Enhancement Techniques for Student Engagement in Cybersecurity Education

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Abstract. In order to create successful cybersecurity professionals, it is important to engage students in a way that bridges the gap from the academic to the real world. In this paper, we present three examples used within teaching at Southampton University: The use of real-world scenarios presented through virtual environments, the creation of a cryptography learning platform and the fostering of student communities to support learning through social networking. We explore the ways in which practical hands-on experience based on industry can better support the development skills. We examine how real-life techniques can be combined with gamification and personalised learning to engender positive engagement. We consider how real-world scenarios within the educational institution can be utilised to further learning within in a safe but relevant context, being mutually beneficial to the students and institution. Finally, we consider the role of fostering a strong cybersecurity student community, using social networking, student societies and extra-curricular activities.