

## Virtual Laboratory with Web3D and Moodle

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In the world of education, lab activity conducted in the laboratory into one of academic activities aimed at students closer to the real world of work. It is recognized that building a laboratory infrastructure requires substantial resources and access of it was limited by place and time. Information technology can be used to build a virtual laboratory with flexible access. This poster presents the research for building a virtual laboratory using Web3D technology and Moodle. Web3D refers to technology used for creation of interactive 3D graphics and animations, especially for use on the internet. Web3D uses Virtual reality Modelling Language (VRML) – also known as Virtual Reality Mark-up Language to publish 3D objects with animations and interactivity over the web. The combination of multimedia and virtual reality that characterizes the WEB3D project will ultimately provide a user-friendly interface to encourage distance learning [4].

Moodle is a software package for producing Internet based courses and web sites [1]. It's an ongoing development project designed to support a social constructionist framework of education. Moodle is emphasizing more learner-centered activity and system interactivity for remote learners than traditional classroom students [3]. Virtual laboratory that was build in this research is a virtual laboratory for computer network lab. Initially this virtual laboratory is built using Web3D technology. The overall system framework is shown below (Fig 1). As seen in the figure, the virtual laboratory that was built consisting of animation and simulation components as well as having some form including assesment form. With these components the virtual laboratory will be an effective and interesting learning tool . A.Toh [2] stated Virtual laboratory offers a number of benefits such as anytime, anywhere access, improved motivation, access to higher or novel learning styles, opportunities for independent learning, better integration of information and communication technology tools and increased parental engagement.

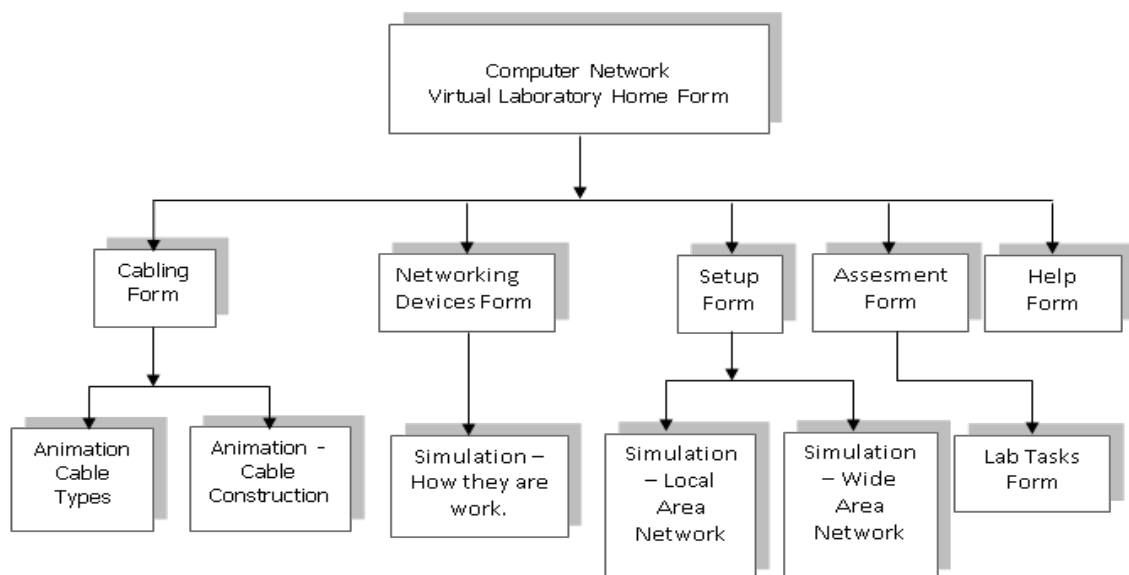


Figure 1. Virtual Laboratory Framework

Virtual laboratory created by Web3D subsequently used as Moodle Plugin and can be used to build web-based eLearning.

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