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# THE ROLE OF TEACHING PROGRAMMING AND PROGRAMMING LANGUAGES IN IS PROGRAMS

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# THE ROLE OF TEACHING PROGRAMMING AND PROGRAMMING LANGUAGES IN IS PROGRAMS

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## ABSTRACT

*This panel will discuss the role that education in programming languages and practices does and should play in information systems programs.*

## KEYWORDS

Education, Programming

## PANEL DESCRIPTION

Undergraduate IS degree programs are currently faced with a number of challenges: Historically low enrollments, employers demanding high quality graduates, and the perception among potential students and parents that all IT jobs are being outsourced overseas.

Traditionally, IS programs have placed some emphasis on programming with 6–12 credit hours of programming in a 30 credit program. Many IS programs determined there was a need to have a significant amount of programming for their graduates to compete with computer science majors and, in some case, technical school graduates. Does the current employment environment still hold programming skills as important as it did in the early 2000s or should IS majors refocus their efforts in non-programming analysis, design, and service management skills?

The panel will explore different issues surrounding how programming is taught, and what content is included within the IS curriculum. This list includes some of the issues and questions we expect the panelists to address:

- How many programming courses/credits are appropriate in an IS curriculum?
- How many different programming languages should be taught?
- If fewer credits are to be included on programming in the curriculum, what topics should be covered instead?
- Which programming paradigms should be followed?
  - For example, object oriented, procedural, functional, scripting, visual, and so forth

- Which role should industry demand play versus pedagogical needs?
  - For example, should we choose languages and development environments that students will experience in the industry, or should we choose ones that allow for superior learning?
- What should the balance be between technologies currently in use in industry versus emerging technologies?
  - For example, Ruby on Rails versus COBOL?
- Should we favor open-source technologies over proprietary technologies?
- Programming process versus programming skills
  - Programming courses as enablers to teach other skills (professional discipline, testing, object-oriented analysis/design/thinking, GUI, etc.)
- Does a heavy programming emphasis deter students from studying MIS? Is this a bad thing?
- What role does programming play in the ACM/AIS Model curriculum?
- What role should advisory boards and students play in making decisions on technology choices, emphasis, and weight of programming in the curriculum?

## FORMAT

Each panel member will give a 10–15 minute presentation on the role that programming plays in their current curriculum and/or what changes they would like to see. This will be followed by discussion among the panel members and the audience.

## MODERATOR

### **Jakob Holden Iversen, University of Wisconsin Oshkosh**

Jakob Iversen holds an M.Sc. in software engineering and a Ph.D. in computer science from Aalborg University, Denmark. He is currently an associate professor of MIS at the University of Wisconsin Oshkosh. His research focuses on agile software development, software process improvement, software metrics, educational technologies, and IS education. Iversen has publications in *Annals of Cases on Information Technology*, *The Database for Advances in Information Systems*, *International Journal of Information Management*, *Information Systems Journal*, and *MIS Quarterly*. His teaching includes object-oriented programming, computer networking, data security, and business information systems.

## PANELISTS

### **Michael A. Eierman, University of Wisconsin Oshkosh**

Michael Eierman is a professor on the Management Information Systems Team in the College of Business Administration at the University of Wisconsin Oshkosh. Dr. Eierman holds an M.S. in Management Information Systems from the University of Wisconsin Madison and a Ph.D. in Management Information Systems from the University of Minnesota. His current research focus is on object-oriented technologies, including the impact of UML on systems analysis and maintenance of object-oriented software, and IS education.

**Matt Germonprez, University of Wisconsin—Eau Claire**

Matt Germonprez is an assistant professor at the University of Wisconsin—Eau Claire. His research is on computer-supported group practices. He relies on the examination of individual and group actions to determine how technology is tailored and used to resolve distorted communications. Secondary streams of study include theory use, mobile computing, service-oriented architecture, and interface design. He teaches object-oriented programming, distributed computing, and service-oriented architecture. His work has been accepted at *Information Systems Journal*, *The Journal of the Association for Information Systems*, *Communications of AIS*, *Organization Studies*, *International Journal for Standards and Standardization Research*, and *IFIP Transactions*.

**Matthew Nelson, Illinois State University**

Matt Nelson is an assistant professor in Accounting and Business Information Systems. His research interests include technology adoption and diffusion, technology standards development organizations, interorganizational systems, and the economic value of information technology. His teaching interests include "Information Systems in Organizations" (ACC 270) and "Information Systems Analysis and Design." Nelson has publications in *International Journal of Electronic Commerce* and *Mathematical and Computer Modeling*. Nelson earned a bachelor's degree in Accounting from the University of Michigan, a master's degree in Information Systems from Eastern Michigan University, and a Ph.D. in Information Systems from the University of Illinois.

**Roberta Roth, University of Northern Iowa**

Roberta Roth holds a Ph.D. in Business Administration from the University of Iowa, an M.B.A. from University of Minnesota, and a B.S. in Industrial Administration from Iowa State University. Her teaching interests include Structured Business Programming Concepts, Systems Analysis and Design, Cooperative Education, Introduction to Information Systems, and Information Systems Development. Her research interests include teaching programming via the Web.