Construction Of An Evaluation Instrument For A Web-Based Learning Environment (WBLE) And Validation Of Its Causal Structure

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Synopsis

This research is aimed at constructing an evaluation instrument for a Web based learning environment and furthermore to validate its causal structure. The evaluation instrument assumes that there are five principal factors in evaluating a WBLE: the Usability, Pedagogy, Accessibility, Information quality, and Added value. A questionnaire with five point Likert-scale has been developed for such a purpose. A priori model was developed to depict the possible causal effect of Usability, Pedagogy, Accessibility and Information quality on Added value. The quantitative research method was used to collect data from 650 students at the Syrian virtual University (SVU).

The process of data collection was conducted through two stages. The first data set (300) was subjected to an exploratory factor analysis (EFA), and the second data set (350) was subjected to a confirmatory factor analysis (CFA). Data were analyzed using descriptive statistics, factor analysis, and correlative analyses between factor score estimates. The descriptive statistics estimated the item means and deviations. The EFA was conducted to determine the items for each specific factor as well as factorial structure of the instrument. Factors were then assessed for their levels of internal reliability. Conducting EFA on the first data set resulted in seven factors for Usability; thirteen factors for Pedagogy; four factors for Accessibility; four factors for Information quality; and four factors for Added value.

Confirmatory factor analysis using a structural equation modeling approach and the AMOS software was employed to measure the goodness-of-fit indices and to construct reliability of the instrument. The priori model was confirmed. The findings indicated that the priori model fits with data. Furthermore, the findings indicated that the constructs Usability, Pedagogy, Accessibility, and Information quality affect the Added value. Finally, correlations among factor scores were measured and reported.

Pembinaan Instrumen Penilaian Untuk *Web-based Learning Environment* (WBLE) dan Pengesahan Struktur Kausalnya

Sinopsis

Kajian ini bertujuan untuk membina instrumen penilian untuk persekitaran pembelajaran berasaskan web (WBLE) dan mengesahkan struktur kausalnya. Instrumen penilaian bersasaskan andaian bahawa terdapat lima faktor asas untuk menilai WBLE, iaitu Kebolehgunaan (Usability), Pedagogi, Aksesibiliti, Kualiti Maklumat, dan Nilai Ditambah (*Added value*). Satu soal selidik berdasarkan skala Likert lima poin telah dibentuk untuk tujuan itu. Model priori dibangunkan untuk menggambarkan potensi kesan Kebolehgunaan, Pedagogi, Aksesibiliti, dan Kualiti Maklumat ke atas *Added value*. Kaedah kuantitatif digunakan untuk pengumpulan data dari 650 pelajar Syrian Virtual University (SVU). Proses pengumpulan data melibatkan dua tahap. Pada tahap pertama data set (300) mengalami analisis faktor eksploratori (*exploratory factor analysis, EFA)*, dan data set kedua (350) menjalani analisis faktor pengesahan (*confirmatory factor analysis, CFA)*. Data dianalisis menggunakan statistik deskriptif, analisis faktor, dan analisis korelatif antara *factor score estimates*. Statistik deskriptif merangkumi min item dan sisihan piawai. EFA dijalankan untuk menentukan item-item bagi setiap faktor spesifik dan juga struktur faktorial untuk instrumen. Faktor kemudian dinilai dari segi tahap reliabiliti dalaman. Penggunaan EFA ke atas data set pertama menjanakan tujuh faktor bagi Kebolehgunaan; tiga belas faktor bagi Pedagogi; empat faktor bagi Aksesibiliti; empat faktor bagi Kualiti Maklumat; dan empat faktor bagi *Added value*. Analisis faktor pengesahan melalui kaedah model persamaan struktural (*structural equation modeling*) dan perisian AMOS digunakan untuk mengukur indeks keselarasan (*goodness-of fit indices*) dan memastikan reliabiliti instrumen tersebut. Model priori telah disahkan; dapatan kajian menunjukkan bahawa model priori bersesuaian dengan data. Dapatan kajian juga menunjukkan bahawa konstruk-konstruk Kebolehgunaan, Pedagogi, Aksesibiliti, dan Kualiti Maklumat mempengaruhi *Added value*. Akhir sekali, korelasi antara skor faktor diukur dan dilaporkan.

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