

**AN INFORMATION AND COMMUNICATION
TECHNOLOGY-BASED APPROACH TO BUILD A
COLLABORATIVE PEER GROUP LEARNING
FRAMEWORK ON MOBILE AD-HOC NETWORK**

DELATH RAYAN PRASANNA DE ZOYSA

A dissertation submitted in partial fulfilment of the requirement for Bachelor of Science
(Honours) degree in Software Engineering

Department of Computing

**Informatics Institute of Technology, Sri Lanka in collaboration with
University of Westminster, UK**

2021

Abstract

Peer-group learning is introducing in numerous academic organizations as a successful method to develop cognitive and social features. Every person can observe a spontaneous peer group exercise informally between university students, often in outdoor areas. Because it is challenging to take proper mediation artefacts and tools at an outside area, conveying group learning exercises in before-mentioned resource-constrained settings is uninteresting. Now, most students bring wireless connectivity equipped laptop machines that can successfully use as a mediation artefact. Nevertheless, as students usually have informal peer group sessions outside the institute, they face it challenging to utilize many laptop machines interactively in a group session; also, it makes ineffective when increasing group membership in the group. Hence, it is generally seen that students only use a single laptop machine for their group session, and small groups do these sessions separately. It is not only underutilized accessible computer resources still also decreases the advantages of group learning.

VLearn system built to succeed certain limitations. The proposed system used a mobile ad hoc network for communication medium also add collaborative feature like screen sharing, divide from large group to small groups to increase the effectiveness of the collaborative learning. The VLearn system has evaluated by technical and domain experts through several measurements, for examples, the user experience of the application and the difficulty.

Keywords: Collaborative Learning, Mobile Ad-Hoc Network