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Abstract

**Practical to Construct, Practical to Use:  
An Institute-Based Repository of Re usable Learning Objects**

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Web based interactive technologies can be a rich and effective means of bringing topics alive in both traditional and distance learning. Such technologies, however, can be difficult, expensive and time consuming to construct and very often represent a worrying obstacle to busy educators in using and developing interactive technologies. Student management systems such as BlackBoard, WizLearn, FirstClass etc are useful systems for managing student-tutor correspondence but provide limited help in the actual construction of interactive content. Education institutes therefore need to provide effective and practical support to help educators exploit the interactive capabilities of web and computer based technologies, which at the same time keeps educators in full control of their teaching.

A natural and practical solution is the creation of an institute-based repository of reusable learning objects. Such learning objects can be any useful stand-alone item such as a Java applet, animation, video, text etc, which can be creatively pasted together to form quality interactive teaching support via the web or within traditional classroom teaching. Given that educators are comfortable with creating text based support teaching materials (handouts etc), we focus here on interactive support which can help educators bring life to their written text. In particular, we discuss an array of institute-based animation and Java applets that are practical to construct and use as well as fully complimenting each other in terms of their illustrations. We further demonstrate that such interactive learning objects can be straightforwardly constructed using dynamic geometry software and almost any computer algebra system, which are standard tools of the trade for post secondary mathematics educators. As such, interactive

learning objects can be practically constructed without the need for sophisticated programming techniques or a plug-in for use on the web. An institute-based repository of reusable interactive learning objects is therefore practical to construct and naturally evolves for busy educators to exploit in their teaching and support teaching.