

## Construction and selection of usefulness evaluation items

### ABSTRACT

The purpose of this research was to construct a set of indicators or items that could measure the usefulness of mathematics courseware (MC). Usefulness is a quality attribute to which a person believes that using a particular MC would enhance students mathematical understanding of certain topics and engage them in learning activities. In order to construct the items, open ended survey forms were distributed to five mathematics courseware developers. They were asked to list down the essential factors and items that are important in a of good mathematics courseware. In parallel to that several mathematics courseware reviews and evaluation instruments were analyzed. Ultimately, the preliminary survey and literature-based produced a checklist with 85 items consisting of three factors, which were usability, functionality and efficiency and seven criteria which were ease of use, attractiveness, concepts presentation, assessment, reinforcement, accuracy and learning support material. The mapping of items according to their criteria and factors are discussed. The items were then reviewed by 10 experts in two rounds of content validity check. Finally 66 usefulness items from seven factors with reliability range between 0.723 to 0.911 were produced.

**Keyword:** Mathematics courseware; Usefulness attribute; Usefulness model; Usefulness items