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SA&D and Database: Should we be researching what we are teaching?

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ABSTRACT

The panel will examine the reasons for the mismatch between SA&D and database teaching and research. The implication of this mismatch on the MIS academic and practitioner communities will also be discussed and debated.

PANEL DESCRIPTION

Systems analysis and design (SA&D) arguably is at the core of the MIS discipline. There is a course on SA&D in almost all MIS curricula and SA&D is probably the only course that is seldom found in other disciplines (e.g., computer science or marketing or strategy). Database design also exists in almost all MIS curricula. Given the pivotal roles of SA&D and Database courses in MIS curricula, we would expect to see a representative quantity of research on these topics in top MIS journals, reflecting the critical roles of these two areas in MIS curriculum. However, evidence suggests that this is not true (Vessey, Ramesh and Glass, 2002). They found that in the period between 1995-2000, research on SA & D and databases accounted for only 7% and 3%, respectively. The number of MIS researchers pursuing SA&D and database research also appears to be declining.

Are SA&D and database design well structured sciences and precise engineering fields that require no further research? Unfortunately, that is certainly not the case. The truth is that Systems analysis and design, and database design are still considered more of an art than a science. For example, in their book, Whitten, Bentley, and Dittman (2004) state (Preface, Part One) "There are no secrets for success, no perfect tools, techniques, or methods. To be sure, there are skills that can be mastered. But the complete and consistent application of those skills is still an art." In other words, the specific activities, tools, techniques, methods, and technology clearly need further research. Similarly, while George *et al.* (2004) provide extensive coverage of the Unified Modeling Language (UML) in putting together their text, the content could benefit from specific guidance on the usage of UML grounded in research. Because of the recency of UML specifications, the usability and complexity of UML models are an unknown quantity (Siau *et al.* 2004). Textbooks need to be based both on current research and practice, each side complementing each other to produce effective and useful knowledge. Given the above-mentioned decline in research in the area of systems analysis and design today, this balance may be threatened.

In the long run, practice alone cannot provide us the "ways of knowing" (Stone, 1978) for teaching effective tools, techniques, and methods. Cohen and Nagel (1934) list four ways of knowing: tenacity, intuition, authority, and science. Tenacity is the tendency to continue to believe a proposition through habit or inertia. Should we continue our faith in the structured approach when the object-oriented approach promises to be more effective? Authority involves appealing to some highly respected source to substantiate the views held. Should we base systems analysis on use cases merely because some authorities are firmly behind it? Intuition relies upon the appeal to "self-evident propositions". Is functional decomposition the best intuitive approach to handle complex applications? If yes, then why is it not applied to use cases? Science aims at knowledge that is objective, and that is based on research. Thus, research is the best "way of knowing", or "confirming what we feel we know".

The possibility of impedance mismatch between research and teaching in these two areas – SA&D and database - needs scrutiny. Are we paying enough attention to and allocating enough resources to these research areas that are central to MIS? Or is it the case that research and teaching in MIS should be disjoint? These are serious concerns that merit serious debates and deliberation, and if warranted, redress.

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