Quality Assurance of Multimedia Learning Materials: A Case Study of CAP Foundation

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The CAP Foundation (www.capfoundation.in) is a Trust registered in India that addresses poverty alleviation through linking learning and livelihood needs of working children and disadvantaged youth at risk. It offers labor market-oriented vocational training opportunities throughout India and some places abroad. It operates through about a hundred learning centers, and is headquartered at Hyderabad, Andhra Pradesh, India. About 70,000 learners, who have typically not succeeded in the regular academic system, got trained effectively and placed in different vocations through CAP over the past 5 years. CAP also runs a multi-location community college, the largest of its kind affiliated to the Indira Gandhi National Open University (IGNOU), India.

CAP E-Skilling Project

CAP Foundation has recently undertaken a detailed exercise to develop highly effective multimedia learning materials in four sectors, namely Automobile, Healthcare, Hospitality and Retail. They also developed Life Skills modules that are useful for learners from all four sectors above. The multimedia materials are cumulatively in excess of 110 learning hours. Development has been completed and material has been made available for limited user testing on the Internet by CAP.

CAP recognized that imparting skills using the electronic medium is an unusual task that requires creativity, innovation and iteration in instructional design, content presentation, and technology. Substantial time and money were spent to develop modules with high learning effectiveness. Field training experts of CAP, subject matter experts, employer/industry representatives, experienced e-learning consultants, vendors selected through a stringent purchase process as well as CAP’s in-house teams participated in the design and development of CAP e-skilling materials.

Material Selected for Testing and Research Instrument

The Foundation decided to put all the e-skilling multimedia materials developed by CAP through a rigorous Quality Assurance process. For this purpose, an evaluation study has been carried out involving internal as well as external experts from the fields of multimedia and technology, open distance learning and media, instructional design, quality assurance, etc. The evaluation is based on the guidelines and parameters developed by the Commonwealth Educational Media Centre for Asia (CEMCA: www.cemca.org), The Commonwealth of Learning (www.col.org). The questionnaire developed by the CEMCA is used in this study. For this purpose, one specific module, named “Vital Signs” under the Healthcare sector is chosen for the study. The following are the reasons for choosing this module:

- It deals with subject matter that is of common interest
- It has a good mix of knowledge (concept) and upgrading of skills through practice components
- It contains a spectrum of concept complexity and media complexity
- End-user testing can be conducted with very few pre-requisite constraints
The Vital Signs module has 125 screens (slides), and is expected to map to 2.5-3.0 learning hours. It is developed in English with basic to medium level language complexity. For the purpose of this testing, audio in a local language (Telugu) was also supplied with the module.

**Some Information about the Material Tested**

- **Stakeholders:** Learners, healthcare institutions, certification bodies, CAP, material developers
- **Learners:** Those getting trained as nursing assistants or other healthcare services professionals
- **Purpose of the material:** Intended for formal/ informal education, for knowledge enrichment, and for skill development
- **Context of learning:**
  - The module may be used in two settings:
    - (a) Learning centers with multiple learners and a facilitator
    - (b) individuals learning from home or Internet browsing centers
  - Learners may be preparing for a vocation or already working
  - Learners may take this module as part of a formal certification program, or for informal knowledge or skill upgrades
  - The module is made available through the Internet. It may also be hosted on local machines and studied through a local area network

**Testing Methodology**

Two part testing is carried out as per the Quality Assurance of Multimedia Learning Materials (QAMLM) guidelines and parameters and evaluation instrument developed by CEMCA, to thoroughly test the material.

**Part-A Testing**

A QAMLM testing committee has been constituted, comprising internal quality control staff from CAP Foundation, as well as external experts representing ODL, e-learning and instructional design components. Care was also taken to minimize the overlaps between the Testing Committee and the Development Team for the module. The following are the members of the Testing Committee.

**CAP internal team:**

- Dr. Nalini Gangadharan (Chairperson)
- Mr. Ashok (Director, Quality)
- Mr. Murali Krishna (Instructional Design)
- Mr. Bargava Mothilal (Multimedia)

**External experts:**

- Prof. Vunnam Venkaiah (Open Learning & Media)
- Dr. Sreerama KV Murthy (Multimedia & Technology)
- Dr. Sudha P. Iyer (Instructional Design)

A detailed meeting was conducted of the Committee on 17\textsuperscript{th} January 2010, covering the following aspects:

- Explanation of the quality testing process
- Discussion of the development process
- Distribution of evaluation forms and supporting material
- Demonstration of the multimedia module
- Individual filling of evaluation forms

For more resources: [http://www.uwex.edu/disted/conference](http://www.uwex.edu/disted/conference)

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Filled individual evaluation forms obtained from the committee members are consolidated and statistical analysis is done on the same. These data and analyses will be presented to the distinguished delegates at the Conference.

**Part-B Testing**
A team of 50 paramedical and home-care assistants, employed by Heritage Hospitals, Hyderabad, is identified for this study. Access is given to this team to the multimedia materials, along with the QAML user evaluation sheets. The materials (with voice-over audio, and the audio transcripts) and evaluation sheets are made available to the learners both in English and their mother tongue (Telugu), to ensure that learners follow the material. Out of 50 selected for the study, only 26 exploitable questionnaires were received from the respondents and the analysis is made accordingly.

The learners have no prior knowledge of the QAML process, or the purpose of this testing. They were just asked to provide their structured feedback on the material.

Data collected are consolidated and statistical analysis is done. These data and analyses will be presented to the distinguished delegates in the Conference.

**Findings**

The evaluation study of multimedia learning materials revealed that:

1. More than half of the learner-respondents stated that the quality of the materials is excellent. The remaining respondents viewed that the material is very good or good. Nobody expressed that the material is bad.
2. The responses of the Testing Committee members are also same as those of learners. More than 50 percent stated that the materials are excellent while others viewed that they are very good or good.
3. Even though the learners had no access to any background information, their rating is by and large similar to the ratings of the experts in the evaluation team.
4. Though rating scale of Testing Committee members varies based on individual style and background, there is an overall agreement among them regarding the overall quality of the material tested.

**Presentation at the Conference**

The presentation covers the following aspects:
- Salient points about the development & evaluation process
- Content highlights
- Evaluation data, analysis and findings
- Some observations on the QAML guidelines and process.

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