The KARPE Model for Differentiating Teaching and Learning with Technology

Lawrence A. Tomei, Robert Morris University, USA

ABSTRACT

Since 1996, the K-A-RPE Model has served to differentiate teaching and learning of technology. It is offered here as an archetype for other institutions seeking to develop their own comprehensive technology program. Knowledge, Application, Research, Practice, and Evaluation (K-A-RPE) offer the necessary dichotomy among instructional technology programs for undergraduates, graduates, and doctoral candidates. Similar to other more well-known taxonomies, the K-A-RPE Model is progressive and assumes mastery and competency at previous levels. Readers are exposed to the ISTE technology standards for teachers as well as how particular institutions implement the set of competencies in their individual programs of study. By establishing how technology skills are addressed in higher education, readers will be able to transfer the KARPE Model to new initiatives at all levels of instructional technology education, business, and corporate as well as traditional education. At the outset, it should be made clear that the focus of this study is on the more restricted domain of instructional technology — the use of technology for teaching and learning.

Keywords: differentiated learning; teaching with technology; technology education

INTRODUCTION

The phenomenon of technology-based learning has changed dramatically the direction and delivery of education in the past decade. Pastore (2001) estimated that by 1999, 1,500 colleges and universities were offering Web courses, with that number expected to double by 2005. The U.S. Department of Education found about 26,000 online courses with an estimated 100 new college courses going online every month (James & Voigt, 2001).

To meet the increasing demands for technology at all three levels, technology-
based education programs have been implemented for pre-service (undergraduate students), in-service (classroom teachers and graduate students), and post-graduate (doctoral candidates) learners. Technology courses across three levels beg questions in the minds of faculty and students alike, as they move through their formal education agendas. Specifically:

- When it comes to technology skills and competencies, what can I expect to learn differently as a graduate or doctoral candidate than I did as a freshman?
- Is there a different set of skills and competencies appropriate for each of these levels?
- If I take undergraduate technology courses am I sufficiently prepared (i.e., competent) to use technology throughout an entire career?

### REVIEW OF THE LITERATURE

#### Standards and Instructional Technology Education
The International Society for Technology in Education recognizes three distinct levels of personal technology development in higher education (ISTE, 2004). At the outset, technology foundations are suitable for all learners as they advance their own strategies for acquiring knowledge. At mid-level, skilled practitioners acquire the tools they need to exercise their chosen avocation. At the highest level, professionals seek the competencies necessary to share a lifetime of service and experience with peers and colleagues and thereby advance their profession.

Table 1 illustrates the emphasis placed by the ISTE on the various skills and competencies expected of educators. At the outset of the educator’s career, stress is laid on grasping technology operations and

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**Table 1. Profiles for technology-literate teachers (ISTE, 2005)**

<table>
<thead>
<tr>
<th></th>
<th>I. Technology Operations and Concepts</th>
<th>II. Planning and Designing Learning Environments and Experiences</th>
<th>III. Teaching, Learning, and Curriculum</th>
<th>IV. Assessment and Evaluation</th>
<th>V. Productivity and Professional Practice</th>
<th>VI. Social, Ethical, Legal, and Human Issues</th>
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<td>9</td>
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