# Validating an Integrated Multimedia Presentation Conceptual Model through Expert Reviews

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*Abstract*—**This paper discusses the validating procedures of the proposed Integrated Multimedia Presentation Conceptual Model (IMPCM) through expert reviews. Proposed IMPCM has been assigned for expert reviews in order to validate the model. Hence, concept and definition of proposed IMPCM is described. Expert reviews methods and a procedure involved in this study is outlined in detail. Findings of the expert reviews is gathered and illustrated in order to improve and amend the existing IMPCM. Finally, IMPCM has been modified according to the feedbacks from the expert reviewers. This study concludes that the validation procedure using expert reviews is successful in improving the proposed IMPCM.**

*Index Terms*—**Integrated Multimedia Presentation; Conceptual Model.**

## I. INTRODUCTION

The proposed Integrated Multimedia Presentation Conceptual Model (IMPCM) is designed based on the initial survey and Information and Communication Technology (ICT) syllabus for teacher education by the Institute for Teacher Education Malaysia. The initial survey that has been carried out among trainee teachers has revealed the need for a form of extra help in developing integrated multimedia presentation [1]. This is in line with the need to improve the skills and competencies of knowledge in Information and Communication Technology aspired through the Conceptual Model of Teacher Education and Malaysia Teacher Standards [2], which are imposed on every teacher in Malaysia.

Thus, the study takes the initiative step to examine the syllabus of the teaching and learning technology for the course EDU3053 in teacher education at the Institute of Teacher Education. Results from these studies allow for the proposed IMPCM to be identified as components in Figure 1: multimedia elements, cognitive learning theory, multimedia design, multimedia metaphor, existing knowledge and theory. In the proposed IMPCM, the pedagogical components and individual differences are indirectly embedded in the theories of learning, both being fundamentals in teacher education in their education courses.

## II. EXPERT REVIEWS

A natural starting point for evaluating new or revised interfaces is to ask users for their feedbacks. Such informal demos with test subjects can provide some useful feedback, but more formal expert reviews have proven to be far more effective. Experts are expertise may be in the application or user interface domains. Expert reviews can occur early or late in the design phase. The outcome can be a formal report with problems identified or recommendations for changes. There are a variety of expert review methods from which to choose such as Heuristic evaluation, Guidelines review, Consistency inspection, Cognitive walkthrough and Formal usability inspection [3].
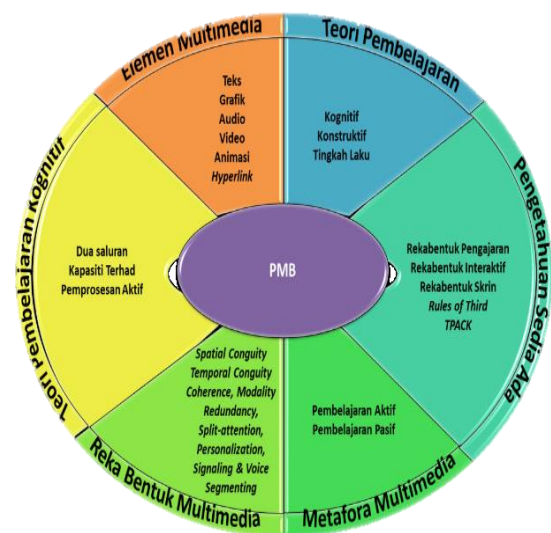


Figure 1: The model

### A. Expert Reviews Method and Procedures

Expert consultation sessions were made with the view of ensuring that the components involved can represent and prove the effectiveness of the model [4] namely IMPCM. The objective of this assignment is to verify the components of the leading integrated multimedia presentations.

### B. Selection of Experts

Experts for the expert consultation sessions were selected based on a variety of backgrounds, skills and experiences, namely three experts in integrated multimedia presentation at the Institute of Teacher Education Ipoh. All of the experts have more than 20 years' experience in the field of multimedia presentations.

## C. Methods

Cognitive Walkthrough method was used in the study during the expert consultation. It is an alternative approach to heuristic evaluation for predicting users' problems without doing user testing [5]. Experts involve walking through IMPCM model with the questionnaire and noting problematic features (items or components). In which experts inspect the components and items relevancy in the model and predict problems users would have when interacting with it.

## D. Instrument

The instrument was a set of questionnaire inclusive of eight open questions and demographic profile related to the expert practice in integrated multimedia presentation, comments and suggestions of IMPCM about by the expert.

## E. Procedures

Experts selected were provided with the proposed IMPCM approval letter of the interview and a questionnaire a week before the consultation. The purpose of giving the materials one week ahead of consultation was to allow the experts to revise and evaluates the IMPCM (verse 1), beside the unpredicted experts schedule was taken under consideration.

## III. FINDINGS

The consultation showed that every expert used almost the same integrated multimedia presentation design development concept as illustrated in Table 1, based on the existing instructional design which included instructional strategies, message design and considering the target group learning style. The expert too suggested that the model should include learning model that promote and build-up creative thinking such as directed creativity model [6], use of latest technology such as web technology [7] and use of tablet [8].

The suggested model and technology also support the pedagogy that promote high order thinking skills (HOTS), which is align with the assertion by Ministry of Education (2012) in the Early Report of the Malaysia Education Development Plan 2013-2025 through the 1st. Wave: To Upgrade system under the Action Plan: Transforming Teaching Profession to be Selected Profession. Hence, these studies accept the suggestions and comments in the expert consultation as detailed in Table 1 as a significant contribution.

Table 1
Experts' feedbacks

| Question | Expert | | |
| --- | --- | --- | --- |
| | 1 | 2 | 3 |
| Service duration (years) | 26 | 33 | 21 |
| Highest academic qualification | Master Degree | Ph. D | Ph. D |
| The number of integrated multimedia presentation been developed | >20 | >10 | >10 |
| Use of concept in developing the integrated multimedia presentation | Yes | Yes | Yes |
| Concept used | • Principle & elements of design<br>• Screen design | • Graphic principles<br>• Multimedia elements concept<br>• TPACK | • Instructional design<br>• Learning cognitive theory<br>• Cognitive load theory |
| Opinions on suggested IMPCM | • Include Analyse, Design, Develop, Implement, Evaluate (ADDIE) | • Related to multimedia development | • Make it simple<br>• Involve new ideas and theory (s) |
| Improvement/suggestion to IMPCM (written) | - | • Consistent with the learning theory<br>• Consistent with the multimedia design;<br>• Consistent with existing prior knowledge. | • Ensure that the theory and instructional design practice with;<br>• State the advantages of the IMPCM compared to the existing model;<br>• Clear study of theoretical elements. |

## IV. CONCLUSION

IMPCM validated model in overall has fulfilled the study objectives; recognize the concept model components based on the expert consultation activities. The determined components is learned by the trainee teachers in their teaching study through the fundamental and compulsory subjects comprising of: (i) Educational pedagogy which covers pedagogy aspect i.e. instructional strategy, instructional method and individual differences; (ii) Technology in Teaching and Learning that took technology aspect such as web and basic technology knowledge; and (iii) Educational Technology that covers the instructional design and message design.

Each component includes item that can be selected by the trainee teachers as a guide and continues practice in preparing integrated multimedia presentation, parallel to current needs that is suitable with the teaching and learning. The components and elements that shape the validated and complete IMPCM are shown in Figure 2.
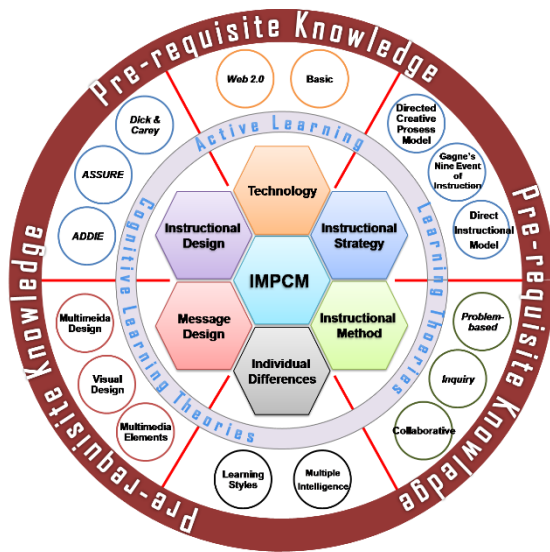
Figure 2: Validated IMPCM

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