APPLYING HPCC TECHNOLOGY TO SYSTEMIC DIVERSITY DILEMMAS

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Abstract

The authors present their decades of research and development experience in applying High Performance Computing and Communications (HPCC) technology to defense simulations and training. They discuss current dilemmas in education, including increasingly diverse classrooms and identify those for which HPCC technologies may hold the answer. Further they adduce evidence to support their thesis that such technology could be applied, resulting in attractive cost/benefit ratios, increased pedagogical efficacy, fewer teacher administrative burdens and, most importantly, more effective responses to diversity-related needs found in several disparate dimensions. They recount their hands-on experience in pre-college education environments, their compilation of data on classroom teacher perceptions and their justification and procurement of HPCC assets to meet otherwise daunting challenges. A special feature of this work is its concentration on teacher-centered services that are relevant, accessible and controllable by less technically sophisticated teachers, especially in early education environments. Rather than imposing that which is technically exciting, they focus on what teachers and learners want and need. Personalizing individual instruction, to both enable each student to learn and to address the identified classroom dilemmas, can arguably be best served by well-designed HPCC-supported platforms and modules. The extensibility of this approach to informal education is explored in the context of museum education.