A PROTOTYPE ELECTRONIC LESSON GENERATOR FOR MALAYSIAN TEACHERS

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INTRODUCTION

In line with the widespread use of ICT in education teachers have experienced tremendous developments in the manner they teach. Someone once said; “Teaching is not a lost art, but the regard for it is a lost tradition.” We don’t teach anymore so it seems! We are afraid to use the word ‘teaching’ lest we be accused of being old fashioned and out of touch with the ‘real’ world. Education it seems must be student centered and the teacher must only act as the facilitator, for fear that we be considered old fashioned and out of date. We must not forget the words of William Arthur Ward; “The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires”. In the Malaysian context, especially in the rural schools the students still need the services of these overworked teachers to provide quality teaching in order to obtain quality learning. Quality teaching comes from quality teachers who plan quality lessons and execute quality instructions. But how do these overworked teachers find the time to plan quality lessons and execute quality instructions every day when they have very little time to spare? They are busy marking exam scripts, planning school sports, attending to disciplinary problems and a host of other non-teaching matters. So where does quality teaching come from?

Do we at the Centre of Excellence for e-Learning, School of Educational Studies, Universiti Sains Malaysia believe we have the answer? This center was made possible by the grant awarded by the Project Steering Committee on e-Learning for Life. This committee was set up with the cooperation of the Malaysian Ministry of Education, United Nations Development Programme, and Coca-Cola Far East. This grant enables us to put our ideas into motion. We are of the opinion that teaching is still pertinent especially in the Teaching of English as a Second Language (TESL) context. We believe that teachers still have a lot to offer but they do not have the time or the
resources to produce good quality lessons consistently. A brilliant teacher is like what Samuel Johnson said; “Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information upon it.” We believe once the teachers view our work they would know we have the answer to their problem – sustainable quality teaching through reusable multimedia resources. The Sustainable Quality Teaching through Reusable Multimedia Teaching Resources Project is based on the premise that the teachers, due to their workload are unable to produce sustainable quality teaching even if they want to.

This is a pioneer project and the e-Lesson Generator is still at the prototype stage. At this initial stage, we have chosen to start with the Malaysian Primary Six English Curriculum for the simple reason that we need to start somewhere. Primary Six is also the transition period between primary and secondary education as such both Standard Six and Form One teachers can use them. Materials for the other levels as well as other subjects are in the pipeline, hopefully with the cooperation of the two interested parties mentioned earlier (University of Qatar and ETD, Ministry of Education, Malaysia).

Our platform is based on a simple lesson plan principle, which normally contains a set induction stage, a presentation stage, a practice stage, a consolidation stage and an evaluation stage. All these hardworking but busy teachers have to do is to go ‘shopping’. First they have to decide what to buy and who to buy it for (topic and student proficiency). Once the decision has been made, all they have to do is to go to the ‘supermarket’ (multimedia library that we have created). For that we provide them with a ‘trolley’ (an empty template) and with the ‘trolley’ teachers can walk around the supermarket (multimedia library) through the neat rows (different stages of a lesson) of shelves and collect the ‘materials’ (resources) they need. Once their trolley is full, they can leave the supermarket WITH the trolley (that’s wonderful isn’t it?). At ‘home’ (classroom) they can either ‘serve’ (teach) it straight from the can (template) or ‘heat’ (modify) it up a little to suit the ‘taste’ (needs) of the students. The whole free ‘shopping spree’ takes less than 5 minutes and you can ‘feed’ and satisfy 40 ‘hungry’ pupils.

HOW IT ALL STARTED

The ‘e-Lesson Generator’ (eLG) was borne out of another project, the e-Learning for Life Project which was sponsored by the United Nations Development Programme and Coca-Cola Far East. The objective of that project was to get English as Second Language (ESL) teachers to create their own lesson plans which were posted on a specially designed website to be used by other teachers. However, it was found that the teachers’ lesson plans were too rigid and fixed to be used by other teachers. The outcome from that project showed that there was a great need for a resource pool of multimedia based learning objects which is flexible and adaptable enough for teachers to customize to suit their learning objectives. This we believe and hope is part of the solution to the above-mentioned problem.

DESIGN AND DEVELOPMENT PROCESS

The design and development process was based on the systems approach model (Alessi & Trollip, 2001; Dick, Carey & Carey, 2001). A multidisciplinary team of experts was recruited for this project. Content experts managed the task of developing pedagogically sound lessons together with a team of content developers consisting of experienced English teachers who were pursuing their Masters and PhD degrees at
that time. Instructional designers were recruited to collaborate with the content experts and web developers to organize and develop the content in close coordination with good website design principles. Generally, the principles of a good web page design such as clear and consistent page organization, wise use of space, clear and consistent navigations and hyperlinks were adhered to. The first phase of formative evaluation was conducted with input from experts. The multimedia content developed was further revised and refined by the content experts themselves. These enhancements were duly incorporated into the website. After formative evaluation was done, the prototype was subsequently named the ‘e-Lesson Creator’, and is hosted at http://www.lessoncreator.net. The main page of the prototype is shown in Figure 1.

Figure 1: The Prototype Index Page

MAIN FEATURES OF THE PROTOTYPE
The main features of the e-Lesson Creator website are described below.

Content Rich Pedagogically Sound Reusable Multimedia Learning Objects
A comprehensive set of multimedia learning objects is presently available online for teachers to browse, choose and download. These multimedia learning objects are in PowerPoint, Flash animation and video formats. They are organized into three content areas based on the National Curriculum, namely, World of Knowledge, World of Self and World of Stories. In each of these content areas, the multimedia learning objects are organized into topics. Each of these topics is further structured into three levels of content based on learners’ ability: beginners, intermediate and advanced. Figure 2 illustrates the organization of the multimedia learning objects content in the prototype and the number of topics available under each content area.
In Malaysia, a typical instructional plan usually consists of five events of instruction; 1. **Set Induction**, 2. **Delivery**, 3. **Practice**, 4. **Production** and 5. **Closure**. The multimedia lesson objects were developed based on these five stages of instruction. For each stage of instruction, four multimedia learning objects were developed. This resulted in a matrix of $5 \times 4$ choices of multimedia learning objects for each topic at each sublevel of instruction. Table 1 illustrates the organization of multimedia lesson objects for the **Area**: World of Knowledge, **Topic**: Local Places, Towns and Cities, and **Level**: Beginner.

**Table 1: A sample set of multimedia learning objects**

<table>
<thead>
<tr>
<th>Event of Instruction</th>
<th>Multimedia Learning Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set induction</td>
<td>Stating the Landmarks</td>
</tr>
<tr>
<td>Delivery</td>
<td>Reading the text</td>
</tr>
<tr>
<td>Practice</td>
<td>Complete the partial answer</td>
</tr>
<tr>
<td>Production</td>
<td>Fill in the blanks</td>
</tr>
<tr>
<td>Closure</td>
<td>Crossword puzzle</td>
</tr>
</tbody>
</table>

A total of 3,241 multimedia learning objects were developed. Details of each multimedia learning object on the *e-Lesson Generator* can be obtained from the website’s dynamic site map. The dynamic site map reflects the repository pool of multimedia learning objects available and the organization and structure of these objects.

**LESSON WIZARD**

The main innovative feature of this website is the *Lesson Wizard*, a dynamic lesson plan template that allows teachers to access the repository pool of multimedia objects as described in the section above. The *Lesson Wizard* was specifically designed and created for facilitating teachers’ creation of a multimedia lesson plan template. Teachers are guided to select the **Area**, **Topic** and **Level** of the lesson and then guided to select the multimedia learning objects for each event of instruction; **Set Induction**, **Delivery**, **Practice**, **Production**, and **Closure** (see Figure 3). The resulting lesson will be generated by the dynamic lesson plan template system (see Figure 4). Upon generation of the lesson based upon the teachers’ selection, teachers are given the option either to
review their multimedia lesson or to download the lesson. If the multimedia learning objects assembled with the help of the Lesson Wizard are not to their satisfaction, teachers can further revise the lesson (see Figure 5) and review it again. Once teachers are satisfied with the multimedia content assembled, they can then proceed to download the entire lesson. This flexibility of choice and generation of a complete lesson of multimedia learning objects is the main innovative feature of the website.

Figure 3: Customizing and assembling the multimedia learning object

Stability of Structure and Downloading Engine
Once the lesson with the multimedia learning objects is generated, it can be downloaded. The downloading engine will automatically zip all PowerPoint, Flash and video objects and download it in html format. Downloading is easy and efficient and can be completed with the click of a button. Once downloaded, the user needs to unzip the folder to obtain the individual multimedia learning objects.

Built-in Search Engine
Another useful feature of this website is the built-in search engine. Teachers can easily browse the repository of multimedia lesson objects from the built-in search engine available on the Teaching Ideas page. The search is conducted based upon keywords (see Figure 6). The search results can then be previewed.
Integrated Registered Users Database System

A database system was developed to handle subscription and registration of users. Administration of users is fully automated. When new users register on the website, an acknowledgement email will be generated automatically for the new users. The managing administrators of the website will decide whether to register the users into the system. When the users are registered into the system, a password will be automatically generated and this information will be emailed directly to the new users. The new users are then encouraged to login to the website and to change their password from the users’ profile page.

User-friendly Navigation

Navigation on this website is developed based on principles of good website design. Navigation is well constructed, easy to use and intuitive. New users are first encouraged to go through the lesson creation procedure systematically. This will allow them to browse and have an overview of the overall content of the website. Once they are familiar with the creation process, users are encouraged to use the express navigation panel (see Figure 7) which shortens the lesson creation procedure to a single panel. The express navigation bar can be accessed on the website.
FUTURE PLANS

We are currently conducting a summative evaluation to gather feedback in order to improve the e-Lesson Generator. In line with the advances in ICT, we hope to expand this idea to include other subject content areas and grade levels (see Figure 8). Another feature that will be given more emphasis in future plans is the enhancement of the interactivity level of the multimedia learning objects. It is hoped that this innovative way of customizing one’s lesson would later be the standard adopted by teachers when integrating ICT into their classrooms. In the Ninth Malaysia Plan, the potential role of ICT in improving teaching quality, learning environments and ultimately student performance especially in rural schools is emphasized. In our opinion, the e-Lesson Generator has the potential to meet this particular need of the nation. Our experience working with the e-Lesson Generator has prompted us to rethink its tremendous potential in the area of e-education databases and services. In addition to the expansion plans to include other subject content areas and grade levels, we look forward to embarking on developing an e-Learning Generator, a full-blown e-educational platform that is capable of handling a series of related educational services that will benefit schools, teachers and administrators. This powerful technology generator has the potential to support services such as the development of e-education administrative database, e-lifelong learning, e-soft skills education and the like; that will positively impact our nation’s future workforce quality.

Figure 8: e-Lesson Generator Common Repository Pool
CONCLUSION

One of our doctoral students has conducted a summative evaluation on the e-LG. She attempted to find out the usability of the e-LG, and the teachers’ opinions about the multimedia learning objects. Preliminary data from her study show that the usability of the e-LG indicated that the information was well-organised and easily accessible. However, the speed of retrieval and consistency of instructional language may need some improvement. Another study conducted on the e-LG which focused on the content found that there were substantial grammatical errors. Feedback from these researches will help us to improve the delivery of the e-Lesson Generator for the use of teachers in Malaysia.

Future plans include the expansion of the website in terms of subject content areas and grade levels. We are positive that other partners will join us in this project. Until then we will keep improving the eLG.

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REFERENCES


