Evaluating the Importance of Integrated Technology for Teaching and Learning Among Preservice Teachers

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Abstract
A valid and reliable instrument that measures the growing motivation to use integrated technology applications among preservice teachers was developed. Expectancy value theory provided the framework, for understanding the level of technology skill self-efficacy and value beliefs among preservice teachers.

Introduction
One major problem teacher educators face in an attempt to address the technology integration capability of preservice teachers, is measuring the level of motivation future teachers have to integrate technology in their future classrooms. Teacher educators want to know if the training and experiences they provide preservice teachers are ample enough to develop needed skills and a desire to use integrated technology as full-fledged teachers.

Preservice teachers experience a variety of opportunities to practice technology integrative activities in varying amounts. Given all the variables that occur in educating and training pre-service teachers, no two preservice teachers experience the same examples and practice associated with technology integration. By what method should preservice teachers be evaluated to give ample feedback to teacher educators, indicating success in the level of preparation to integrate technology given all the variation? Are preservice teachers motivated to use technology as teachers when they in fact graduate?

Instrument
The Technology Self-Assessment (Lynch, 2001) was developed to assist teacher development programs attempting to meet ISTE NETS standards to develop technology-using teachers. This valid and reliable instrument employs two meaningful constructs to demonstrate that preservice teachers are developing the motivation to use technology for learning and future teaching: technology skill self-efficacy and technology value beliefs. According to the expectancy value theory, motivation to take action is a result of the combination of skill self-efficacy and value-beliefs for the object of the motivation (Bandura, 1996).

The Technology Self-Assessment features the 13 technology applications that are described in the ISTE NETS literature. Each application explores four graduated levels of skill self-efficacy and value for each of the 13 applications. Additionally the instrument includes items that explore the effects of past experience, and integrated usage in project-based situations on skill self-efficacy and value-beliefs for each technology application.

Some of the proposed advantages of using this instrument over other known instruments are:

- Specifically designed to represent the ISTE NETS standards for preservice teachers
- Supported by meaningful theories that are particularly valuable to demonstrate motivation to use various integrated technology applications preservice teachers
- Measure detailed technology skill self-efficacy of preservice teachers for a number of technology innovations
- Measures past experience and integrated usage of each technology application which is known to have affects on technology skill self-efficacy in preservice teachers
- Instrument was valid and reliable when used with two groups of preservice teachers
• Instrument is well suited for longitudinal studies
• Instrument is well suited to provide information to assist teacher development programs in their self-evaluation
• Instrument is easy to administer.

Conclusion

It is important that preservice teacher institutions assist their graduates in acquiring needed skills, methods and motivation to use integrated technology in their learning and future classrooms upon graduating as teachers. Accurately measuring elevating technology skill self-efficacy and value-beliefs with a reliable instrument is also important to preservice teacher institutions who are developing future technology using teachers. The Technology Self-Assessment measures technology skill self-efficacy and value-beliefs, and should be a valuable aid in demonstrating the growing motivation to use integrated technology among future teachers.