Computer technology is a complex and constantly changing field. These characteristics place considerable on-going demands on teaching and curriculum development. Given the prevalence of PCs this problem is further exacerbated by an increasing number of students from different disciplines attending both introductory and advanced courses on computer and network technology. Lecturers need a new pedagogical framework of a PC based on a new higher-level abstract model. This model must be suitable for a wide-range of students, assist in the development of understanding, support different levels of technical detail and be valid for both current and future generations of digital technologies. This paper proposes bandwidth-nodes as such an abstract model and the basis of computer and network technology curriculum. Work to date indicates that modelling the PC as a collection of nodes, whose performance is rated by bandwidth measured in frames/s, provides a viable constructivist framework that is readily understandable by students from all disciplines. Results to date indicate this framework is also valid at increasing levels of technical complexity. Furthermore, it is essential to provide students with procedural knowledge that is relevant to both student and employer expectations. Competency based testing is proposed as a mechanism to provide assurance of appropriate levels of such practical skills and results of its implementation are presented.

Keywords: Curriculum, bandwidth, constructivism, modelling, B-Nodes, Competency

1. BACKGROUND
The computer science curriculum at Edith Cowan University (ECU) is Level 1 accredited by the Australian Computer Society (ACS). However, a study by Maj, Robbins, Shaw and Duley (1998), of final year computer science graduates at ECU found that students could not perform routine operations on a PC, to an acceptable standard of safety based on employer expectations:

‘None of these students could perform first line maintenance on a Personal Computer (PC) to a professional standard with due regard to safety, both to themselves and the equipment. Neither could they install communication cards, cables and network operating system or manage a population of networked PCs to an acceptable commercial standard.’

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