

Terms of Reference (ToR)

Design and Development of “SMART TextBook” for Grade 11 Science Subject

1. Introduction

Educational Publications Department (EPD), having a direct connection with the school community who represents approximately 20% of the total population of the country, accomplishes its service to fulfil the needs of compulsory education which is one of the basic rights of students and to offer them equal opportunities in education. The department performs a unique role in providing students with textbooks and supplying the teacher population the Teacher Instructional Manuals in time. EPD has been given the authority to produce textbooks by the gazette notification of No. 14,753/3 dated 30th September 1966.

Apart from compiling, printing and distributing of school textbooks, EPD is given the authority by the same gazette notification to produce, distribute and sale of teaching aids, audio-visual materials and other equipment. Yet, EPD has not taken sufficient measures to produce teaching-aids, audio-visual materials and other equipment.

One of the best teaching and learning aids available today is **eBooks** which are very popular in most other countries. eBooks have become very effective in the teaching and learning process due to many reasons; eBooks create an engaging learning environment as the learner is able to participate actively in learning via games and interactive exercises. In addition, eBooks promote learner autonomy and teachers could utilize it as a teaching aid. Further, it paves way for self-assessment online, which allows students to identify their progress throughout the learning process.

When considering the above factors, it can be mentioned that producing E books is a timely need to facilitate and improve the educational process.

2. Background

The educational Publications Department has been given the mandate to compile, print and distribute textbooks to school in time. This cycle is activated annually as amendments to the new books and new versions of textbooks are printed to meet the huge demand.

EPD has found, when analyzing the end result; results of G.C.E. (O/L), that very low percentage of students have got though Science subject with ‘A’s and ‘B’s. Moreover, science subject has been identified as one of the most appropriate subjects which can be delivered through the intervention of digital technologies.

EPD has also realized that it can adopt an alternative approaches such as electronic textbooks to increase the knowledge level of the students and add value to the output and to the entire teaching learning process.

With the advent of the Information Communication Technology (ICT), the role of ICT in the field of education has become significant. It is remarkably noticed that the impact of digital

technologies could be used in uplifting the knowledge level of students. The teaching as well as learning methodologies are also undergoing drastic transformation with eLearning which is being defined as the use of processes and technologies to create, distribute, manage and enable learning via an electronic media provides need based information (information when a person needs it), high accessibility (24 × 7).

The EPD of Ministry of Education has launched an accelerated programme to build a comprehensive ICT infrastructure to enable teachers and children to access and use electronic teaching and learning material. The Ministry of Education has already established many computer labs in schools. Therefore it is a timely act to produce eTextBooks as a comprehensive learning material to leverage on the infrastructure that has to be built for the education system.

3. Objectives of the project

This project intends to design and develop comprehensive, interactive and user-friendly eLearning content for Grade 11, Science subject in Sinhala, Tamil and English media.

4. Scope of services, tasks to be carried out

Study and verify the scope to be addressed through the assignment and produce a complete report with the requirement verification (SRS).

Cover 15 chapters associated with grade 11 Science book (Chapter, Sub-chapter, Topics).

Apply adaptive learning techniques with availability of interactive content.

Submission of Flow Charts/ Course Maps etc.

4.1 High-level functional and Non-functional requirements

4.1.1 Functional Requirements

4.1.1.1 Interactive Activities

4.1.1.2 Evaluations (Self-assessment and Progress Management)

4.1.1.3 Highlighting, Bookmarks, Reference points, Interaction, Tracking, Tagging

4.1.1.4 Search Options (Learning Content, Activities, Assessments and Discussions)

4.1.1.5 Animations, Simulations, Images, Video and Audio

4.2 Design an information architecture which will cater to the above mentioned requirements and obtain consent from the review committee

4.2.1 Submission of Story Boards

4.2.2 Produce System Architecture

4.2.3 Submission of Software Design Specific Document

4.2.4 User Interface Standards

4.2.5 Prepare Test Cases and Test scenarios

4.2.6 Non-functional requirements

- 4.2.6.1 Transferability, Scalability, Reusability, Adaptability
- 4.2.6.2 Responsiveness
- 4.2.6.3 Able to perform standalone in digital devices such as tabs, Smart mobile phones, computers etc.
- 4.2.6.4 System Consistency
- 4.2.6.5 Security Audit

4.3 Develop a working prototype which contains main features and functionalities which will be included in the final product

4.4 Conduct continuous consultation with the team or nominated representatives of key stakeholders of “SMART TextBooks” initiative

The system should be a web enabled which the users can access via internet. The product should also be able to be transferrable to a CD/DVD media where it can be played through a standalone computer. The content should be presented interactively. It should contain graphics, animations, videos, annotations and other existing digital learning features. System should have the facility to create profiles, keep track on student performances and measure the progress of the students.

5. Final outputs Reporting Requirements, Time schedule for deliverables

The entire assignment time duration is **4 Months**. Consultant is required to submit the following list of deliverables.

5.1 Deliverables and timeline

No	Deliverables	Duration
1	Acceptance of the followings;	Commencement Date + 2 weeks
	1. Project Management Plan	
	2. Requirement Verification Report	
2	Acceptance of the following;	Commencement Date + 6 weeks
	1. Detailed architecture document for the complete system	
	2. SDS	
3	3. User Interface standard	Commencement Date + 10 weeks
	1. Detailed design	
	2. Test cases and test scenarios	
5	3. Proof of concepts (POC- Functional Prototype)	Commencement Date + 14 weeks
	Deployed and working version	
	Integration of all the modules and deployed (working version)	
6	Acceptance of the following;	Commencement Date + 16 weeks
	Operational Acceptance Testing (OAT) User Acceptance Testing (UAT)	
6	Final version	Commencement Date + 16 weeks

6. Minimum qualification of key staff

Following key staff with appropriate qualification is required to be available for this assignment

Key Professional Staff
Team Leader
Tech Lead(s)
QA Team (With QA Lead)
eLearning Content Development Team (Instructional Designers, Subject Matter Experts, Animators, Content Developers, Graphic Designers)
Software Engineers
eLearning Experts

7. Client Input

- The EPD will provide Grade 11 Science textbooks in all three medium to the selected vendor of the e textbook.
- The vendor has to develop that into an interactive e textbook including images, videos, animations, games, extra activities and there should be a way to evaluate the learner's progress
- The EPD will evaluate each sub-chapter while progressing and requests the vendor to incorporate the comments.
- At the end of each sub-chapter there should be questions to evaluate the learner.
- The final approval to duplicate CD/DVD will be given by the Commissioner General of Educational Publications Department.

8. Review committee and review procedures

All deliverables will be reviewed by the review committee appointed by the EPD