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Project Title	Online Course on Sri Lankan HOME REMEDIES			
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Online Course on Sri Lankan
HOME REMEDIES

A dissertation submitted for the Degree of Master of Information Technology

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University of Colombo School of Computing

2017

UCSC

Declaration

The thesis is my original work and has not been submitted previously for a degree at this or any other university/institute.

To the best of my knowledge it does not contain any material published or written by another person, except as acknowledged in the text.

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This is to certify that this thesis is based on the work of

Mr./~~Ms.~~ T.R Bopitiya.

Under my supervision. The thesis has been prepared according to the format stipulated and is of acceptable standard.

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Signature: Date:

Abstract

The people use lots of medicines for their day today life spending money to buy them. As result, they experience some bad effects of them. But there are better oriental medicines with Home remedies. The problem is that they have lack of knowledge. The people of new generation don't know about herds and oriental medicines. Most of them need to learn about this medical techniques and methodologies due to the lack of learning methods and very old and time wasting methodologies. Therefor the people of new generation leave in contribution rapidly.

Information technology is the main technology in the world. The internet has more power than anything. The eLearning is the most powerful technology for web based learning. Therefore in this project, home remedies have been combined with eLearning technology.

In this project, I have examined the requirement of the community for home remedies. Then I analysed the context, the learner and content of the project. After that the functional and non-functional requirements were identified. Finally the Syllabus and course map were developed. ADDIE model and Merrill's First Principles have been selected as the design principles. Then storyboard have been developed for the course and at last the project was designed by me.

There were lots of tools which were used for development phase. Sinhala language has been used to develop the project. In this course curriculum, there are three main lessons with more sub lessons, particles, tutorials and quizzes. This project area is very wide, because there are lots of herbs and home remedy methods available here. However all the things have been well organized in the curriculum.

After having developed the course that is implemented on Moodle and then it has evaluated. The evaluation was done through questionnaire. According to evaluation, I realized that the system has achieved its objectives and goals correctly.

Acknowledgement

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Finally, I would like to acknowledge with gratitude, the support and love of my family – my parents, wife. They all kept me going, and this project would not have been possible without them.

Table of Contents

List of Figures

List of Tables

List of Abbreviation

ADDIE   Analysis, Design, Development, Implementation, Evaluation.

SWOT   Strengths, Weaknesses, Opportunities, Threats.

UCSC   University of Colombo School of Computing.

1. Introduction

Sri Lanka has its own Indigenous scheme of traditional medicine called as Ayurveda. This system has been practiced island wide for about 3000 years. Ayurveda system is based on a series of prescriptions handed down from generation to generation [1]. In the beginning of traditional medicine scheme there was a simple kind of medicine method called as "home remedies" or "local remedies". It was used as a first aid and this was more powerful than current methods of first aid. Further, these "local remedies" have been used as medicines for most of the illnesses and injuries. However, the knowledge on herbs and "local remedies" does not spread fast enough and as a result there is a tendency of "local remedies" lay waste in Sri Lanka.

For an example, for a cold with a touch of fever, an effective from of treatment is inhalation of the steam released from a pot of boiling coriander and lime leaves. You sit on a low stool with the face and head well covered to ensure that the steam does not escape. Then you start inhaling the steam for a few minutes until you start perspiring. You come out in a bath of sweat, get into bed, and cover yourself and then feeling much better. Soon the temperature goes down. Using warm water for drinking, washing one's face and later on for baths until the cold completely goes away is the accepted treatment.

Home remedies made by herbal medicines. There are number of advantages associated with using herbal medicines as opposed to pharmaceutical products. [2].reduced risk of side effects, most herbal medicines are well tolerated by the patient, than pharmaceutical drugs. Herbs typically have fewer side effects than pharmaceutical products, and may be safer to use over time.

Herbs are effectives with chronic conditions, home remedies and herbal medicines tend to be more effective for long standing health complaints that do not respond well to western medicine. One example is the herbs and alternative remedies used to treat arthritis. Well-known western medicine used to treat arthritis, was recalled due to increased risk of cardiovascular complications. Alternative treatment for arthritis, has few side effects. Such treatments include dietary changes like adding simple herbs, eliminating vegetables from the deleterious families and reducing white sugar consumption.

Widespread and availability are another advantage of lots of herbal medicines and there are lots of home remedy treatments available yet. Herbs are available without a prescription. You can grow some simple herbs, such as "kohomba" and "karapincha", at home. In some remote parts of the word, herbs may be the only treatment available to the majority of people.

But problem is current younger generation who disregards the relationship with elder generation and do not trust about older faith. Because of that the valuable concepts such as home remedies are eliminating from current generation. But if they have knowledge about that, the young parents may not hesitate to try this simple treatment.

Information technology is most popular technology of the world. There is fast development of information technology in past decade. But there is a very small integration between information technology and Ayurveda medicine scheme. That means Ayurveda medicine scheme and its practices have not been supported by the information technology in Sri Lanka. This can be considered as a reason for the gradual decrease in the usage of the local remedies.

1.1 Motivation and Problem

Nowadays, most of people do not know about home remedies. But they have access to the Internet .But Internet is not providing enough materials for home remedies. Also information in these resources have not been either checked or approved by a registered Ayurveda doctor. Therefore people cannot trust the information provided through these resources.

In order to prepare home remedies, people have to use herbs. Herbs can be purchased without prescriptions or can be found from village areas. But people need to have the knowledge to identify the correct herbs. For that people need to have a better knowledge about herbs. But there are lack of resources to learn about herbs.

Moreover, even if people know about herbs but if they do not know how to prepare home remedies and what dosage of herbs should be used then they will not be able to prepare the correct medicine.

On the other hand, home remedies are very valuable for day to day life. Sicknesses are everywhere. Sometimes we need to see a doctor once or twice a week and spend a long time in queues to meet the doctor. If we have the knowledge on home remedies then we will be able to control the illness very well until we meet a doctor. This motivated me to develop a learning resource which will help the learners to improve their knowledge on herbs and develop skill of preparing home remedies.

Internet is a public domain. Everyone can use it and most people are already using it. So it can be used to spread the knowledge about "home remedies".

1.2 Project goals, objectives and scope

Goal, project objectives and scoop have been identified after analysing the context, learner and content of the project. This project is about very valuable and rare topic.so there project goal is wide.

1.2.1 Goal
The present project aims to

Increase the use of herbs for common illnesses.
Disseminate the knowledge about home remedy treatment techniques and value of that medicine schema.
Save and protect Sri Lankan home remedy treatment techniques for future generation.

1.2.2 Project Objectives
The project will help learners to

Improve their knowledge about learning objectives.
Accurate accessibility for the content and fast accessibility for content.
Share experience and knowledge on using home remedies.

1.2.3 Scope

Identify the Learning goals and objectives.

Design learning content Support to identifying herbs by using provided previews.

Design learning content and component.

Develop a better learning environment to learn about herbs & practices properly home remedies.

Develop assessment to evaluate learner's achievements.

Design and develop a collaborative learning environment to share resources and carry on discussions.

1.2.4 Out of scope

The User age limit is more than seventeen and less than sixty five. -Childs don't use medicines and older people have lack of knowledge for use of web base eLearning system.

This project has been done by Sinhala language. Because most of herb names and home remedy creating methods are in Sinhala terms. Therefore this project do not help to foreigners.

1.3 Project outcomes / deliverables

This project will finally deliver a web based course, learning guides and downloadable manuals

During the project following documents will be delivered.

Analysis report.

Design Documents (Course maps and Story boards).

Evaluation reports.

Web base ELearning course.

Student guide.

The proposed online course will -

Provide a better online course to study home remedies.

Provide a fundamental medicine techniques to prevent and control the disease at the beginning without side effects.

Improve the knowledge about herbs.

Improve the knowledge about methodologies for home remedies.

Provide home remedies preparation methods.

Provide methods of applying home remedies.

Provide home remedies storing methods.

Protect our valuable and traditional medicine techniques.

1.4 Time plan

This project stared on 2016 - 04 -01.There were seven major tasks and they were supposed to end on 2016 - 12 -30.

From	To	Task	Q2 May-Jun	Q3 Jul-Aug-Sep	Q4 Oct-Nov-Dec	Q1 Jan-Feb-Mar	Q2 Apr-May-Jun	Q3 Jul-Aug-Sep	Q4 Oct-Nov-Dec	Q1 Jan-Feb-Mar
05/01/16	06/01/16	Gathering Information								
06/02/16	07/02/16	Studying herbs and remedies								
07/02/16	08/01/16	Prepare the course content								
07/02/16	08/01/16	Conduct analysis								
08/02/16	09/02/16	Course design								
09/02/16	10/03/16	create the prototype of the web								
10/03/16	11/03/16	create database of the system & connect database and interface and testing the system								
11/03/16	12/31/16	host and implement the system on server & create the project related documents								

Figure 1.1: Time plan

1.5 Dissertation out ling

This is the complete dissertation about online course on Sri Lankan home remedies. This dissertation has seven chapters, references and appendices.

Introduction	: Chapter one
Background/Literature Review.	: Chapter two
Analysis.	: Chapter three
Design.	: Chapter four
Developing and Implementation.	: Chapter five
Evaluation and Testing.	: Chapter six
Conclusion and Future works.	: Chapter seven

2. Background /Literature Review

This is the second chapter of the dissertation. This will discuss about the project background and literature review of the system.

2.1. Literature Review

Herbal medicine is use of plants for medicinal purposes, and the study of such use. Plants have been the basis for medical treatments through much of human history, and such traditional medicine is still widely practiced today. Modern medicine recognizes Herbal medicine as a form of alternative medicine, as the practice of Herbal medicine is not strictly based on evidence gathered using the scientific method. [3].

The richness of natural herbs and condiments as home remedies have, for centuries, been the source of time-honoured beliefs concerning their benefits to health and nutrition and as a cure for a multitude of ailments. Therefore, home remedies have remained preferred alternatives to treating colds, coughs, fever, diarrhea, burns and more serious conditions. The ability of these natural ingredients to purify the body and strengthen and energies the affected area of the body is undeniable.

Unwanted side effects can be caused by all kinds of medicines, including prescription and over-the-counter medicines, complementary medicines including herbal preparations, vitamins, and some products dispensed by practitioners of complementary medicine [4].

Natural home remedies have numerous benefits. Lots of natural remedies are cheap, clean and easy to find. Large pharmaceutical companies manufacture expensive medicines because these medicines are processed, marketed and advertised as commercial commodities. Moreover, natural home remedies may cost you nothing. Natural home remedies are also clean. They are raw materials that you can use for cooking. A natural remedy is easy to find. Natural home remedies usually need fruits, vegetables, spices and herbs to be made. You can easily find the right one for all types of minor illnesses. In the past, people were growing plants in their backyard and it was very likely that they also had medicinal plants. Nowadays, the majority of people live in an urban area, but it is easy to acquire medicinal plants in the local supermarket. Visit the supermarket and look for garlic, ginger, honey, lemon and other fruits and vegetables that have medicinal benefits. Natural home remedies are better than over the medicines and syrups. A natural remedy is fresh and unspoiled. A natural remedy does not have all those strong components that over the western drugs have. Natural home remedies are also more effective and they can treat various illnesses. [5]

Sri Lanka has tradition of home remedies. Home remedies have come down the ages, passing from one generation to the next.AS a result of the immigration of various nations from other countries, Sri Lankan society mixed with own culture with them.so our traditional medicine techniques also mixed with the other medicine cultures. [6]

Modern Sri Lankans depends on two main medicine techniques called as western and Ayurveda. But there is own traditional medicine method passing from one generation to the next called as "Sinhala Beheth".it is very power full but there is on any formal guide line for that. Because it was destruction and dispossession form other nation's attacks.

Sri Lankan's like their own medicine very much. But they do not have trusted way to get this medicine. Other thing they do not have methodical path to learn this medicine method. If

anyone has knowledge about that, he or she don't like to teach that for others. Because it is valuable and they think it belongings only own ancestry and there is no authority others.so according to end of the ancestry, lots of valuable medicine techniques were destroyed.

Now a days there are lots of medicines and treatments. But always it is not success full. According to experience of older generation, our traditional treatments like home remedies had successful solutions for diseases. As examples of Rheumatoid Arthritis, Paralysis likewise. Even with the new technology the modern medicine techniques do not have successful solutions yet. So modern medicine have lots of abs side effects and it is high cost. Under this situation people more like to that type of medicine than modern medicine.[7]

Sri Lankan's have better growth of information technology literacy. Already the younger generation has good information technology literacy. There are lot of smart phones, laptops even among the school students. Other thing lots of people in younger generation, they know about worth of the nature and they love to nature. That's why they are interesting about the home remedies. Because home remedies are depending on the nature. So lots of people in Sri Lankan society, they want to know about the home remedies but they don't have enough resources for learn about this.

2.1.1. How to affect more medicine to human body.

Drugs are chemicals. Different drugs, because of their chemical structures, can affect the body in different ways. In fact, some drugs can even change a person's body and brain in ways that last long after the person has stopped taking drugs, maybe even permanently [8]

Depending on the drug, it can enter the human body in a number of ways, including injection, inhalation, and ingestion. The method of how it enters the body impacts on how the drug affects the person. For example: injection takes the drug directly into the blood stream, providing more immediate effects; while ingestion requires the drug to pass through the digestive system, delaying the effects. The impact of drug abuse and dependence can be far reaching, affecting almost every organ in the human body. [9]

2.1.2. E learning systems on medicine

The application of Information and Communication Technology (ICT) in E-Learning environment has brought dramatic changes in higher education. In this context Internet meets the growing demand for advanced study material and associated resources. [10] Any educational institution with some financial dealings is the matter of concern. But in the era of globalization, Students from different countries and communities may appear for the same degree or diploma as distance & geographic location is not a problem at all. So E-Learning is constructed in a variety of contexts, such as distance learning, online learning, and networked learning and learning to promote educational interactions between students, lecturers and learning communities [11].

eLearning technologies are a perfect fit for many aspects of continuing medical education, as they have lower costs, higher flexibility regarding time, require few resources and personnel to deploy, and can be easily updated as material changes. For develop the better online course, first of all we need to develop a course plan. Then aim for less content overall, with a variety of methods to deliver course content and an emphasis on experiential learning

and forms of engaging assignments.by using activates such as discussions and teamwork we can improve the connection of leaners. Instructions have to be written in great detail and simple language [12].

So there are lots of opportunities for develop to online courses by using content management systems. We can use Moodle open source learning platform for course development.

2.1.3. Instructional system design models

To design the system, there are lots of models such as Dick and Carey, Gerlach-Ely Model, Hannafin-Peck Model, ADDIE, Elaboration Theory. ADDIE model is selected as Instructional system design models (Figure 2.1: ADDIE Model). Because ADDIE model has simple, fast and effective way to Instructional system design [13].
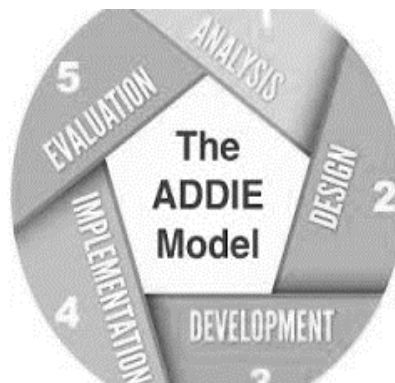

Figure 2.1: ADDIE Model

Because ADDIE model provides opportunities for re-evaluate learning goals and outcomes.it ensure the design and development of training materials. Not only that it provides a step by step process to aid in planning and creating programs.so lots of designers are using this model for design task.

In this design process there are five distinct parts as Analysis, Design, Development, Implementation and Evaluation.

Analysis -Instructional designer will need to analyze all the factors needed to develop a timely relatable course and need to identify about goals, skills and barriers also.

Design – In this phase, need to plan how to achieve that identified goal, specify the course objectives and what media and resources will be used to support the eLearning effort.

Development –The actual development of what was planned in design phase.

Implementation- In this phase course is launched and made available to the students. This can involve an online component being activated for chatting and questions with the instructor and group sharing activates.

Evaluation –assessment of e-learning model has met the needs of students, instructors and has been presented as effectively and with all the necessary tools.

So ADDIE is useful model for design instructional design.it provides a relatively simple process that the author can follow but ensures an impotent element is not forgotten.

2.1.4. Instructional design models

To design course content there are lots of design models such as Gagne's nine events of instruction, Merrill's First Principles of Instructions design. Among them Merrill's First Principles has been selected to design the Instructions.

This is a problem centered learning model. This model can be used for solve the real world problems.in this principle provide the task clearly.so learner will be able to solve problem as a result of completing a course or module (Figure 2.3: Merrill's First Principles).
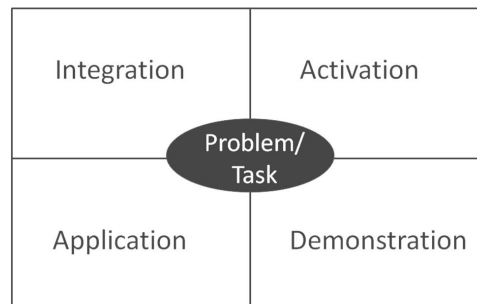
Figure 2.3: Merrill's First Principles

Problem – start with simple problems and works through a progression of increasingly complex problems.

Activation – relevant past experience is used as a foundation for the new skills and knowledge.

Demonstration – learners are shown rather than just being told.

Application – learners are required to use their new knowledge or skill to solve problems.

Integration – learners are able to demonstrate improvement in their newly acquired skills and to modify it for use in their daily work.

ADDIE focuses more on the business process and its training requirements while Merrill's approach is applicable to any learning practice. Therefore both of these models compatible for development of better eLearning course.

3. Analysis

This is the third chapter of the dissertation. This will discuss about the need assessment, Context analysis, Learner analysis, Functional requirements and Non Functional requirements.

3.1. Need assessment

By using need assessment, properties, course improvements and resource allocation will be identified. Need assessment provide the gap between current situation and desired conditions.

A need can be defined as a performance gap separating what people know, do, or feel from what they should know, do, or feel to perform competently. This is small differences in what should be happening by identifying gaps in result, organize the results in priority order.

Needs assessment planning is the process of developing a blueprint for collecting needs assessment information. There are two type of need assessments as

    Comprehensive needs assessment planning
    Situation-specific needs assessment planning

Situation-specific needs assessment planning method is compatible with this eLearning course.

3.1.1. Target group.

The course has been design for adults. The age limit is more than seventeen years old. Because they have some basic idea and experience about subject. If they have knowledge about home remedies, they can share the knowledge with others.

3.1.2. Sampling

Sampling methods will be used to select a representative group of people from the target audience for participation in the needs assessment. Other words Sampling is the process of identifying smaller groups for examination.

Sample is a small, representative group drawn from a larger group called a population. If the sample, variation from the "true" nature of the population from which it is drawn called as sampling error. In this project samples is the people in above seventeen years old. There are two type of sample selecting methods

    Convenience or judgmental sampling

A type of non-probability sampling in that the subjects for review are chosen for convenience or accessibility rather than representativeness. This project has wide area.so convenience or accessibility samples is not enough for need analysis.

    Simple random sampling

A type of probability sampling in which each subject in the population has an equal chance of being elected for study. Sample random selection method compatible with this eLearning project.

3.1.3. Data collecting methods.

There are many data collecting methods in need analysis. Such as Interviews, direct observation of work, indirect examination of performance or productivity measures, questionnaires and task analysis. There was a questionnaire. It has been done for learner analysis.

3.2. Framework of student support services

This eLearning course has very simple and interactive interface design. Interfaces are clearly ordered according to learning steps.so students can identify the directions for lessons, tutorials, practicals and quizzes.

Students can make profile early. Administrator can enroll them to system also easy. Because Moodle provide comfortable options for that purpose .if there is a problem student's can contact to system administrator and system administrator they will response immediately to them. Students can contact administrator by using email facility.

3.3. Context analysis

This is the analysis about the internal ecosystem of the course the purpose of this analysis is to ensure a project is informed by all of the contextual factors that might affect its implementation and sustainability.

The context analysis is the first step of the planning process. This will help to ensure that the project adapts to changes as need.

So this is project for public domain. For analyze the context of the course there are three areas have to consider. Those are the SWOT analysis, public awareness, and similar courses.

3.3.1. SWOT Analysis

SWOT Analysis is a useful technique for understanding your Strengths and Weaknesses, and for identifying both the Opportunities open to you and the Threats of the eLearning course.By using SWOT analysis, organization/institute health will be discovered.it aids the decision making process. But it does not provide solutions to problems. Strengths and Weaknesses discover internal environment of the organization/institute and Opportunities and Threats discover the external environment.

In the SWOT analysis, categorize the points as below

> Must be addressed immediately
> Can be handled now
> Should be reached further
> Should be planned for the future

Then need to prioritize the points and prepare the action plan. After that Review the results in every few months.

<u>Strengths</u>

Availability of the knowledge about home remedies

Availability of resources (Books, herbs).

Availability of training facilities for home remedies.

Availability of technological infrastructure for hosting an eLearning program.

Low cost.

<u>Weaknesses</u>

Lack of motivation about home remedy treatments.

Lack of online learning resources for home remedy treatments.

Lack of experience about online course activates.

Sometimes the herbs are very rare.

Home remedies are Time consuming.

Lack of information technology literacy.

Home remedy treatments and herbs cannot explain in English.

<u>Opportunities</u>

Increasing knowledge about home remedy treatments.

Easily share the knowledge among students.

Save the historical and valuable knowledge for future generation.

No bad side effects.

High development of information technology literacy.

<u>Threats</u>

Lack of cooperation of students.

Misuse of available resources.

Poor maintenance of available resources.

3.4. Public awareness

Last decade there was a high improvement of information in Sri Lanka. Usage of the computer and internet also very high. With this technological involvement there is good environment for eLearning.

Sri Lanka has great home remedies treatment methods and there are lots of relevant and rare herbs also. Other hand Sri Lanka has rich history. Therefore there is lots of historical book about home remedies. Not only that there are lots of modern written resources about home remedies [12].

The herbs and oriental medicine is more effective no side effects as well. Even that have been proved by scientific experiments.so increases the demand about the herbs and oriental medicine whole over the word. Even foreigners like this kind of treatments more. Then they are coming to Sir Lanka for get this treatements.so there is good financial value for this field [13].

Therefore Sri Lankans need to protect and develop this medicine method. They always contribute to this purpose.

3.4.1. Identifying what need are not being address.

Sometimes elder generation is not engage with information technology. They think information technology is not necessary to their daily works.so they are avoiding the new technology. But they know about home remedies very well. Sometimes elder has very valuable home remedy methods. But they do not open to others. They keep it as secrets.at the end of the generation that secret home remedies have been destroying. Some herbs in home remedies are very rare or cannot identify. When that time home remedies cannot made.

3.4.2. Language awareness

Lots of herbs are included to the home remedies. In this course, there are herbs with different types of names such as scientific name and local names. Local name is very familiar to citizens. But it is in Sinhala. Further home remedy treatments cannot explain without Sinhala. Because home remedies are combine with our tradition. Therefore Sinhala language is selected to this eLearning course.

3.5.Similar courses

Learning with computer instead of teacher we can called as eLearning technology. This project also depending on that technology. There are lots of eLearning courses but very rare under the same topic.

There is eLearning course called as "Medicinal Herbs".it is providing by "ACS Distance Education Australia - World Leaders in Distance Education" (Figure 3.1: Distance Education). This is a payable eLearning course. This course giving knowledge more than hundred different herbs, how to identify herbs, herbal preparations and herbal cultivation [14].
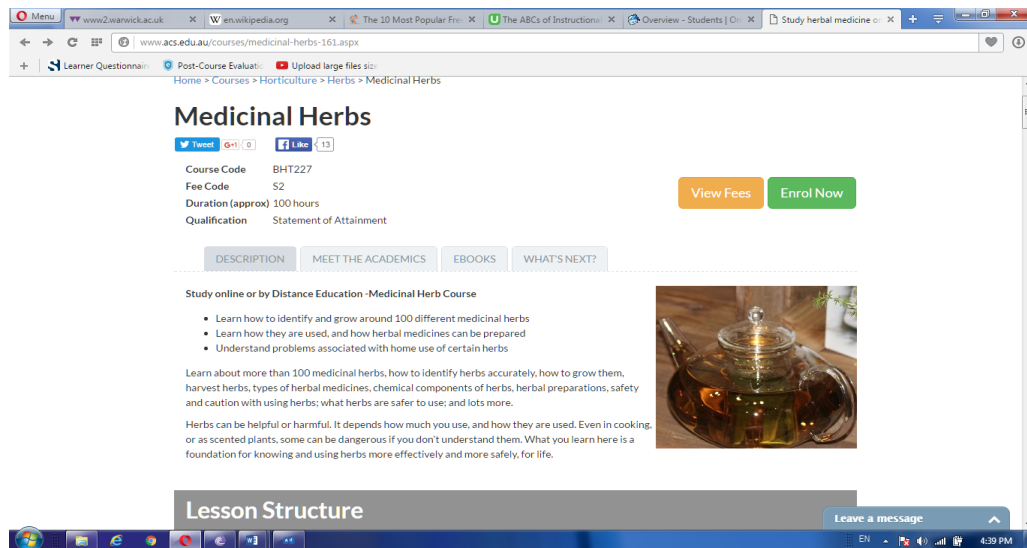
Figure 3.1: Distance Education

That course provide the knowledge about

> Different types of medicinal herbs Cultivation.
> Discuss the history of medicinal herb usage.
> Compare the chemical components medicinal herbs.
> Preparation of home remedies.
> Explain the potential dangers involved in dealing with plants.
> Prepare a schedule of cultural practices.
> Develop a production plan.

There is another eLearning course provider as "Alison". Alison has built a reputation around the world for providing high-quality learning services. Courses are doing in compatibility with best practices worldwide. Alison combine with Microsoft Corporation (IT Literacy), the Health and Safety Authority (Health & Safety) and the Australian High School standards (our school curriculum courses).Alison following and developing highest standards of courseware pedagogy and relevance.

 Alison is not a traditional course provider. They Test feature enables the testing of the knowledge level of ALISON (Figure 3.2: Alison) graduates online, anywhere, at any time. The facilities are used by employers, organisations and institutions around the world [15].
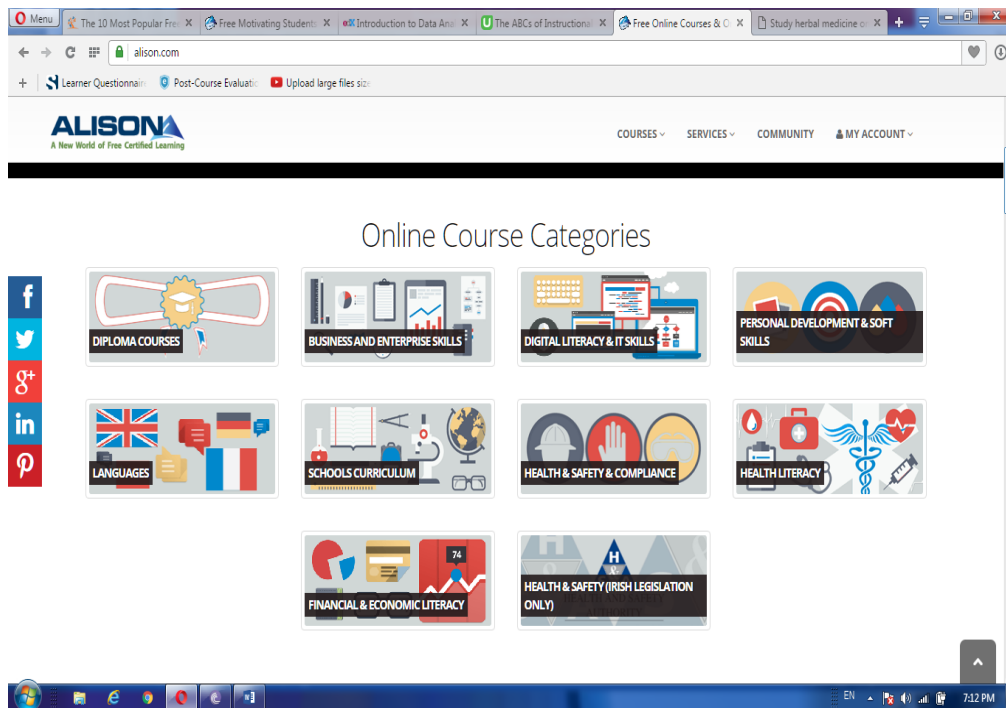
Figure 3.2: Alison

3.6. Learner analysis

We have learned that instruction should not be created without any consideration being given to who the learners are on the receiving end. There are several methods to analysis to learner such as,

surveys,
observations,
interviews,
existing reports,
questionnaire,
Test scores and so on.

This course for public domain.so there are lot of user with deferent requirements. Requirements of the users were have been identified by questionnaire. Home remedies are very valuable and special field. But this is not related children's. This course relevant to the teenagers and above.

This questionnaire publish on internet. Social media such as Facebook, Google+ have been used for that purpose.as result of the answer the lots of users like to home remedies and they expect this kind of eLearning course for learn about the home remedies.

Learner Requirement Analysis Form (If your age more than 17, please complete the form

by answering the following questions.)

Question	Answer
1. First and Last Name (Option):	
2. Date of birth (Optional):	
3. Age (compulsory) :	
4. Designation:	
5. Do you know about home remedies? (Please put a tick in front of the correct option)	Yes , very well Yes, but a little No
6. Have you used HR?	Yes No
6.1 If yes, then what type/s of a/ disease/s it/they was/were?	Infection diseases/ non-communicable diseases / injuries
7. Do you know about herbs?	Yes / a little / No
8. Do you like to learn about home remedies?	Yes / No
9. Do you know about any resources to be used for learning **home remedies**?	Yes / No
10. If yes, then from where did you find those resources? (Select all applicable options)	Community / from elders / electronic media /printed media / on-line media

Table 3.1: Analysis Form

RESULTS OF QUESTIONNER

According to results of this evaluation, there are lots of people need to learn about home remedies. This online course will complete the requirement of people.

3.7.Content Analysis

According to results of the context analysis, content will be created. Content analysis is a term sometimes used to describe both quantitative and qualitative approaches to analyzing content. In the context of this resource, it has been used to describe a quantitative approach.

Content analysis allows to recover and examine the changes of the organizational behaviors, stockholder knowledge and social trends.it is the bridge between quantitative and qualitative methods [16]. This will describe the characteristics of the context environment.

3.7.1. Syllabus

In this eLearning course, there are three main lessons. Lesson one is introduction and it belongs six sub topics. Lesson two is very wide.it is describing about materials for home remedies. Mainly it is describing about the herbs. There are lots of herbs for home remedies.

In this lesson learners are achieving the knowledge about identification of herbs, useful parts of herbs for home remedies, the distribution and storing methods of herbs and what are the home remedies from herbs. Sometimes there are lots of home remedies can be made by using one herb. Sometimes there are two or more. According to that lesson content also large.

 The third lesson there are four sublesson.in this part, learner will be achieve the home remedies for various types of diseases such as communicable diseases, common injuries and

non-communicable diseases as well as preparation of home remedies, diseases and injuries not enough with home remedies and conditions and best storage of home remedies. This lesson area also wide. Because there are lots of home remedies for one disease and there are more diseases in the world.

This eLearning course has lots of tutorials, practical and quizzes.in the course map there are two main tutorials points, five practical points and three quiz points. This is a framework for lesson content and each and every unit has to fallow that. As example if we have sub lessons about hundreds of herbs in this eLearning course, learner has to go through that tutorials points, practical points and quiz points separately.

Topic	Hours
Introduction to home remedies	05
Materials of home remedies.	15
Diseases Vs home remedies.	20
Lectures	40
Practical and Tutorials	20
Quiz	12
Total Hours	**67**

Table 3.2: syllabus

Section 1: Introduction of home remedies (3hrs)

Learning Objectives

After following this lesson the students will be able to:

Define about the home remedies

Recognize the Judgement of arise of home remedies

Define the advantages and disadvantages of home remedies

Recognize the effects of herbs for human behavior

Recognize establishment through the generations of home remedies

Recognize learning barriers about home remedies

Section 2: Materials of home remedies (5hrs)

Instructional Objectives

After following this lesson the students will be able to:

Identifying about herbs

Identifying the parts of herbs for home remedies

Analyze the distribution and storing methods of herbs

Identifying the Home remedies for herbs

Section 3: Explain diseases Vs home remedies (8hrs)

After following this lesson the students will be able to:

Instructional Objectives

Recall how to prepare home remedies for diseases

Formulate how to use of home remedy for each diseases

Categorize the home remedy methods for communicable diseases

Categorize the home remedy methods for common injuries

Categorize the home remedy methods for non-communicable diseases

Verify diseases and injuries not enough with home remedies

Discover the conditions and best storage environment for home remedies

3.7.2. Course map

Course maps are useful tool for keeping on track as develop materials. Well breaks a course into distinct units of finished training with introductions, practical and quizzes by using course maps. There are two levels of course maps.

3.7.2.1. Level 1 Course map

According to level one course map there are three main lessons and three lesson quizzes and final test in the course. After complete the lesson, the learner can go to next lesson. Finally learner has to pass final test.

Figure 3.4: Level 1 Course map

3.7.2.2. Level 02 course map
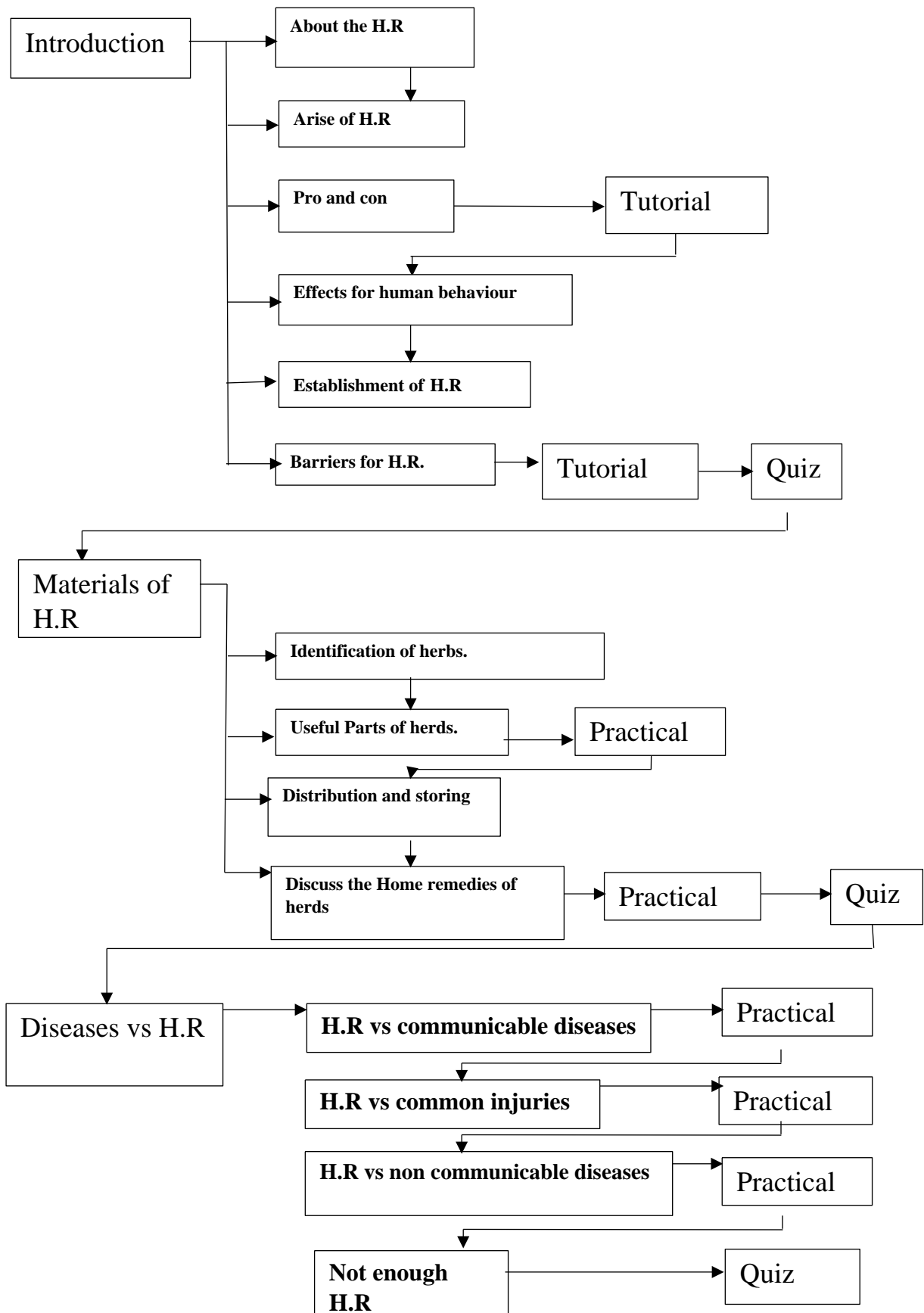
Figure 3.5: Level 2 Course map

2.

In level two course map, there are fourteen sub lessons. There are two Tutorials, five practical sessions and three quizzes in each and every lesson. If they have knowledge about some lesson, they can avoid the lesson content and then they can get quizzes or practical directly.

3.8.Functional requirements

Functional requirement define the function of the system or component of the system such as system inputs, the system behavior and system outputs. This are the main functional requirements of this eLearning course.

Learners:
Self-Registration for training – Students can request or register for training.so students can have separate profiles with logins.

Recall the lessons – if any student not enough with the lesson, he or she has to privilege to engage with lesson again.

Redo the tutorials - if any student not enough with the tutorial, he or she has to privilege to engage with tutorial again.

Redo the practical - if any student not enough with the lesson practical, he or she has to privilege to engage with practical again.

Collaboration with other learners – Tools that enable users to collaborate with each other during the learning process.

Administrator and subject matter expert:

Standardized Skills Assessment – A common skills assessment capability by quizzes. Quizzes need to provide results and correct answers for wrong answers also.

Correct navigation functions within interfaces – learners have to clear and correct guidance about the directions.

Administrate the messages, announcement for the learners – control the important messages and announcements for the learners. As example announcement about the lesson updates or learner profile updates.

3.9. Nonfunctional requirements

The non-functional requirement elaborates a performance characteristic of the system. That can be used to judge the operations of the system.in other word, non-functional requirements define how a system is supposed to be.

Easy and quickly logging to the system

By providing the instructions, make easy and quick environment for learner registration with the system.

Interfaces are clear and interactive

Make interfaces under user friendly concept. Then learners can easily understand about the system and it's improve the learner engagement with the system.

Quick messages, announcement for the learners

Messages, announcement are always up to date. If the messages were old or misplace learner will confuse.

Easily go through the system modals

Interfaces have to design in correct sequence. Then learners can understand the flow to the course easily.

Clear lesson materials

Lesson materials are the videos, audios and text documents. That materials should be clear. Otherwise the learner will discourage.

4. Design

This chapter explain about design part of the project. According to that this will provide rough and detailed storyboards. Then explain the system design step by step clearly.

4.1. System content presentation

In this chapter main thinking about learner. Because this is constructive process. So students must do the learning themselves. The communication process also very important. Because education is communication [17] and it enables the creation and combination of knowledge.

Course web page design methods also very important. When the present of instructional media on a course web page, it should be organize the information clearly [18] and in a logical flow.it need to provide the adequate amount of information on screen. Place the important information on the top of the page and that information should be shorter lines of text. Enough screen size also very important fact to course pages.

This eLearning course use a simple and linear structure for novice web users.at the end of the course it will be complex and nonlinear but when that time user has experience from the beginning of the course.

Graphic and Media Elements

There are lots of Graphic and Media Elements in this course and they have been playing important role in presentation [19]. Those are meaningful and file size and load time is also formal. Colour combination of the web site also compatible.so it will enhance the usability of the system.

The videos are highly relevant with the course content and it is assisting to learning and teaching. Learners are expecting the clarity, order and accuracy learning environment from this course.

This eLearning course related with ADDIE and Merrill's first principle models. According to ADDIE model there are five phases as Analysis, Design, Development, Implementation and Evaluation. The design phase deals with learning objectives, assessments, and contents.so in the design phase, designers have to provide descriptions about the storyboard and visual designs.

4.2. Storyboards

There are rough and detail storyboards for this eLearning course. This is Important in rapid prototyping. This provide a combination of text and graphics that convey all the necessary information.

4.2.1. Rough storyboard

23

Visual	Explanation
Title Image Title with the image	This page is about the title page of the course. There are a lesson title and image related to lesson.
Lesson Objectives Content (with links to jump)	This page describes the lesson objectives and the list of contents. The users can navigate the content through the links available on this page.
Introduction	This page contains a small introduction to the lesson. Various names for herbs such as scientific / Sinhala other names /Tamil name / family.
Identification of parts of herbs Images Image collection of Various Parts of herb.	This page explains the basic parts of herb for need to home remedy. Explanation is mainly done with graphics, voice and simple text
Piratical 1 Images Images	This is the drag and drop activity for learners. Need to drag and drop the herb name for correct image.
Effect of plant Video	This video describes the effectiveness of

Video explanation about herb ← →	herb.
Distribution of plant Images ← →	This part describes the distribution of herb.
Home remedies Images Explain about home remedy Preparation. ← →	Explain about home remedy preparation for each disease by using images /audio instructions and text.
Practical 2 Text question and correct answers ← →	This is another the drag and drop activity for learners. Need to drag and drop the correct answer for correct question.
Quiz multiple choice questions and questions need one word answer ← →	Checks whether the trainees have acquired the basic skills.
Quiz results Review of the quiz ← →	Review of the quiz. User can see the own capabilities about lesson.

There is the detail storyboard of the course in next page.it is about the main content of the course.it is describing about the characteristic of herb called "Kohomba" tree and it is a video content. Other storyboards are attach in **appendix A**.

4.2.2. Detailed Storyboards

Course Name: Online Course on Sri Lankan home remedies	Storyboard File no. 02
Lesson Name: Kohomba	ID's name:
SME's name: Dr.E.M Edirisingha.	
Page Title: lesson content page	
Date Designed:	Date verified:
Design	
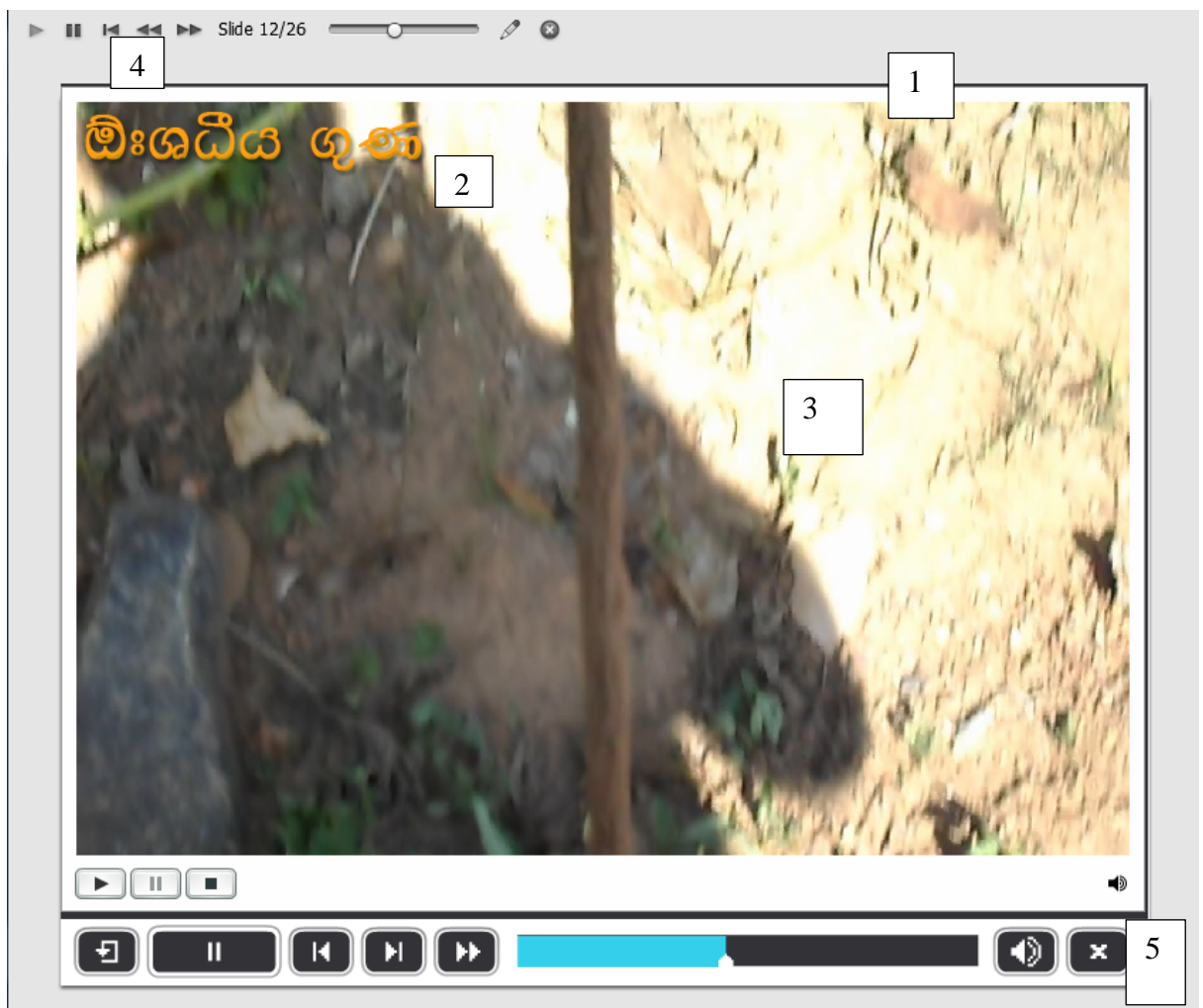
1. This is the page back ground, page size is 767 * 590 PX. Background color is **#C8F0D7**.
2. Title of the module and size is 767*90 px, back ground color is **#A3F1A5,** font **FM Abaya, font** size 24px and font color **#D66D51**.
3. Main lesson content area (text/Images/video clips) back ground color is **#36DC2E.** Size is 767 * 500 PX, Border color **#070807,** border size 3px.
4. When the video clip start, this menu will appear. This will control the video clip
5. This is the main navigator bar of the lesson. This will control the rewind, play, pause, back, forward, fast, forward speed, volume and close of the lesson.

Announcer:

Slide 12):

Announcer: ,

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Table 4.2: Detailed Storyboards

According to this storyboard, it will provide the complete video clip about "Kohomba" plant. This video explain about identification, distribution and home remedies from "Kohomba". This storyboard has been develop with clear navigations.so learners can navigate video as replay, pause, back and next easily.

5. Development & Implementation

Alter the design phase, Development has been started. Design phase is the frame work of the course and it will be enhanced by course materials. Then implementation well be done. If there was not good design, the development also unsuccessful. Lots of tools and materials were used for development of the course.

According to course map and story board, the content development has been done. There are three main modules. But there are lots of lessons. Therefore, this project development has wide area. The lessons are mainly covered by video clips and text instructions.so it will helped to learner for get correct idea about the lesson. There are more activates such as video lesions, text articles, and mages discussions in this course. Therefore more tools and technique have been used.

Initially images and information's were collected. Then those materials provided to subject matter expertise for get the confirmation for materials were correct or not. With the approval from matter expertise, scripts have been developed. According to that audio clips were developed. For audio editing and recording, "Audacity" has been used (Figure 5.1:Audacity)
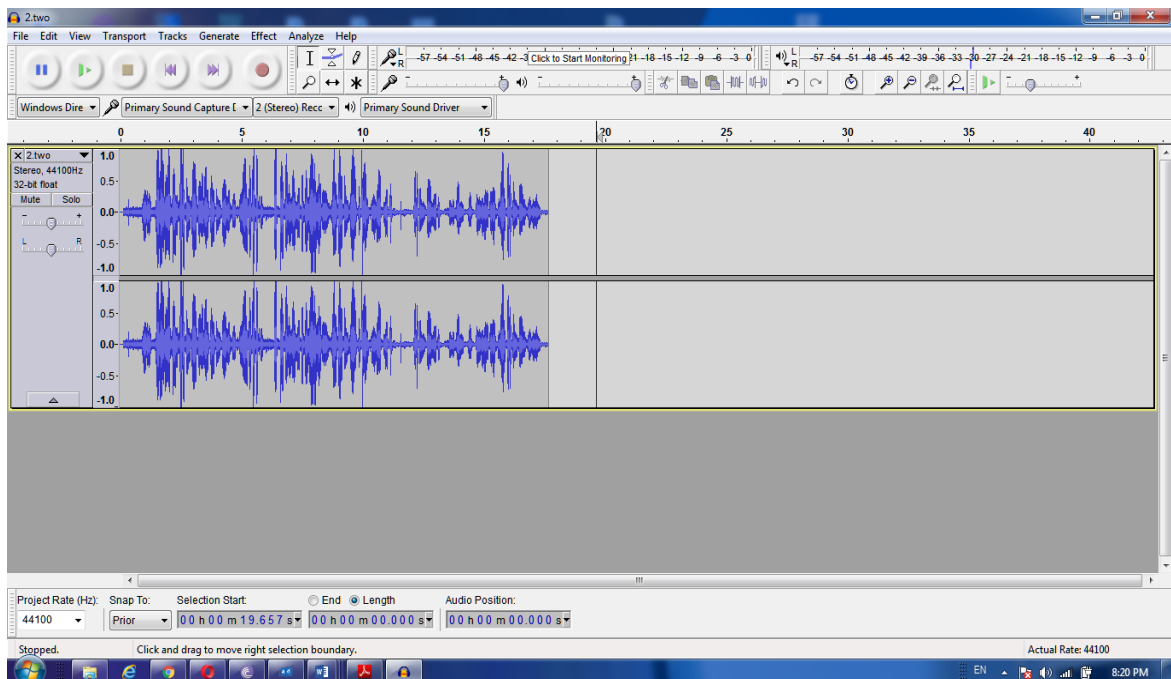

Figure 5.1: Audacity

There are lots of images for lesson materials. But we cannot use it directly. First we have to edit it. CorelDraw has been used for image editing. Then audio clips were combined with the images.it means video clips were developed. For that Filmora has been used (Figure 5.2: Filmora.).Sometimes video and audio converter has been used for covert the audio and video formats.
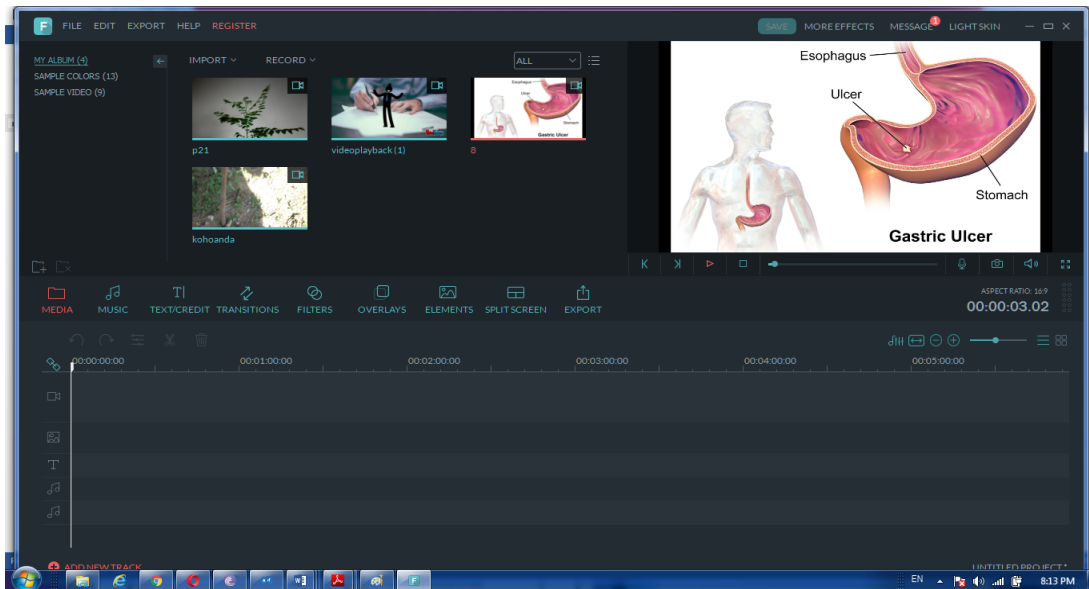
Figure 5.2: Filmora

There were enough course materials such as videos and images. Then we need to develop the lesson content. Adobe Captivate has been use for that (Figure5.3:Captivate).Adobe Captivate provides better options for learning management system.
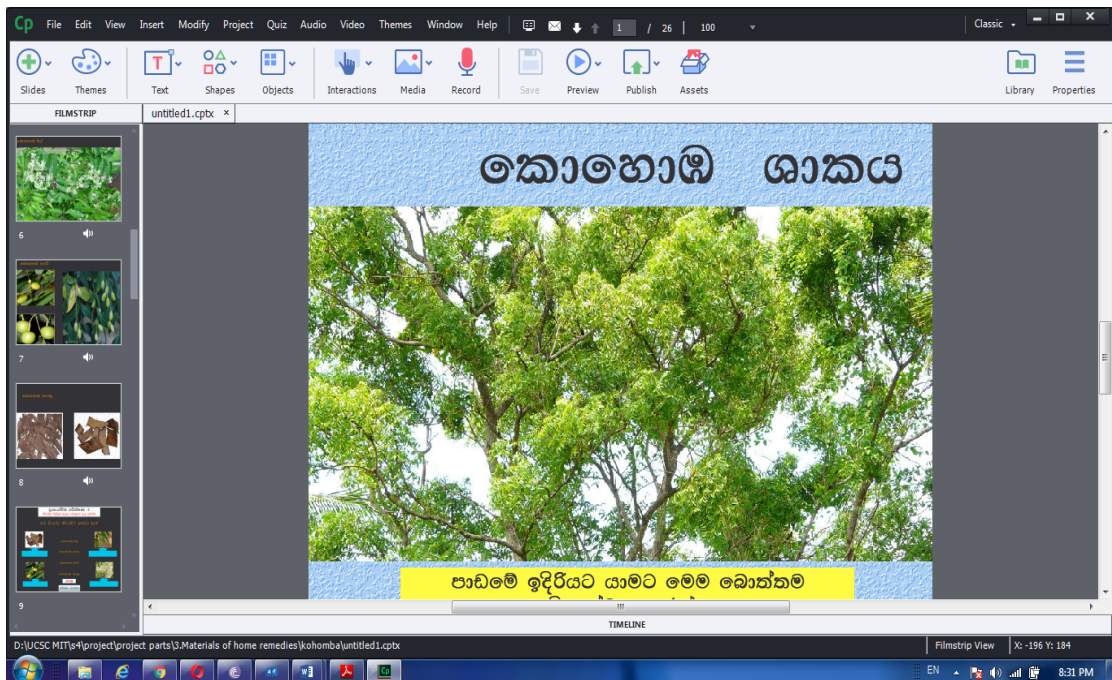
Figure 5.3: Captivate

After making the lessons, development phase has been started. The Moodle learning management system (LMS) is providing free better eLearning environment for developers. Therefore Moodle is selected to implement this course (Figure 5.4:Moodle/ Figure 5.5:Moodle). Moodle cannot work alone. That needs web development environment called as Wamp server. Wamp server version 2 has been used for this project. (Figure 5.6 :Wamp server).it is supporting to implement the data base of the system.(Figure 5.7 :Wamp server).

Figure 5.4: Moodle

Figure 5.5: Moodle

31

Figure 5.6: Wamp server

Figure 5.7: Wamp server
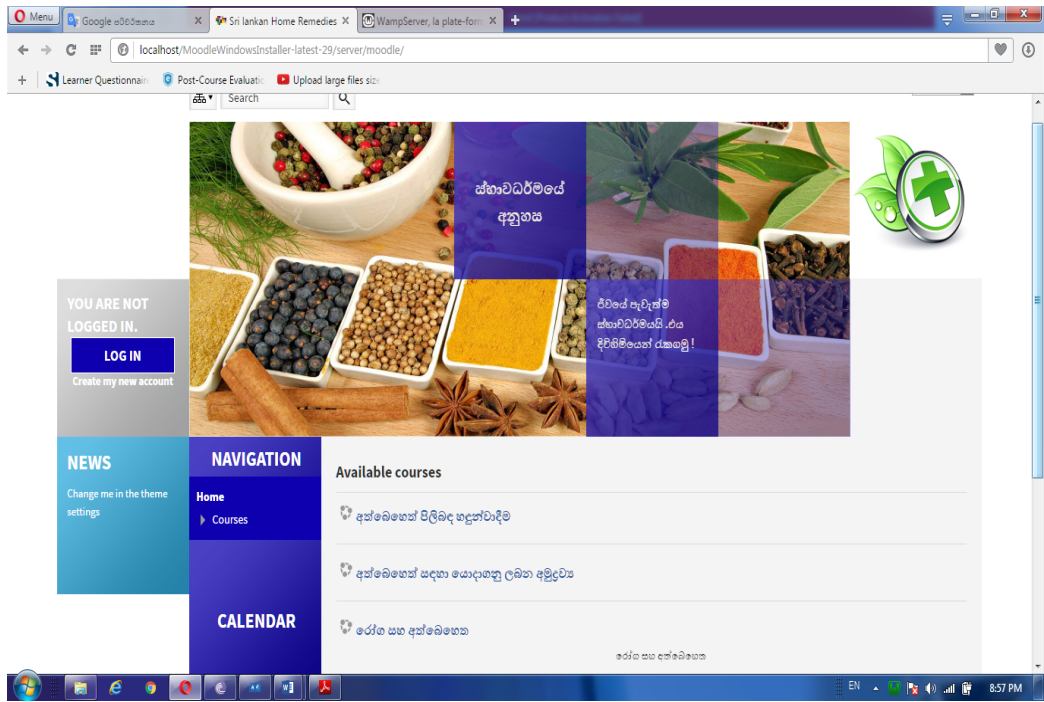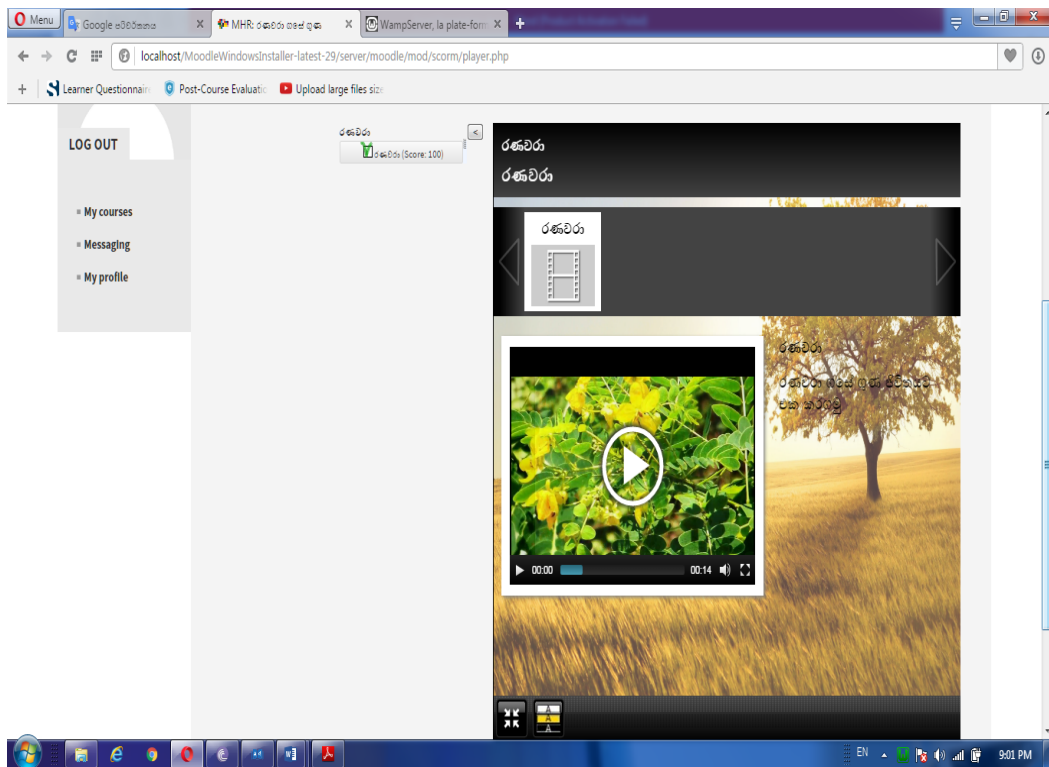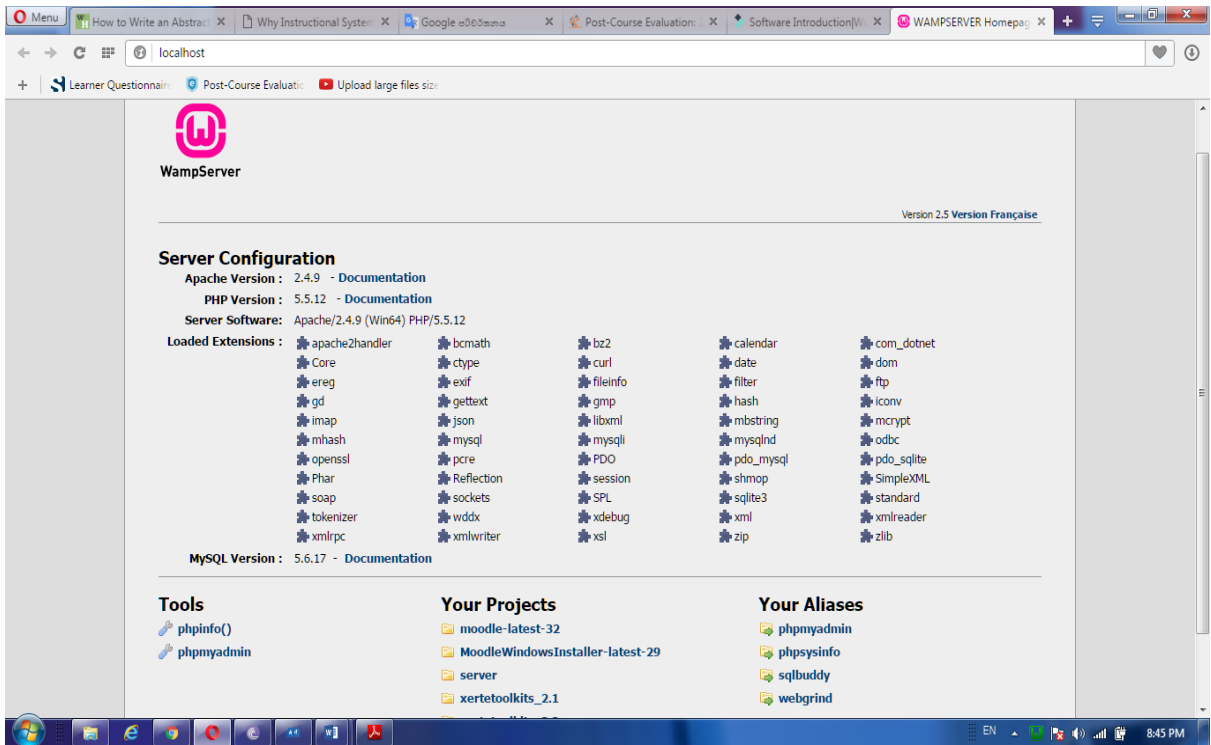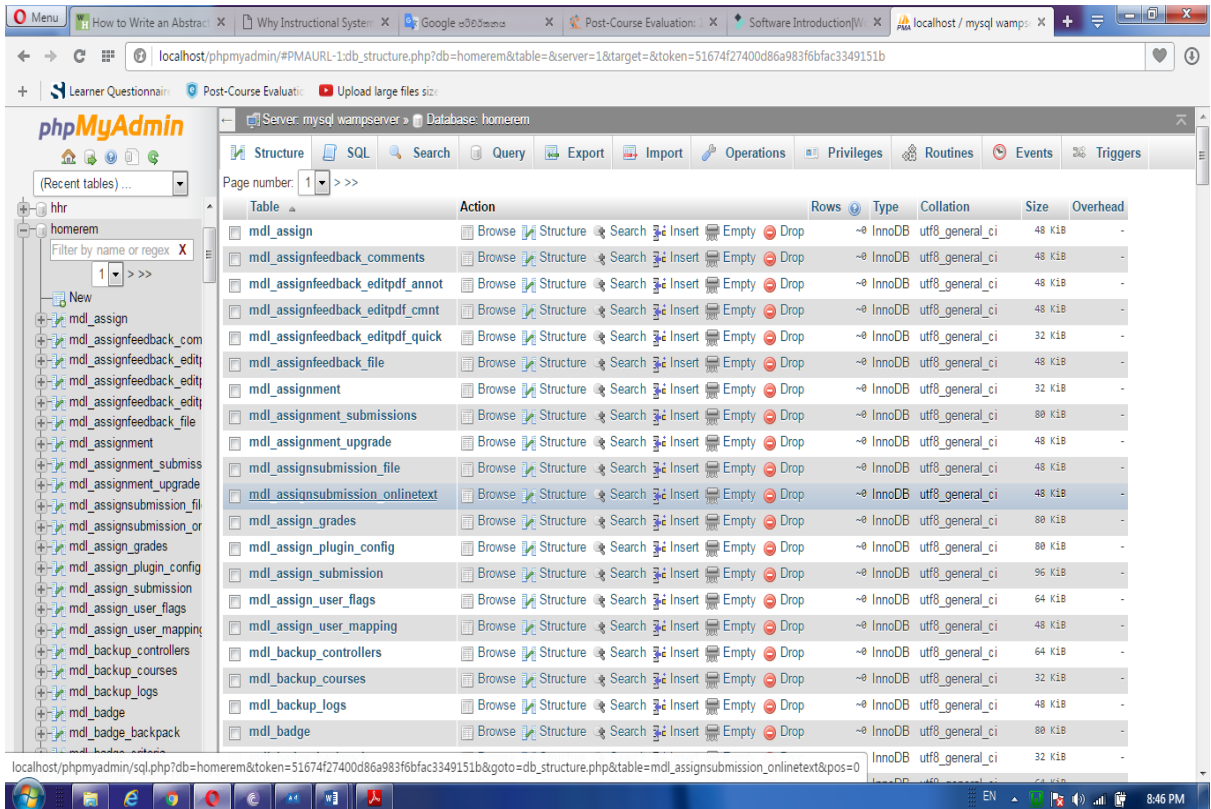
5.1. Tools used

There are many tool have been using to develop this e-learning course. Tools are heling to emphasis the course objectives and it will make clear interesting environment to the users also.

Audacity (http://www.audacityteam.org)
Audacity is the name of a popular open source multilingual audio editor and recorder software that is used to record and edit sounds. It is free and works on Windows, Mac OS X, GNU/Linux and other operating systems. It is free and open source cross platform audio software.

Audio and Video convers

In this project, need to make compatibility of video and audio clips for different editing software platforms.so I have been using audio and video translator for that purpose.

Windows word
Each module has script.so need to write script. For that I have selected windows word.

Moodle
Moodle allows educators to create online courses, which students can access as a virtual classroom. A typically Moodle home page will include a list of participants (including the teacher and students) and a calendar with a course schedule and list of assignments. Other Moodle features include online quizzes, forums, where students can post comments and ask questions, glossaries of terms, and links to other Web resources.

Moodle Cloud
Moodle launched Moodle Cloud, which allows you to deploy a Moodle LMS for free without installation or hosting fees.so it will help to gather user feedbacks very easily.

Adobe Captivate

Adobe Captivate is a rapid responsive authoring tool that is used for creating eLearning content such as software demonstrations, software simulations, branched scenarios, and randomized quizzes in Small Web Formats (.swf) and HTML5 formats.

CorelDraw
Corel Corporation developed and released a software program called CorelDraw, a vector graphics editor. The software is a robust graphics suite, providing many features for users to edit graphics. These features include contrast adjustment, colour balancing, adding special effects like borders to images, and it is capable of working with multiple layers and multiple pages.

Filmora

Filmora gives you a helping hand to get started with any new movie project by importing and editing your video, adding special effects and transitions and sharing your final production on social media, mobile device or DVD. Check out the video below to get an overall idea about Filmora.

WampServer

WampServer is a Windows web development environment. It allows you to create web applications with Apache2, PHP and a MySQL database. Alongside, PhpMyAdmin allows you to manage easily.

5.2. Learning Management System Set Up

This course will be applied using Moodle and Moodle Cloud.it will highly supported to the eLearning environment. After the gathering video clips, tutorials and Quizzes it will develop by Adobe Captivate [20].

Besides using this eLearning management system learners can use learning materials easily and by using discussion modules they can share their problems with others and can get quick response for them.

Instructors can easily publish their video clips text documents likewise learning materials and they can evaluate the learners easily through the learning management system as well as they can make quick responses for learners requirements.

6. Evaluation and Testing

Evaluation is the key component of any course or program. Evaluation allows to access the effectiveness of our eLearning course. Therefore focuses on continuous improvement. Evaluating is essential. Because eLearning course developers need to know about course effectiveness and if it achieves its goals and objectives. This project on Social Constructionism theory. According to that eLearning course has lots of learners in society [21] .they can share knowledge by using forms. Therefore there is wide area.

6.1.Evaluation process

This course learners can be deferent age, knowledge and culture.so we have to collect ideas from them about various areas of the system. There are three types of evaluation methods.

Quantitative

Evaluate by using numerical data and analyses doing by statistical data. Question formats are What, Who and when. Quantitative data gathering techniques are Surveys, Observations, Questionnaires, Pre/posttests, LMS access records and Activity and progress reports [22].

Qualitative

In this method use textural data and other ono numerical data such as video, audio and visuals. These are analysed by using non -statistical methods. Question formats are why and how.

    Open-ended questions on surveys
    Transcript from an interview
    Text of a published report
    Photos, videos or audio files from observations

Mix method

 Mix method evaluation has been selected to project. Mix method provide the better understanding about context and provide the greater credibility to the evaluation.so productivity of the evaluation is more valid and reliable. According to that questioner was prepared [23].

The course was published by using Moodle cloud. Users can access to system and they can have idea about the course. Questioner was provided by using google forms and collecting the information from users. [24] There is the questioner as **appendix B**

6.2.Evaluation results

Fist we have to consider about goal and objectives of the course. We can evaluate that by using questioner. There was a close end question as "course met your goal". Figure 6.1and Figure 6.2 shows the result of the question [23].
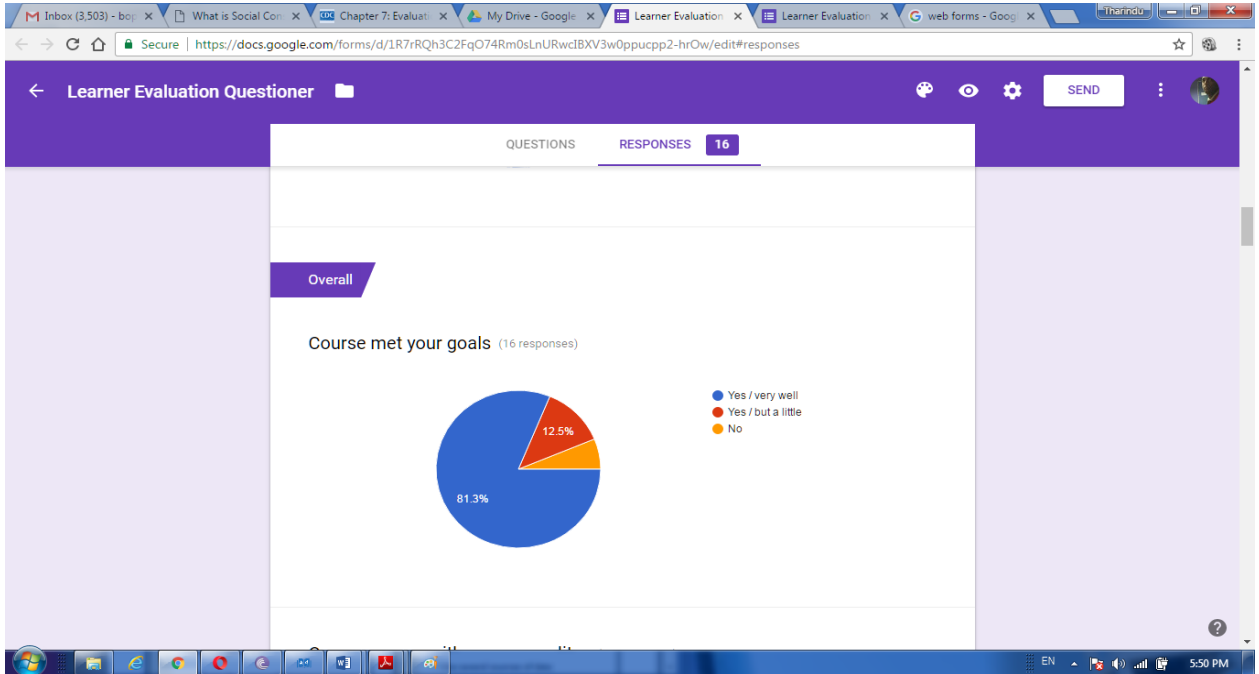

Figure 6.1: Evaluation results
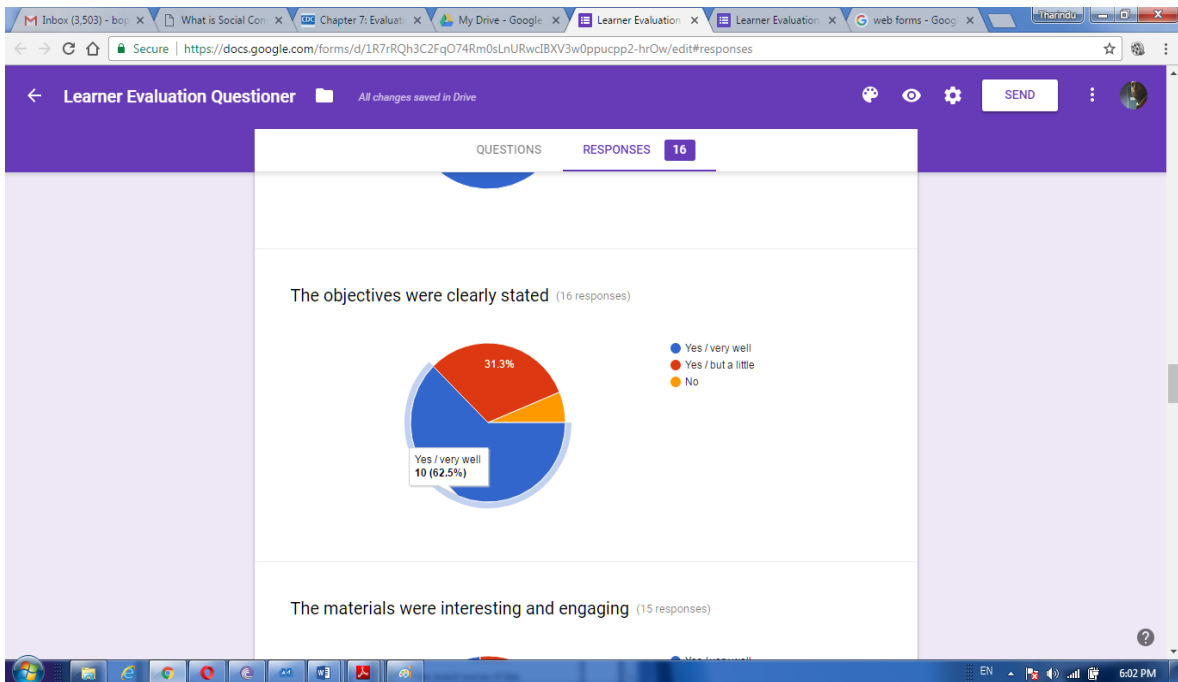
Figure 6.2: Evaluation results

According to results, 81.3 % learners are agreed with goal and 62.5% learners are agreed with

objectives. Therefore the course goal and objectives are achieved.

Interface design is very important. Because user interactivity attraction depends on the quality of the interface. We can evaluate that by using results of the questioner. Figure 15 shows the results of the question.
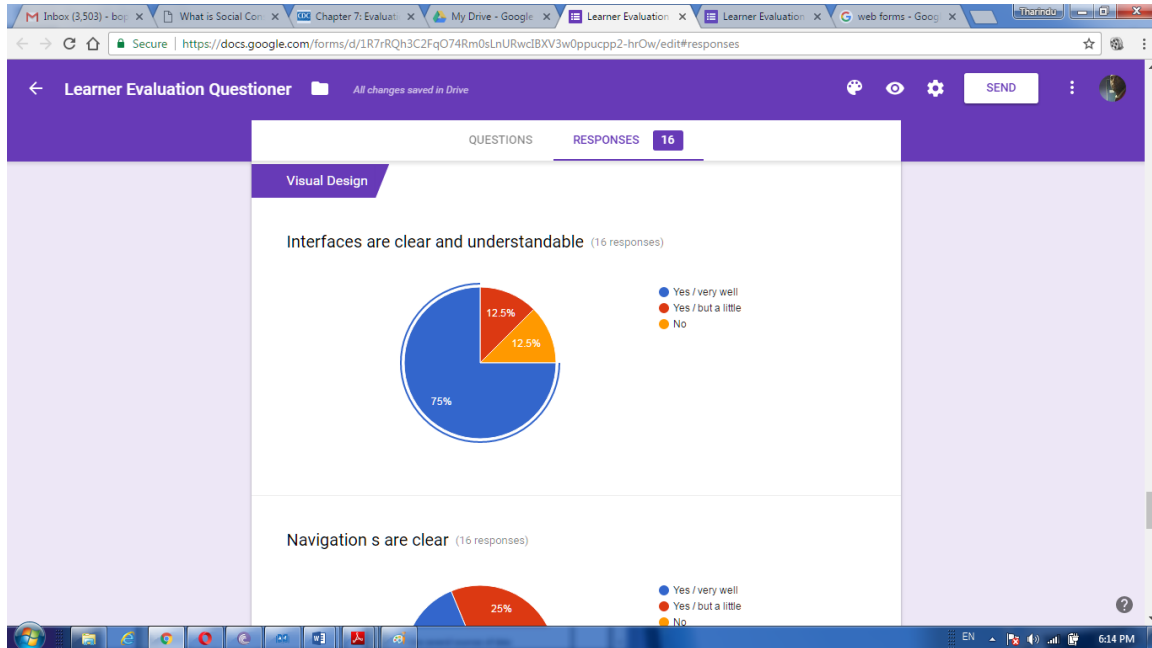
Figure 6.3: Evaluation results

There are complete evaluation results report in **appendix B**

6.2.1. Summary of evaluation results

According to learner's feedback, they have achieved the goal. That mean they got complete knowledge about herbs and home remedies. The bellow figure of the learner evaluation, provide the better evidence for that decision. 81.3% learners have accepted with the question.

Figure 6.4: Evaluation results

7. Conclusion and Future works

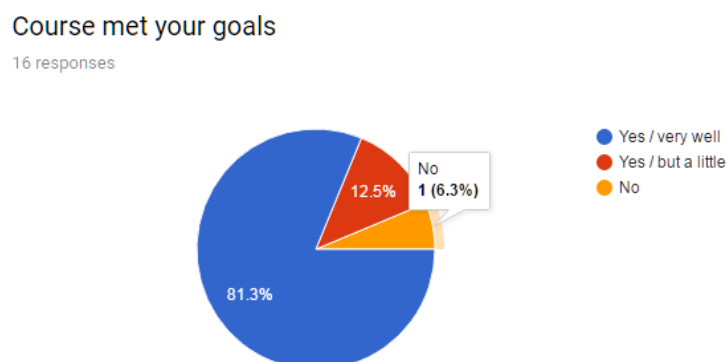There are lots of diseases whole over the world. Some diseases have treatments and some do not have any treatment. Scientists are endeavoring to find and develop the treatments and medicines every day. They are using new technology for that purpose and spend the lots of money. As a result of that the treatments and medicines are expensive. Conversely it is getting lots of time. Patient do not have any treatment during that time period and sometimes they can be die. As example, still we do not have precise treatments for HIV and Dengue.

But we have forgotten about historical medicines. There are lots of historical medicines methods for current critical diseases. Especially in Sri Lanka, there is great oriental medicine method. Home remedies are very important part of the oriental medicine in Sri Lanka. There is big gap between oriental medicine and new technology. This eLearning course provides the solution for that problem.

7.1. Critical assessment of the project

There are various types of user can engage with this course. There was data collection questionnaire for evaluate the course and people could contribute with age limit. The age limit above seventeen years old. Because above seventeen years old people are adults. They have better practical knowledge and idea about home remedies.

Successfulness - The evaluation results confirm about - lots of people need this kind of eLearning project and that developed eLearning course is useful for learners. According to that system is achieving the objectives and goal. So this course is helping to develop healthy and strong nation in Sri Lanka.

7.2. Lesson content

This project has clear and simple content. Language is "Sinhala" and it is good solution for language barrier of Sri Lankans. This lesson content involve with video and images and enough practical's and quizzes for learner assessment. This eLearning course is providing instructions for basic medicine requirement of the Sri Lankans. It is confirming by the project evaluation part.

7.3. Future works

This project language is "Sinhala". It is barrier for foreigners. Lots of foreigner do not know about "Sinhala ".therefore this lesson contents have to convert to English. Other point is, there are lots of herbs and medicines. According to that course content has to develop.

Initially there are lots of herbs and home remedies in this project. But in real world there are millions of herds.so this system data base has to develop. Previews and videos have to develop with 3 –D technology. It will help to learners.

1)

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Appendices

<u>Appendix A</u>

Course Name: Online Course on Sri Lankan home remedies	Storyboard File no. 01
Lesson Name: kohomda	ID's name:
SME's name: Dr.E.M Edirisingha.	
Page Title: Introduction page	
Date Designed:	Date verified:
Design	

1. This is the page back ground, page size is 767 * 590 PX. Background color is **#C8F0D7**.
2. Title of the module and size is 767*90 px, back ground color is **#A3F1A5,** font **FM Abaya, font** size 24px and font color **#D66D51**.
3. Main lesson content area (text/Images/video clips) back ground color is **#36DC2E.** Border color **#070807,** border size 3px.
4. When the videos clip start, this menu will appear. This will control the video clip
5. This is the main navigator bar of the lesson. This will control the rewind, play, pause, back, forward, fast, forward speed, volume and close of the lesson.
6. Accept button for lesson continue. size is 767*80 px, back ground color is **#A3F1A5,** font **FM Abaya, font** size 24px and font color **#D66D51**.

Course Name: Online Course on Sri Lankan home remedies	Storyboard File no. 03
Lesson Name: Kohomba	ID's name:
SME's name: Dr.E.M Edirisingha.	
Page Title: Lesson practical page	
Date Designed:	Date verified:

Design

1. This is the page back ground, page size is 767 * 590 PX. Background color is **#C8F0D7**.
2. Title of the module and size is 767*90 px, back ground color is **#A3F1A5,** font **FM Abaya,**

font size 24px and font color **#D66D51**.

3. Main practical content area (text/Images/video clips) back ground color is **#36DC2E.** Border color **#070807,** border size 3px.
4. When the video clip start, this menu will appear. This will control the video clip
5. This is the main navigator bar of the lesson. This will control the rewind, play, pause, back, forward, fast, forward speed, volume and close of the lesson.
6. Image collection of herbs. Background color is **#C8F0D7.**
7. Name list of herbs. Background color is **#C8F0D7,** FM Abaya, font size **16px**
8. Undo button. Background color is **F4EBEB,**FM Abaya, font color FF0000 size 6px
9. Check button Background color is **F4EBEB,**FM Abaya, font color **333237** size **6px**

Course Name: Online Course on Sri Lankan home remedies	Storyboard File no. 04
Lesson Name: Kohomba	ID's name:
SME's name: Dr.E.M Edirisingha.	
Page Title: Lesson quiz page	
Date Designed:	Date verified:
Design	

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○ A) MELIACEAE

○ B) Margosa 7

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Question 1 of 3

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1. This is the page back ground, page size is 767 * 590 PX. Background color is **#C8F0D7**.
2. Title of the module and size is 767*90 px, back ground color is **#A3F1A5,** font **FM Abaya, font** size 24px and font color **#D66D51**.
3. Main lesson content area (text/Images/video clips) back ground color is **# FFFFFF.** Border color **#070807,** border size 3px.
4. When the video clip start, this menu will appear. This will control the video clip
5. This is the main navigator bar of the lesson. This will control the rewind, play, pause, back, forward, fast, forward speed, volume and close of the lesson.
6. Quiz questions. Background color is **#C8F0D7**. **FM Abaya, font** size 14px,font color # **141315**
7. Quiz multiple answers. Background color is **#C8F0D7**. **FM Abaya, font** size 12px, font color #**141315.**
8. Next button from quiz. Back ground color is **# 333237,** font **FM Abaya, font** size 24px and font color **#D66D51**.

Course Name: Online Course on Sri Lankan home remedies	Storyboard File no. 05
Lesson Name: Kohomba	ID's name:
SME's name: Dr.E.M Edirisingha.	
Page Title: Lesson Quiz results page	
Date Designed:	Date verified:
Design	
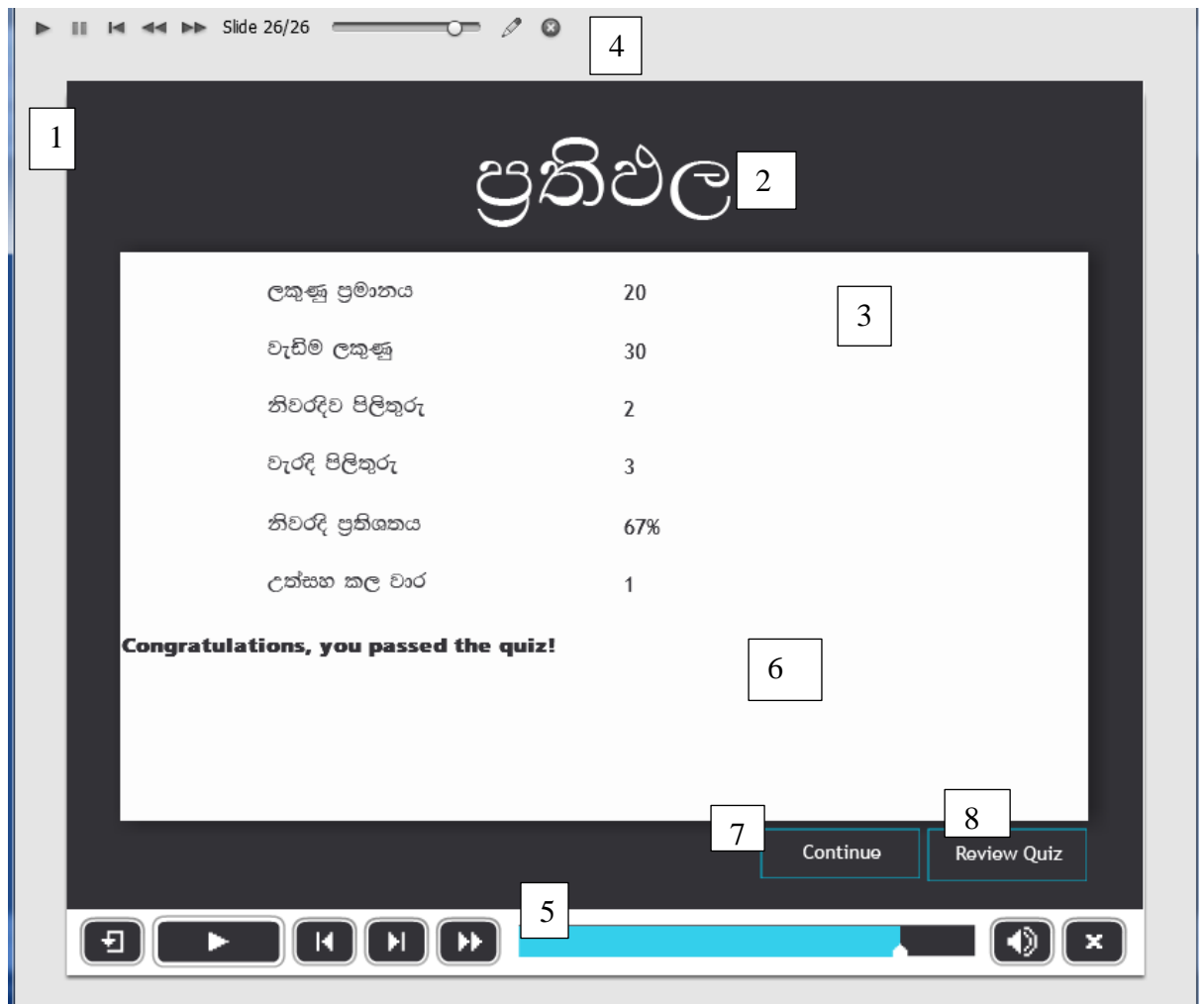
▶ ❙❙ ◄◄ ◄◄ ►► Slide 26/26 ━━━○━━ ✎ ⊗ 4

1

ප්‍රතිඵල 2

ලකුණු ප්‍රමාණය	20
වැඩිම ලකුණු	30
නිවරදිව පිළිතුරු	2
වැරදි පිළිතුරු	3
නිවරදි ප්‍රතිශතය	67%
උත්සහ කල වාර	1

3

Congratulations, you passed the quiz!

6

7 Continue   8 Review Quiz

5

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1. This is the page back ground, page size is 767 * 590 PX. Background color is **#C8F0D7**.
2. Title of the module and size is 767*90 px, back ground color is **#A3F1A5,** font **FM Abaya, font** size 24px and font color **#D66D51**.
3. Main lesson content area (text/Images/video clips) back ground color is **# FFFFFF.** Border color **#070807,** border size 3px.
4. When the video clip start, this menu will appear. This will control the video clip
5. This is the main navigator bar of the lesson. This will control the rewind, play, pause, back, forward, fast, forward speed, volume and close of the lesson.
6. Quiz reviews size is 500*90 px. Background color is **#C8F0D7**. **FM Abaya, font** size 14px,font color **#141315**
7. Continue button back ground color is **# 333237,** font **FM Abaya,   font** size 24px and font color **#D66D51**.
8. Review button back ground color is **# 333237,** font **FM Abaya, font** size 24px and font color **#D66D51**.

Appendix B

Learner evaluation questioner

User details	
1. Name :	
2. Email Address:	
3. Age :	
4. Are you student? (Please put a tick in front of the correct option)	
a. If Yes, School Name / Grade : (Optional):	Yes , No
b. If No, Designation (Optional):	School Name : Grade :
5. Do you have knowledge of information communication technology? (Please put a tick in front of the correct option)	Yes / very well Yes / but a little No
Overall	
6. Course met your goals :	Yes / very well Yes / but a little No
7. Can you agree with course quality :	Yes / very well Yes / but a little No
8. Would you recommend this course to others :	Yes / No
9. You received the value of time?	Yes / No
Course content and activates	
10. The materials were clear and understandable	Yes / very well Yes / but a little No
11. The materials were accurate and current	Yes / very well Yes / but a little No
12. The materials were well organized	Yes / very well Yes / but a little

13. The objectives and goal were clearly stated	Yes / very well Yes / but a little No
14. The materials were interesting and engaging	Yes / very well Yes / but a little No
15. The work load was just right	Yes / very well Yes / but a little No
Assessments	
16. The Instruction and directions were easy to fallow	Yes / very well Yes / but a little No
17. The assignments were challenging	Yes / very well Yes / but a little No
18. The assignments were marked fairly	Yes / very well Yes / but a little No
19. The grading criteria were clear and explicit	Yes / very well Yes / but a little No
20. The assignments time were enough	Yes / very well Yes / but a little No
Visual Design	
21. Interfaces are clear and understandable	Yes / very well Yes / but a little No
22. Navigations are clear	Yes / very well Yes / but a little No
23. Interface background colors were compatible	Yes / very well Yes / but a little No
24. Text color and sizes were compatible	Yes / very well Yes / but a little No
25. Video location in interfaces were compatible	Yes / very well Yes / but a little No
Your suggestion :	

Evaluation results have been attached to hard copy of the document.