ABSTRACT

Instructional design models have been used by course designers to create programs of instruction with the intention of organizing content to suit the learners’ needs. ADDIE, a widely-used instructional systems design approach organizes the procedure and systematically analyses, designs, develops, implements and evaluates a given instruction which will in turn produce efficient teaching and learning materials. This paper describes the processes involved in designing an English language communication professional development course for healthcare professionals using the ADDIE approach. Feedback and responses from the analysis and design phases provides input on how to proceed to the development phase. An iterative approach is utilised in each of the phases of ADDIE to ensure the sequence of content, interaction between learners and arrangement of learning activities are arranged systematically for learning to take place efficiently. The findings contribute to a design outline for developing professional development courses.

Keywords: ADDIE, course design, healthcare professionals, continuing professional development, instructional systems design.

INTRODUCTION

A healthcare professional's communication ability is an important factor for good clinical practice. Healthcare professionals are constantly involved in interaction with patients and are required to be able to handle conflict that may arise from ineffective communication. A “healthcare professional” is a generic term used to describe a person employed in the different departments of a healthcare institution, anyone working in the field of health, fitness and lifestyle education and management, ambient assisted living, continuing professional education and public health surveillance including doctors, nurses, pharmacists, radiographers, physiotherapists as well as hospital administrators (Boulos et al., 2011; Epocrates, 2013). In a multicultural country like Malaysia, the healthcare professionals are required to be fluent in spoken and written English communication (Ainol Madziah, 2011). Many have to brush up on the skill since English is rarely used among Malaysians. Healthcare professionals are required to upgrade their skills by attending a Continuing Professional Development course (CPD), which is “a process of lifelong learning aimed at meeting patients’/clients’ needs and improving health outcomes by broadening of knowledge, competency and skills as well as the development of personal qualities”, (Ministry of Health Malaysia, 2010, p.3).

Yet CPDs have been criticised for not being effective or not achieving its goals. In an Iranian study, Vaismoradi et. al. (2014) examined the curriculum content of the nursing program and highlighted the need for a curriculum that embedded patient safety aspects throughout the program. The study found a lack of humanistic values with genuine concern of the patients’ wellbeing. While Kuang, David and Lau (2013), looked at the politeness of front counter staff of private hospitals in Malaysia and found serving staffs were not greeting the patients in the way that was expected of most service industries. Additionally, Jebunnesa & Normah (2013) highlighted the need for a suitable test to measure English proficiency in Malaysian
setting which reflects the actual communicative needs of healthcare professionals. Hence, social communication abilities obtained through CPD training should be re-assessed, re-evaluated and emphasized constantly by healthcare industry.

**Instructional systems design**

Instructional design models have been used to create programs of instruction with the intention of organizing content to suit the users. “Instructional design”, “instructional development”, “instructional technology” or “ID” has its roots in the field of educational measurement. Seels and Richey (1994) described instructional systems design as an organized procedure and systematic approach containing steps to analyse, design, develop, implement and evaluate a given instruction. Nordin (2010) mentioned the use of instructional systems design to improve teaching and learning process through solutions to problems utilizing a systematic approach which observes and controls the functions of the approach, evaluation processes of its components, and sequence of activities. This will in turn produce efficient teaching and learning materials. Some of the prominent ones are the ADDIE model, Dick & Carey, Kemp’s model of instruction, Gagne’s 9 events of instruction and Kirkpatrick’s 4 levels of Training Evaluation.

**The ADDIE model**

The ADDIE model is one of the most prominent instructional systems design model used by educationists to create teaching and learning materials. The ADDIE instructional design model stands for “Analysis, Design, Develop, Implement and Evaluate”. It is a generic model used in the development process of instructional systems design. It consists of five stages or steps represented by each letter in the acronym (Gagne et al. 2005). Each stage has to be completed sequentially and at times it may be cyclical in nature. The ADDIE model has been used extensively in educational research, ranging from the designing stages in teacher education courses (Baharom, 2014), to the testing of the effectiveness of a proposed model on learning performance of engineering students (Salam et al., 2013), different education field such as nursing education (Hsu et al., 2014), medical education (Almomen et al. 2016; Lim, 2014) and technical and vocational education (Sharifah & Faaizah, 2015).

Instructional design plays an important role to ensure the development and delivery and evaluation of CPD programs fulfill the needs of the healthcare professionals and their industry’s requirements. Hence, the
importance to know how to design training programs systematically. The ADDIE model has been applied by course developers as a standardised approach for developing courses.

This paper describes the processes involved in designing an English language communication professional development course for healthcare professionals using the ADDIE model. Although the overall structure of ADDIE is described, the study would only focus on describing the design phase of the Communicative English for Healthcare Professionals CPD course. The main reason for this is the design process is mostly overlooked by course designers who are eager to proceed to the development of the product. By leaving out the critical design phase, course designers are at risk of creating poorly designed courses that do not match the needs of the users.

**METHOD**

**The needs analysis phase**

This is the first phase of the development of a course. It provides background information about its users by identifying the students’ prior knowledge, prerequisites for learning, their demographic information such as age, gender, academic level and economic status. These details are important to determine the students’ learning preferences, the teaching approach, content and the learning environment. Data collected in this initial stage will be evaluated in order to set the basic foundation for designing a suitable learning experience for the learners. Depending on the objectives of the course, a needs analysis would also look at the learning environment such as the equipment, costs, expertise and work culture.

In this study, purposive sampling was used to identify the participants who are healthcare professionals from different departments. A needs analysis questionnaire was distributed among the 38 participants and were collected immediately after the participants completed their responses. Later, 5 senior staff representing each professions in the hospital were identified by the management and a focus group discussion was conducted. They were identified by the human resources department as having more than 7 years of work experience. The departments involved were pharmacy, nursing, medical imaging, physiotherapy and administration. The design phase

The process of developing the strategy for a course aims to provide accessible information for learners as a model for language usage. Several factors were incorporated into the design process, including the content, the needs of the learners, the learning context and the criteria of instructional design.

The design phase is divided into 3 stages. The first stage is to design the learning environment by determining the objectives that is being expected out of the learners. Next, is to identify the items derived from the objectives. The design phase would form the objectives that are expected out of the students learning. This step is linked to the findings in the analysis stage. The final stage would be to create the items for testing which must be able to measure the achievements of the objectives.

The teaching materials are then arranged according to its layout and stages. Then it will go through the prototyping process to include visuals and design considerations as well as the type of multimedia being used in the module. Based on the contents arranged during the design stage, the course designer and developers would create and build the learning sequence.

**The development phase**

The development phase requires expert review to conduct the Alpha test. In this phase, 6 expert reviewers would be invited to go through the mobile module and provide their feedback on a questionnaire of the design in terms of content, teaching and learning approach and the design of the course. The rationale for having expert reviewers at the design and development phase is to have some feedback at the development phase and to make corrections to the module before it is distributed to the participants. Feedback from the
Alpha testing of the module with participants that have the same characteristics of the target participants would also be useful in determining navigation and interface issues before the actual evaluation takes place.

In this study, the experts are given separate questionnaires pertaining to their field of expertise and are divided as: mobile learning, content (English communication skills) and problem-based learning activity. The course developer would also monitor the development process with details of the progress in a work log.

The implementation and evaluation phase

The final stage in this study is the evaluation phase which includes the implementation and evaluation stage of the ADDIE model. During the implementation stage, the prepared module will be presented to the target participants in a real CPD setting. The procedures for instructors and learners are outlined which usually includes course curriculum, learning outcomes, delivery methods and testing. The learners will also be provided with a manual to help them with the navigation of the site.

In the final phase, an evaluation of the usability of the mobile module will be conducted using a questionnaire adapted from Koole’s FRAME model (2009). The questionnaires will be distributed to 150 participants who have completed the module. At the same time, 5 students will be selected to prepare a personal development diary to reflect on the learning activities that they have undertaken and provide feedback on the course content. The evaluation looks at ease of use of the module, online interactions, device preference and their insights after completing the CPD. Additionally, a semi-structured interview on the usability of the CPD will be given to 3 lecturers who are involved in the training as online facilitators.

RESULTS AND DISCUSSION

The needs analysis phase

The analysis phase highlights the responses given by the participants in the needs analysis questionnaire. Additionally, the results from the focus group interview also describes a positive outlook and the need for the course. The content was also evaluated by the group of peers and superiors in the focus group. The following are the themes identified.

Selection of Content

Table 1 shows the feedback given by the questionnaire participants on suitable topics for the English communication CPD. Organisational communication ranked highest while written communication is considered important by the respondents. Nurses, pharmacists and physiotherapists are in constant contact with patients while still need to prepare reports in English. Although healthcare professionals have been formally trained in their field with a minimum of diploma qualification, practice and constant update on writing skills would help them write better reports in English. Other topics listed as important were elements in speaking and listening skills.
Table 1. Topics included in the focus group discussion

<table>
<thead>
<tr>
<th>Topics</th>
<th>No. of responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational communication</td>
<td>14</td>
<td>56%</td>
</tr>
<tr>
<td>Written documents (i.e. memo, email, business letters)</td>
<td>12</td>
<td>48%</td>
</tr>
<tr>
<td>Telephoning skills</td>
<td>11</td>
<td>44%</td>
</tr>
<tr>
<td>Dealing with conflicts</td>
<td>11</td>
<td>44%</td>
</tr>
<tr>
<td>Entertaining clients &amp; socializing</td>
<td>10</td>
<td>40%</td>
</tr>
<tr>
<td>Using correct choice of words</td>
<td>8</td>
<td>32%</td>
</tr>
<tr>
<td>Questioning skills</td>
<td>6</td>
<td>24%</td>
</tr>
<tr>
<td>Improving concentration when listening</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>Showing appreciation</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>Negotiating agreement</td>
<td>4</td>
<td>16%</td>
</tr>
<tr>
<td>Showing empathy in conversations</td>
<td>2</td>
<td>8%</td>
</tr>
</tbody>
</table>

Preferred learning strategy

How do you prefer to learn?

![Bar chart showing the preference for learning in groups](image_url)

The participants in the questionnaire have cited their preference to learn in groups as compared to learning individually. The reasons were described in the focus group as, “a more relaxed approach” where “everyone can contribute to the discussion” and “not feel intimidated”. The seniors added that since they are considered to be adult learners, they would prefer a “less rigid”, learning approach to CPDs.

Use of mobile devices for learning

When asked their opinion in the focus group discussion about using mobile devices for learning, 3 out of 5 seniors still preferred to use traditional face to face training. They explain their preference was influenced by their belief that “communication should occur in the flesh” rather than by electronic means. The
interviewed seniors unanimously agree using technology such as computers and mobile phones is “just a tool” adding to the ruling of their workplace that prohibits the use of mobile devices in the hospital’s vicinity due to fear of bacterial contamination. Even though more workplaces are opening up to the policy of using mobile devices, hospitals are still firm on the prohibition due to the sensitive nature of hospitals as wanting to avoid the spread of diseases.

The design phase

The design phase involves the instructional designer or course designer to decide on the best approach to organise content and direct the teaching and learning activities in a course. Morrison et al. (2001) listed the following as the steps needed to be taken in the design phase; identifying instructional objectives, designing the instruction sequence, designing instructional strategies and designing the message. Instructional objectives would be identified based on the skills required in each topics identified and followed by a flowchart of how the learning sequence would take place. Next, the contents of the course will be compiled and arranged to determine the best strategies; notes, quiz, activities, resources.

Finally, a storyboard assembles all the elements in one place and arranges it according to the flowchart provided. Figure 3 shows a storyboard lining up the flow and the interface design to be integrated into the suggested CPD.

Figure 3. Storyboard for designing the interface

The design phase involves the course designer to determine the objectives and learning outcomes, arrange the content derived from the needs analysis phase, select suitable materials and media, ensure activities are suited for each topic and proceed with the development of the course. While still at the design phase, the researcher would also conduct a task analysis & prepare a storyboard for the intervention. This will later be passed on to a media specialist who will develop the module in the development phase. The researcher will complete a design checklist and proceed to the development phase once all the design process is complete.

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CONCLUSION

This paper contributes to our knowledge by addressing two important issues. First, concerning the different aspects that need to be taken into account when creating a professional development course for language learning of adults in a workplace. It can serve as a guide to identify learning activities, tools for course delivery and selection of contents. Since workplace learning has started to become more acceptable among employers, having a well-designed professional development course and one that matches the needs of its users is a valuable asset. Secondly, the study demonstrates how to strengthen teaching and learning components in CPD courses especially in the critical area of communication with patients.

This paper highlighted our experiences in implementing the first two phases of the ADDIE approach. Findings from the first and second phase opens up a path for careful consideration of elements to be included in developing the course materials even when the development, implementation and evaluation phases are yet to be conducted. The iterative nature of ADDIE helps to identify any issues that may arise in the early stages of the course development and rectify them before proceeding to the development phase.

The process of developing a well-designed CPD course, starts from implementing the ADDIE approach. Through a systematic course design which takes into consideration the needs of the users and stakeholders as well as analyzing results of each phase, assists training departments in organisations to avoid the risk of creating unnecessary and inefficient courses.

REFERENCES


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