

**Universiti Teknologi MARA**

**Framework Design for Teaching and Learning  
Chemistry Subject using Visual Concept Maps**

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## ABSTRACT

This research proposes a multimedia teaching and learning prototype that applies Concept Maps for Chemistry subject. Multimedia offers an extraordinary focal point to improve learning environment and a decent information representation system which is Concept Maps is utilized to speak to Chemistry actualities in a visual and graphical structure. In learning Chemistry subject, understudies need to constrain themselves to envision and remember actualities, ideas, and process in wording to comprehend the subject. Hence, understudies see Chemistry as troublesome and extremely unexciting subject and hard to empower understudy's creative ability while they are attempting to develop their reason and judgment. The exploration's destinations are to outline a multimedia model application for showing and learning Chemistry subject, to apply Concept Maps as an apparatus in showing and learning module for multimedia model application and to assess the adequacy and the convenience of multimedia showing and learning Chemistry subject. The exploration approach utilized is ADDIE model which is the standard methodology in multimedia application advancement. A testing directed to assess the viability and the convenience of Multimedia Teaching and Learning Chemistry subject. The new option of showing and learning Chemistry subject is more powerful contrast with ordinary system since the respondents enhanced their execution. Understudies' recognition and conduct are additionally positive, thusly it is considered as a usable device to help understudies in showing and learning Chemistry subject.

Keywords: Teaching and learning Chemistry subject, Multimedia Application, Knowledge representation, Concept Maps.

# CHAPTER 1

## INTRODUCTION

In this section passes on a general prologue to the errand. The point will be centered around the logical of the research, research objectives, problem statements, scope of study, and research consequence. For the most part, it is noteworthy to fathom the general exploration.

### 1.1 Project Background

According to research by (Sustainable Engineering Group (SEG), 2008) Multimedia gives energizing conceivable outcomes for addressing the need of learners, learning with Multimedia is a way where the substance of instructional utilizing a few strategies, for example, visual and sound-related material and how the learners utilization of these to make information. According to (Richard E. Mayer, 2006) Multimedia principle generates many of interest in multimedia learning where people learn much better from words and pictures instead of reading only words which are the major format of instructions and learning for years .So, in this project the multimedia principles will be used in generating concept map for learning.

Concept maps or Mind mapping are graphical tools for forming and demonstrating knowledge. They usually bounded in circles or boxes of some kind, and relationships among concepts specified by a connecting line linking two concepts (Joseph D.Novak & Alberto J.Canas,2006). That is why this project focuses on designing Concept Map learning using 2D interactive graphical animation through visualization of multimedia environment. Visualization is widely used in multimedia approach, such Concept Map itself. Any information that was created regarding non-visual data can be considered as visualization, then it will create an image or some other results which are recognizable and readable (R. Kosara,2008). Also, by using a concept map, students have a visual mechanism to represent a set of ideas by linking the related things and explaining the