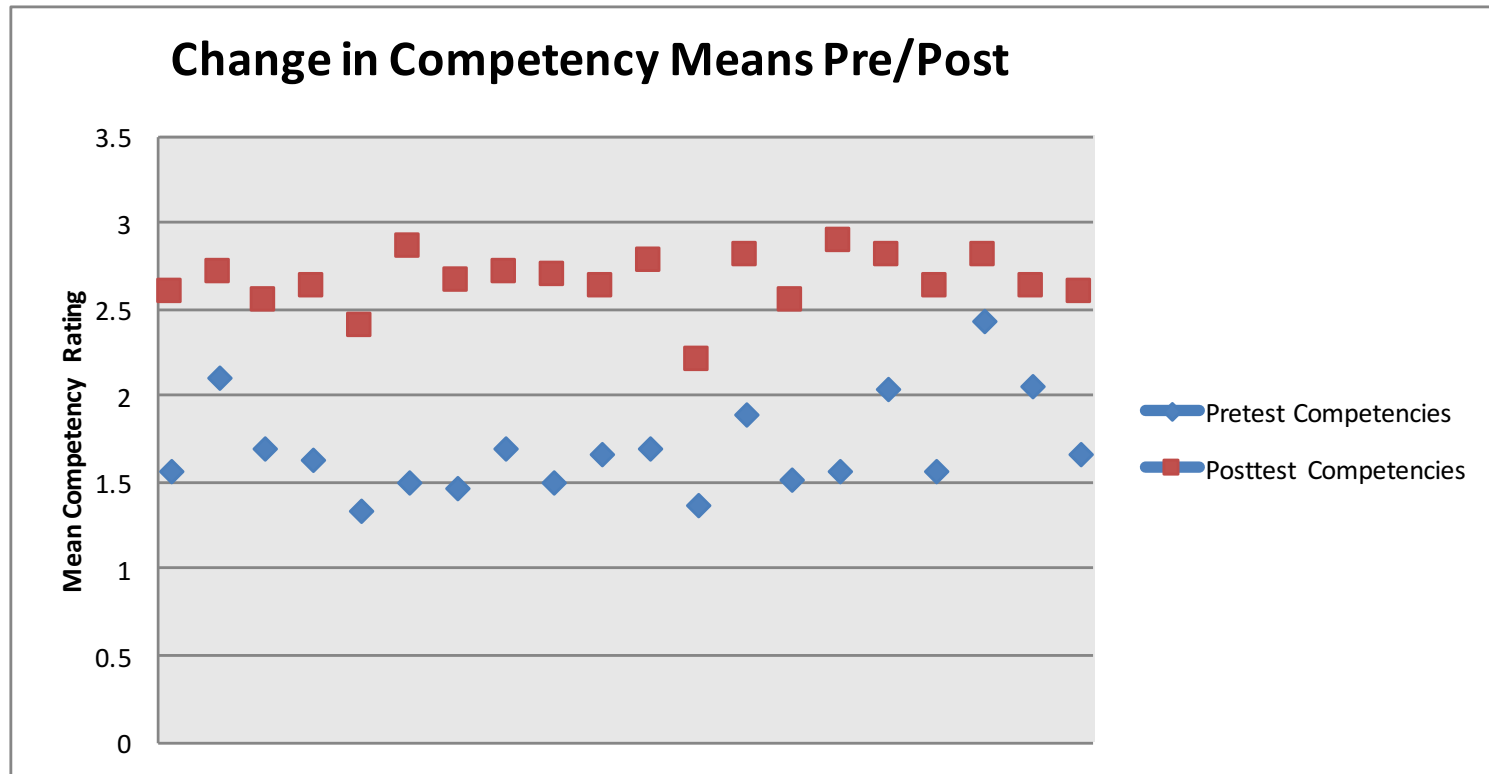
Results

- **There were significant effects of the scavenger hunt training**; participants differed on the pre/post tests

  $F(1,33) = 83.58$, $p < .00001$, $\eta^2 = .72$

- **There were no significant effects of previous teaching experience**

  $F(1,33) = .21$, $P = .65$

- **The increase of number of devices and software named pre and post was significantly greater than chance**

  $t(34) = 8.38$, $p < .0001$

- **The increase of number of resources named pre and post was not significantly greater than chance**

  $t(34) = 81.65$, $p = .11$

In your own words…

- "Before I came here, I did not know much on assistive technology but this gave gave me a lot of input and some examples of different devices and software to use in the classroom.

- "I have learned that there are many many different ways to assist with and without technology. Simple things make a big difference. Using appropriate color contrast is an easy example of a thing everyone should begin incorporating into the way they create documents."

- "One of the coolest labs on campus. Allows us to see what devices and software that we can recommend for use in our classrooms or introduce to districts. Gives us a hands on understanding to give students and parents an idea of what best will help their child."

- I learnt that there are many ways and technologies to assist and help students with disabilities be successful in the classroom. It gives them the opportunity to feel included and feel like they have the ability to be just as successful as a student without a disability.

In your own words…

- "I have found that there are many different systems to help facilitate persons with disabilities to make life easier for them. I know of a great place and resources if I have any questions or need assistance."

- "I have learned that there are so many ways to help children with disabilities , I am excited about the plethora of knowledge in this lab. I learned what the Ruby and Onyx were and that if I need to, I have many resources to help my students succeed.

- I learned that there's way more out there available for use for anyone who may have a disability that prevents them from seeing well or comprehending. If there's a need for it, it's probably out there for someone to use. Despite all of my years in education, there are still so many things I can learn to use to benefit my students.

- *"I've learned that disabled students struggle on a daily basis and to not take for granted what I was blessed with."*

Questions?

"For people without disabilities, technology makes things easier. For people with disabilities, technology makes things *possible*."

~Mary Pat Radabaugh, IBM