

Study into english courseware for slow learners



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Abstract- Current trend indicate that learning through the use of application and courseware had become important teaching method. However, it is different case for slow learners. As most schools slowly adapting the more effective teaching method, they cannot keep up with the flow. Even though there are courseware developed for the slow learners, the courseware is far from fulfilling their specific needs. Statistic shows that in a US typical classroom there will be 3 or 4 slow learners. In areas of poverty and many low-income urban areas, the children per classroom who could be characterized as slow learners might be twice that number. The characteristic of the slow learners are often described as immature in relations, find it difficult to solve complex problem, work very slowly, can easily lose track of time, unable to perform long-term goals, and have poor concentration skills. However, they are very good with hands-on materials. This paper will present the development of courseware made to teach English for the slow learners.

Keywords-component: courseware; slow learners; English;

Introduction

Background

Slow learners are no longer rare cases in Malaysia. However, they are not categorized as people with special needs. Some might confuse the slow learners with dyslexia. However, both terms are different. Dyslexic will have difficulties in learning to read and write despite having same learning process and effort with others. For slow learners, they do not do well at schools or task that require extensive reading, writing, and mathematic but they perform great outside class especially in hands-on tasks. They will need <https://assignbuster.com/study-into-english-courseware-for-slow-learners-essay-samples/>

extra time in completing the tasks given. Because of their characteristics, slow learners are always left behind as they cannot catch up with the learning process gone through by other kids. Even though new technology has been developed to enhance learning process, they are left out because it is not suited for their learning needs.

This project is intend to enhance the English courseware specifically for the slow learners in way that will serve their learning needs which is different from other kids. The courseware will be focus on non-linear techniques to make it flexible and more conducive for the slow learners.

As there is not much of courseware developed for slow learners, the product of the project will significantly bring the learning process for the slow learners into new level and brighten the hope for them to learn like normal kids.

Problem Statement

Teaching slow learners isn't same like teaching normal kids. Teaching them require different methods and approaches because of their characteristics. As learning process moving on taking advantage of computers and internet, slow learners are left behind because there are no specific learning applications for them that will suit their needs especially in critical subjects such as Science and Mathematic. There are lots of courseware in the market out there but it is too little in numbers and it is far from perfect. This new courseware to be developed will be a great tool for teacher to teach English to the slow learners because it will enhance what's already in the courseware and make it better.

Objectives and Scope of Studies

Objectives

The objective of this project is to enhance the current English courseware from Mohd Izzat Helmi Bin Yahya's English Courseware for Slow Learners project and will be specifically designed for the slow learners so that the learning process will suit their needs. Because of their characteristics, the courseware will need careful designation.. The courseware will enrich English learning process which already in the current courseware and make it more interactive and flexible.

Scope of Studies

The project will involve the study of slow learner behavior and courseware development. The result of the study then will be analyzed to develop and enhancing cognitive skills training that will be integrated with the courseware so that the target to teach slow learners can be achieved. Target group of the courseware will be primary school student in Standard 4 to Standard 6 (10-12 years old). The courseware will be developed as a game to teach General English.

Literature Review

Game-Based Learning

Marc Prensky (2003) says that since Pong is introduced in 1974, the unique expertise that game designers have honed to a superfine edge is player engagement: the ability to keep people in their seats for hour after hour, day after day, at rapt attention, actively trying to reach new goals, shouting with glee at their successes, determined to overcome their failures, all the while

begging for more. Along with the new technology that had been developed in recent years, games had become more than just entertainment, it had evolve to become the medium of learning. In Digital Game-Based Learning (Prensky, 2001), explain that children nowadays are different from previous generation where they grow up with digital technology and their minds are changing to accommodate the technologies with which they spend more time. From there, it is clear that most children nowadays from different gender, ages and social groups spends most of the time with video games. Many experts see the values in video games as a medium of learning. Its true that this children love games more than schools but their attitudes toward games is the attitude of the learners; passionate, cooperative, and actively involve in problem-solving. Research by Zyda (2007) argue that computer games are an engaging medium for learning, since games can stimulate cognitive processes such as reading explicit and implicit information, deductive and inductive reasoning, problem-solving, and making inferences from information displayed across a number of screens

To define game based learning will be quite complicated because there are several different opinion on the matter. Kirjavainen(2009) define game-based learning as field of research and game design based on observations that play, structured or unstructured, conditions the human brain for transformation and learning. Wee Hoe Tan(2008) defines game-based learning as form of learner-centered learning that uses electronic games for educational purposes. However, the concept of game-based learning is still the same; the use of game with the defined learning outcomes for the purpose of learning.

Kasvi (2000) lists the seven requirements for effective learning environment as:

Provide a high intensity of interaction and feedback;

Have specific goals and established procedures;

Be motivational;

Provide a continual feeling of challenge, not too difficult to be frustrating nor too easy to create boredom;

Provide a sense of direct engagement on the task involved;

Provide the appropriate tools that fit the task; and

Avoid distractions and disruptions that destroy the subjective experience.

Kasvi (2000) suggests that computer games fulfill all of these requirements and believes that they “ satisfy them better than most other learning mediums”. By looking at how the Western world had utilized game as learning module in classroom, it proves that the statement is true. R. V. Eck(2006) explain that games like Civilization, SimCity 4, Cruise Ship Tycoon, and Roller Coaster Tycoon had already been implemented in classroom. People might be skeptical at first glance. All these games have prove them wrong. For example, in Roller Coaster Tycoon students build roller-coasters to different specifications, which is what engineers should do. By extending the gameplay with basic learning process like calculus physic knowledge, it will make a valuable learning experience.

Slow Learners in Malaysia

In Malaysia, dyslexic children had begin to receive attention when MyLexics, a courseware to help the dyslexic learn basic Malay language is introduced (Haziq, 2009). However, it's a different story for the slow learners. In fact, there are cases reported where slow learners are left behind in the classes (NST, 2008). Cases like this shouldn't happen because even though they are weak in study they are definitely very good in other aspects.

Even worse, One in every three juvenile delinquent in integrity school in prison or detention centers displays learning difficulties including being slow learners. (The Star, 2008) Many believe that if these youth not identified and helped will cause them to end up as criminals. Most of them tend to drop out of schools and vulnerable to negative influence because of the problem they facing.

Overcoming the Weaknesses

Research by LearningRX(2006) argue that weak cognitive skills are the cause of learning disabilities such as dyslexia and slow learning. Important skills such as concentration, perception, memories and logical thinking are not as good as other normal people which make reading, writing, and thinking more difficult. However, this weakness can be improved through specific training and testing. Mel Levine (2008) explain that how Kitty Hawk Elementary School in North Carolina America had implied School Attuned Program using the Neurodevelopmental Profiles where all students with different cognitive skills can learn. Lisa Galleli, a teacher at Kitty Hawk describes her management plan for one such students as “ He had significant graphomotor weaknesses with spelling and writing. But he really shined in his social skills <https://assignbuster.com/study-into-english-courseware-for-slow-learners-essay-samples/>

and that made all the difference in the world. He was also good at math and problem solving. We use his strength who keep him motivated with success while tackling his writing problem.” The result had proved that it is not impossible to overcome the weakness.

Neurodevelopmental Profile is researched and synthesized by Mel Levine and his colleagues consist of 8 constructs that are:

Table 1: 8 constructs of Neurodevelopmental Profiles

Attention

This includes the ability to concentrate, focus on one thing rather than another, finish tasks, and control what one says and does

Temporal-sequential ordering

Whether it's being able to recite the alphabet or pushing a response button on Jeopardy, being able to understand the time and sequence of pieces of information is a key component of learning.

Spatial ordering

The ability, for instance to distinguish between a circle and square or to use images to remember related information

Memory

Even if people are able to understand, organize, and interpret complex information at the moment, their inability to store and later recall can dramatically affect their performance.

Language

Developing language functions involves elaborate interaction between various parts of the brain that control such abilities as pronouncing words, understanding different sounds and comprehending written symbols

Neuromotor functions

The brain's ability to coordinate motor or muscle function is key to many area of learning, including writing and keyboarding.

Social cognition

One of the most overlooked components of learning is the ability to succeed in social relationship with peer pressure.

Higher-order cognition

This involve the ability to understand and implement the steps necessary to solve problems, attack new areas of learning and think creatively.

By realizing that every human have some strong functions and some weak ones, Mel Levine found that it is possible to describe each individual's unique mix of strength and weaknesses.

Using the right method in developing the courseware and the right approach for the slow learners, it is not impossible that this courseware will be definitely help them.

Formative VS Summative Evaluation

In order to gather data for the enhancement of the courseware, an assessment need to be done. There are two methods to be used; formative evaluation and summative evaluation.

According to H. L Roberts(2009), formative evaluations also known as developmental or implementation evaluation assess what works and what does not work about a particular activity or project as it is happening. It is used to assess the value of a project as it is taking place to determine how it can be improved. The method use in formative evaluation is the same like other assessment which include survey, interview or data collection. This type of evaluation relies on qualitative data that is how participants felt about the process as well as quantitative data, such as charts or test scores. Formative evaluation typically involves a small group of users and participants in the project being evaluated. Participants in formative evaluations look not just at the goals of the process and whether those goals are achieved but also at the process itself and where that process is a successful one or not. Even though this type of assessment is quite complex, there are benefit in it. It allow early identification of potential problem in the subject of assessment. Moreover, it can be a good way of gauge the user perception on the subject because it rely on user feedback.

As for summative evaluation, Fox Valley Technical College(2007) describe it as process that concerns final evaluation to ask if the project or program met its goals. It is cumulative in nature. It concentrates on learner outcomes rather than only the program of instruction where the aim is to determine the user's mastery and understanding of information, concept, skill or process. Ongoing summative assessment represents important tools for monitoring the progress across time. There are various method of summative assessment such as demonstration, licensing, internship, portfolio or clinical. Summative evaluation is typically quantitative, using numeric scores or letter grades to assess learner achievement. In a sense, it lets the learner know " how they did" and " how good they are" However, there's more to it. By looking at how the learner's did, it helps to know whether the product teaches what it is supposed to teach and how efficient it is.

Here the courseware will be using formative evaluation method. By using formative evaluation, the current English courseware functionality can be assessed to find out whether its working to perfectly or not.. Even if the courseware is working properly, it won't fulfill its objectives if the user (in this case student) don't like it or having problem in using it. By using formative evaluation method, user feedback can be recorded and area of improvement can be found. In conclusion, formative evaluation method will assess the courseware from two perspectives; the courseware functionality and user feedback. Both will greatly help in the enhancement process of the current courseware.

Methodology

Throw-Away Prototyping

The methodology chosen for the project would be Throw-Away Prototyping. Dummy prototype, which is presentational only will be developed. Thorough analysis will be done before first dummy prototype is developed to ensure the prototype have enough details representing real working system. From there, the dummy prototype will be shown and tested with the user to get feedback and identify additional requirement. The next prototype will be developed until it really visualize real working system. When it is ready and all issues are resolved, it will be implemented as fully-functional system.

Figure 1: Throw-Away Prototyping

Planning

The planning phase is the crucial one in developing the project. First thing to be considered is how the project will be developed. For that, the Gantt Chart for the project is build so that each project milestone during the one year of the project can be tracked. Other than that, research is made to find suitable tool to be used for the development of the project. As the project intended to enhance the current courseware, research also made to identify suitable test subject to try the current courseware.

Initial Analysis

During this phase, the test scenario is developed and interview as well as questionnaire is build to get data from the target school. Data is gathered as much as possible which also include slow learner syllabus in school and from there thorough analysis is done. The purpose is to identify strengths,

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weaknesses, area of improvement and what to be done for the enhancement process.

Prototype Building

After all analysis has been done, the design of the courseware begins. A sketch is done to get the overview of new courseware to be developed. The sketch will gone through refinement to integrate the content and multimedia elements (animations, flow of information, etc). The details of the design will be recorded. After all details completed, the development of the prototype begin. When the dummy prototype is complete with all required features, it will then tested at the school to find whether it visualize all the issue that should be addressed. If further refinement is required, the dummy prototype will continuously be build until all requirements is complete.

Implementation

After all requirements had been fulfilled and the dummy prototype is really visualizing the courseware, it will be declared to be complete and real working courseware will be implemented.

Research Methodologies

To get all the information required, two research methodologies will be chosen that are:

Interview: An interview is conducted with the respective teacher of the school. A test scenario will be deployed to the student using the current courseware along with the interview. This is part of formative evaluation that will test the functionality of the courseware and gauge the user on how they use the courseware. The objective is to identify the strengths and weaknesses of the current courseware and find the area of improvement.

Questionnaire: The interview and questionnaire will be done with the respective teacher to gain in depth details of how slow learners learn and gain all relevant data which will be reference in developing the new courseware.

Result & Discussion

Requirement Gathering

Interview

In the way of gathering data required for the enhancement of the English courseware, an interview is conducted with Pn Khadijah, Coordinator of Special Education for Sekolah Kebangsaan Sultan Yusuf who is also the English teacher for Special Education Department. Using the current courseware made by Mohd Izzat Helmi B Yahya, a test scenario is deployed where the goal is to identify the strengths and the weaknesses of the courseware so that the result found can be implemented during the development of new English courseware. The test scenario will verify the conditions and steps taken in using the courseware sample to get the result for further analysis.

Three slow learner students from Sekolah Kebangsaan Sultan Yusuf take part in the test scenario. Below are the details of the three students:

Respondent 1 – A 12 years old boy and is preparing for his UPSR next year. He falls into the category of normal slow learner. His performance in the class is very good. He has the basic skills of using computer which make him able to use the sample courseware properly.

Respondent 2 – A 12 years old boy. He falls under the category of slow learner and Syndrom Down. He has the basic skills of using computer which make him able to use the sample courseware properly.

Respondent 3 – A 7 years old boy. He just started his school early this year. He is the most challenging student because he falls under the ICU slow learners category. Moreover, he doesn't have basic skills of using computer which make the test scenario more difficult to be performed.

The purpose of choosing these three students is to observe how different categories of slow learners make use of and react to the courseware.

Basically, all the student use the courseware in the same way depends on their knowledge and skills about computer. Below is the summary of result from the test scenario done with all three students.

Table 2: Summary of test Scenario Result

No

Simulation Date

Action and Data

Expected Result

Actual Result

1

12 Apr 2010

Launch the courseware interface

Courseware interface appear successfully

2

12 Apr 2010

Launching topic 1

Topic 1 launched successfully

3

12 Apr 2010

Launch ' Learn' from topic 1 menu

Learning module appear successfully

4

12 Apr 2010

Checking audio for topic one

Audio working successfully

5

12 Apr 2010

Checking synchronization of audio and visual flows.

Audio and visual is synchronized

Flow of audio and visual is too fast

6

12 Apr 2010

Click the button ' Play Again' for topic 1 learning module

Audio and visual replay

7

12 Apr 2010

Launch ' Exercise' for topic 1

Exercise launched

successfully

Exercise for Topic 3 about colors appear

8

12 Apr 2010

Performing exercise about numbers

Exercise done successfully

Exercise cannot be performed because exercise for colors appear

9

12 Apr 2010

Click the button ' Play Again' for topic 1 exercise

Exercise can be redo

Exercise appear is not for topic 1

10

12 Apr 2010

Launching topic 2

Topic 2 launched successfully

11

12 Apr 2010

Launch ' Learn' from topic 2 menu

Learning module appear successfully

12

12 Apr 2010

Click and hover on the images of the body parts

Audio and visuals working to describe the images

Audio working only if cursor is hovered on the image. When image clicked, nothing happened

13

12 Apr 2010

Launch ' Exercise' for topic 2

Exercise launched successfully

14

12 Apr 2010

Drag the words into the respective body part

Words dragged successfully

Because there are some input of the exercise not in the learning module of topic 2, student get confused easily

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15

12 Apr 2010

Click the button ' Play Again' for topic 1 exercise

Exercise can be redo

16

12 Apr 2010

Launching topic 3

Topic 1 launched successfully

17

12 Apr 2010

Launch ' Learn' from topic 3 menu

Learning module appear successfully

18

12 Apr 2010

Click and hover on the images of the color.

Audio and visuals working to describe the images

Audio appear when the image is clicked. When it is hovered nothing happened

19

12 Apr 2010

Launch ' Exercise' for topic 3

Exercise launched

successfully

20

12 Apr 2010

Dragging each color into the respective jar.

Each color dragged successfully

21

12 Apr 2010

Return to courseware interface from any point of the courseware

Courseware interface appear successfully

Other than that, Pn Khadijah says that , the teaching syllabus and method are different from the mainstream syllabus. They use preschool syllabus in their learning modules However, if they show good performance the teacher will

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prepare them to be in national examination like UPSR. More information about the interview will be explained in the next section below.

Questionnaire

In order to get in-depth details of requirements of the courseware to be developed, interviews and questionnaire is conducted with the respective teachers of the schools. This is important because not all required data can be acquired through the test scenario assessment. The teacher answering the questionnaire is Pn Khadijah, Coordinator of Special Education for Sekolah Kebangsaan Sultan Yusuf. She has years of experience in teaching slow learners especially in English subject. Pn Khadijah is given the overview of the current English courseware and then she is given the questionnaire. Below is the result of questionnaire answered by the teacher:

Data Analysis

From the interview and questionnaire conducted with students and teacher of Sekolah Kebangsaan Sultan Yusuf, there are several issue should be addressed about the current English courseware and also what can be improved for the courseware to be developed:

Flow of audio and visual must be synchronized and not too fast because slow learners couldn't catch up if it's too fast

For unknown reason, exercise for Topic 1 that should cover about numbers is replaced with exercise from Topic 3 which is about colours results in having two exercises about colours and the absences of exercise about number.

The instruction is different than what can be done in the learning module. For example the instruction of topic 2 says to click the image to hear the audio. But instead, the audio only appear when cursor is hovered on the image. Nothing happened when it is clicked.

Input of the exercise should be the same as what it appears in the learning modules to avoid confusion for slow learners. For example, the input of the exercise for topic 2 includes the stomach part even though it is not taught in the learning modules.

Input of learning modules shouldn't be more than 5 in a topic because slow learners could easily forget what they learn if there's too many input.

Slow learners in Malaysia are familiar with the Malaysia English. Using U. S English or Britain English in the courseware would confuse them.

Students especially kids like learning using computer. Slow learners are not excluded. So the courseware to be developed must be visually attractive.

Proposed System Architecture

Figure 2: Proposed System Architecture

The courseware will integrate use suitable multimedia elements that will support interactive learning environment either for the use at school or at home. This will make the learning process will be more engaging and entertaining.

The courseware will consist of 3 modules primarily developed for students of Standard 4 to Standard 6. All these modules will be developed based on learning syllabus for slow learners from Sekolah Kebangsaan Sultan Yusuf.

After the application is launched, students will be accessing the courseware interface. To ensure the flexibility of the learning process, students will be given freedom to choose which module they want to use. After each module there will be an exercise that will test the student's understanding of the current topic. However, students are free to choose whether they want to do the exercise or not. If they don't want to do the exercise, they can proceed to the next module or return to the courseware interface to choose other modules. In addressing that slow learners cannot cope with too much input at a time, each module will consist of two parts. This will enable the students to enrich their learning without taking too much input at a time. They have the freedom to choose which part they want to use in a module. The three modules are: Numbers, Reading Skills, Body Parts.

Module 1: Numbers

The first module will teach the students the foundation of recognizing numbers. The first part will teach about how to identify ordinal and cardinal numbers and what's the difference about them. The second part will teach the student how to differentiate between odd numbers and even numbers using the same modules in current English courseware with enhancement made on it.

Module 2: Reading Skills

This module is intended to enhance the reading skills of the students.. The activity in the first part will be focus on matching picture. Each time a picture from two sets of pictures will be shown to the student and from there the students will be asked to match the picture with the picture from the set which is not shown. The second part will focus on matching letter and words. The concept will be the same like in the first part.

Module 3: Body Parts

This module will teach the student the foundation of identifying body parts. The first part will teach the student about main body parts in general. The second part will teach the student specifically about parts on head

The tools chosen for the development of the project will be Gamemaker 8. The reason to use this tool is because it is easy to be used compared to most of other tools. It allow the user to use collection of freeware images and audio for starters like the author to make a game looking courseware which will encompass on drag-and-drop action using the mouse. This tool will be used along with other tools like Adobe Photoshop CS3 and Macromedia Flash where necessary to make the courseware more interactive and rich.

Conclusion

Current English courseware is using basic concept of combining audio with visual in the teaching. Even though, it is still not perfect. There is lots of area for improvement can be made for the courseware. The author's project will take the opportunity to make enhancement on the courseware to maximize its potential. The new courseware to be developed will be more interactive

and rich while in the same time addressing the issue of current courseware. With assistance from various parties such as the author's supervisor, Miss Elaine, teachers of Sekolah Kebangsaan Sultan Yusuf as well as other people, this project will succeed.

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