香港城市大學
City University of Hong Kong

Development of Virtual Engineering Surveying & GPS Learning Workshop for Construction & Structural Engineering Curricula

Project Number: 6000131

Principal Investigator: Dr Ivan Wing Hong FUNG

Grant Type: TDG

Abstract:

The knowledge to be covered in Engineering Surveying (Undergraduate Modules: BC3144/ BC3144F/ BC3144P/ BC4145) for Construction & Structural Engineering (CSE) Curricula is extremely intense and dynamic. Traditional didactic lectures have been considered ineffective for today's educational needs, i.e. critical analysis and active participation. Some engineering specialists proposed the use of a Surveying Day Camp (with intensive fieldwork sessions) for tertiary teaching. Virtual Engineering Surveying & GPS Learning Workshop (Virtual ES-G Learning Workshop) stresses the application of the real survey cases with both theoretical knowledge and experimental skills for students, which are lacking in traditional training.

Virtual ES-G Learning Workshop which can trigger students' higher level learning do exist in the CSE practice, despite those fieldworks are rarely consolidated and structured in a logical way for teaching purposes. There are high possibilities that the Virtual Workshop could be adopted in Engineering Surveying especially for tutorials sessions. However, high-quality case-based tutorials do require a lot of valuable teaching resources. Virtual Workshop may be an effective mean for introducing case-based learning to Engineering Surveying programme. This investigation strives to identify surveying cases relevant to the CSE curricula, and to these jobs will be developed into teaching materials for Engineering Surveying programmes. With the case study materials, a web-based multimedia learning centre for Engineering Surveying in CSE curricula will be derived. Extensive validation and verification will be conducted with teachers and students of CSE programmes to determine the effectiveness of the web-based Virtual Workshop. It is envisaged that this investigation will put HK into the leading edge of applying the use of Virtual Workshop in engineering education.