# E-Learning Multimedia

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## E-Learning Software: Research and Development

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## *PART1: Reflection*

### a. Code School JavaScript Tutorials

The first video I watched was code School, the engaging video tutorials coupled with in-browser coding challenges so that I could learn by doing. They used graphics with text and the speaker explained the same information relating the words to the graphics which helped me to relate the information and made it easy to understand. It was not necessary to jot down the information in the book because everything made sense. A large amount of information was given in graphics and spoken words so it was easy to relate the words with the graphics, giving the learner twice as much exposure to the explanation. After completion of each topic the challenge was given which were beautifully defined and allotted badges and points on successfully completing the activities. This motivated me to learn more and to earn more points.

For example, by using the special characters, quotations and space type the below code in given format.

Quoth the raven:

“Nevermore!”

The above challenge was confusing, and I think it may be intentional to give the learner a better understanding. When the given answer was wrong it gave meaningful feedback showing the exact location the error is and the suggestion to correct and gave plenty of chances to try over and over again till I get the hang of it. If you give up, there was an option to buy the answers by using your earned points.

“Quoth the raven:\n\t\” Nevermore! \””

At the beginning speaker introduced JavaScript language and exactly what will be learning in this course and how to use it. What will be able to do later on after completion of the course? I felt like the valuable information was skipped to make the video short. No information given about the Text Editors and Browsers which is very important and I reject that. Point what it is about?

Normally I learn writing the stuff on the book or practice the code same time pausing the video, which helps me to remember and understand what I learned. After using this Code school tutorial on Road Trip to JavaScript, because the tutorials itself provide the challenges the option is opted. No external resources required.

### b. Lynda.com JavaScript Tutorials

The second video I watched was Lynda.com, they used video tutorials coupled with graphics, text and the speaker's words are highlighted bottom of the video tutorials, which helps to take notes. The speaker types on the screens while talking which helped me to learn better and can see the exact output there and then. The learner exercise files help the advanced users instead of going through each and every video, can directly jump to the one the user interested in, which saves time. The transition from one topic to another is very well done to relate the information and made it easy to understand. As I'm new to the JavaScript, the initial information provided before even starting the coding was very vast. The resources required to use JavaScript and where to download from, install and how to use them in detail is explained with graphics and shown by doing it so that was easy to follow. The additional helpful resources to reference is one of the useful information. Code Practice area helped hands on practice to gain in depth knowledge on the taught course.

### c. Homeandlearn JavaScript Tutorials

The third way I learned JavaScript using the homeandlearn.co.uk. It is like a book with plenty of text and limited graphics is used to teach. The learning outcome was skipped but there was a detailed index was presented and could easily glance over it. The screen cast of each and every step was shown and learning is actually depressed me when a graphic is explained by a combination of text and narration that reads the text. The too much text distracted me from key points. I felt limited text to the point is better than the lengthy elaborated text. This tutorial greatly decreased the amount of interaction and engagement.

To conclude, the code school tutorial I felt was better as the interactivity kept me motivated to continue the course and it kept me engaged as I did not want to buy answers using my points. If the initial content of the course from the Lynda.com and the tutorials from code school combined together can be a great software to the learners. Homeandlearn was very boring to learn but it is free.PART 2: Documentation:

a. Requirements

Teaching Body Parts to Key Stage 1 children

***Learning Outcome:***

Children will be able to:

- Use the correct names of the body parts and the five senses.
- Describe how the body part look and the actions of the body parts.
- Take a more active role in self-help and self-care.
- Know what are senses and how to recognise which senses are used in different times.
- Through observations and the use of vocabulary to teach children various parts of the body.

**Target learner** - Key Stage 1 children and the adult beginner learners to body parts and senses.

**Problems learning, using existing methods**

- Instructor-led classroom training is not always interactive.
- Success is mostly depending on the Instructor. All instructors not able to transfer the information in an effective way.
- Teaching classroom with large number of people is hard because all cannot concentrate and they distract others too.
- New skills and material can be expensive
- Sometimes you can't concentrate on books for long time.

- Audio only methods are easy to remember but hard to identify the objects.
- All children don't have same grasping power they take time to learn.

**How eLearning software could overcome those problems**

- Presenting the images coupled with text and audio.
- Asking simple questions and recognising that they can be answered in different ways
- One to one learning motivates children and easy to focus because of interactivity.
- Now a day's children like to use various gadgets so it is helpful to go over it again and again until the child remembers.
- Using their observations and ideas can find answers to the questions
- Children should have plenty of opportunities to learn the names of the main body parts (including head, ears, eyes, hair, mouth, nose) through images and Audio.
- The existing text based and class room teaching and rhymes are not effective.
- Activity embedded in the software to check their progress.

**Context in which software could be used**

- Great to learn at home
- Provide additional High quality information to practice
- Children can take this as a challenge
- Average children can improve learning through eLearning
- Significant improvement in learning performance

b. Research Evidence

Skinner revealed that child's performance changes time to time through the mixture of actions. The child observes the actions, listens to sounds, and shows reaction rather than listening to others talk. There is research to show connections between meaningful learning and multimedia. I will be using Graphics, text and auditory media in this software. It will help the children to identify, name, draw and label the basic parts of the body.

**Graphics, Text and Auditory media in the software**

Berk & Winsler (1995) suggest that child development is a kind of social constructivism, in which development is determined by culture. The progress depends on the culture, language, learning and activities. As some children will not have access to the language used to describe body parts, images are easier for them to understand - they are universal. Children are coming to school from all different backgrounds, culturally and linguistically, the images help with the learning process, which becomes universal.

Richard Mayer suggested in the dual encoding theory that the information seen and listened are handled separately. He believed that the image viewed and the related sound heard are processed through distinct cognitive channels in human mind, allowing the two separate representation of the information process concept.

The question is then about how many images we should use.

In cognitive theory, it recommends to use words and graphics over plaintext and spoken text, because we use different cognitive channels to process different types of information. Multimedia presentations encourage pupils to engage in active learning by mentally representing the material in words and pictures and by mentally making the connections between the graphics and verbal explanation. Catching the attention of the learner is very important but all kinds of graphics are not supportive. It's about meaningful interaction and images i.e. avoiding 'irrelevant graphics' (p385 Clark and Mayer) – Coherence Principle. These studies show that too many images can be

distracting and so hinder a child's development. When looking at visual memory, Luck and Vogel argued that in order for a visual memory to be at its peak, there must be a maximum of 4 objects. I won't be using video or animation in this software and I will only use a maximum of 4 different images for each body part.

According to his constructivist theory, Piaget asserts that children pass through four distinct stages of development. He believed reasoning deepens in children as they grow, engagement in the physical and social world enhances development, and "conceptual change occurs through assimilation and accommodation" (Daniels & Shumow p. 497) – i.e. multiple images are better. E.g. Arthur Efland gives the example of a child learning about cats and dogs for the first time. A child can mistake a cat for a dog because it believes all things with fur and 4 legs are dogs. This is because the child has not seen enough cats and/or dogs to be able to differentiate. In the same way, I'll be using multiple images for body parts in this software, in order to help children, differentiate between similar parts like hand and foot.

Choosing the media i.e. text, graphics and audio in important. For the software I will be using a combination of the three so that the learner gains information quicker and it is memorised long-term. Words are quick and economical but the images combined with text or audio attracts young children and they learn better. Clark and Mayer say that the 'integration of auditory and visual sensory information in working memory'. (p37 Clark and Mayer 1974) is what's needed in order for e-lessons to be useful.

**Learning strategy: i.e. how the learning is done**

Clark and Mayer suggest that practice tests are more helpful over presentations.

When the training material is made short and includes response material in between greatly improves the effectiveness and the efficiency. By providing more activity to the learner and providing effective feedback by the trainer helps in student progress. (Vargas, 2010).

In this method learner observes and listens to the speaker and the information is presented as graphics, text and audio. To evaluate the learners understanding, a small exercise is presented based.

‘The effectiveness and efficiency of any lesson improves when the amount of presented material is cut, thus reducing the time between each learner response.’ As stated by Vargas, learning must be initiated by the student, i.e. tests with the student actively taking part ensure proper learning.

## c. Specifications

One of the main requirement is to evaluate the child's understanding of the various parts of the body and the senses using a drag and drop quiz. As stated by (Vargas, 2010) providing more activity to the learner and providing effective feedback by the trainer helps in student progress. The student has provided with optional questions and the drag and drop quizzes. In the drag and drop quiz, the text should bounce back to the original place if the wrong option is chosen which is considered as feedback to the student to motivate the child to try multiple times till the child can recognise correct body parts, senses and label them. The task should be completed by the child independently in order to gain an accurate assessment. Further test can be given to the child to test their knowledge.

The second requirement is to include four static images in constructivist theory, Piaget argued in their research. The various types of images including clipart's, size and colour of hair, eyes, ears, nose, mouth and hands in order to help children to identify the exact body part by showing enough images and children also will use their senses of sight, touch, smell, taste, and hearing to learn about the world.

The Third requirement as said in the cognitive theory, it recommends to use words and graphics over plain text, will be using the text (words) with the graphics, which helps to represent each body part with word and the child mentally connect the graphics with words. Using only related and meaningful images, same text size, colour and contrast. These will help to focus on quality of the content and the design will be plain and simple rather than details of uniformity. The learned information was taught with combination of text, visual and auditory, it can be recalled by the children using either the sound or visual memory. Using auditory in the software clearly and concisely explain the children senses which help the child to gain information around themselves.

To justify, the activity to motivate the child to create interest in the content of the course might otherwise consider boring. The activity encouraging the child to learn and apply it

into the real world situations. Usage of Still images, text and sound help the child to understand the body parts and senses.

## d. Tools Review

To implement the eLearning tutorial for the Key Stage 1 children, I will be using a tool that will allow me to add images, related text and a sound to pronounce the words. The child can view the image, connect the text to the image and can hear how to pronounce the body part. Each page will have previous and next button, so till the child is comfortable with one body parts then can move to the next one and can move back to the previous page as the child will have full control over the studies. After completion of each part of the course child will do a drag and drop activity which will be fun with learning. The feedback is that wrong answer will bounce back to the original place. To keep the focus, optional questions will be added in between. Publishing the slides as a responsive webpage for the easy access.

The following tools has been compared:

**IMC Teach**

IMC Teach is one of the free tool to create and distribute learning content. The slides created in PowerPoint can be integrated in this tool or enhance the existing elements. It is easy to use and it has a modern interface where the existing course content can be used or can add my own text, images and sound. Drag and Drop interactive quiz was not available which I was looking for. But the other Interactive quiz available where meaningful feedback can be provided and the chance is given to try the quiz again but all quizzes are text based and perfectly suits the older children.

**Eliademy**

Eliademy is one of the free tool available to create eLearning tutorials. In this tool like in most of the tools basic image, text, sound can easily be added. Here you can create a quiz but the choices are limited to true or false and short answer questions. The good feature is after each question short feedback is given for the students even though the right answer is chosen. This helps when the child guesses the answer and get it correct and the feedback is beneficial to understand the correct answer. I felt this software is not suitable for key stage 1 children as this software do not support activity with drag and drop option.

**Microsoft PowerPoint 2016**

It is a very easy to use tool and I am familiar with most of the elements of PowerPoint. The tutorial I am going to create is with the images, text, and sound which are essential. The images in PowerPoint can be easily added to the slide, cropped and resized and positioned. The shapes and text colour can be easily applied. Using the controls of the developer option of the menu bar the activeX controls like label, textbox, images etc. can be added to the activity and by adding minimum code, the drag and drop activity can be converted to interactive. But the problem was the product to be presented should be either executable file or webpage, which option was not available on the PowerPoint.

## Articulate 360

Articulate 360 is one of the commercial software which has many built in programs based on user requirements. I have registered and downloaded and installed Articulate Storyline software which is a one-month trial based. It resembled a lot to the Microsoft PowerPoint and I created few slides which is very user friendly and easy to use. It has the capability to insert images, can record sound within the software and apply, can type text and various shapes. There are multiple options to create quiz. As per my idea of having the drag and drop activity in the course, there was drag and drop quiz but I found it quite easy to use. It is a standalone tool comprising of all the capabilities needed for most of the eLearning courses. One of the good feature is after publishing can be viewed on any devices as the software is responsive.

## Final Justification

After carefully reviewing various eLearning tools I have chosen Articulate storyline as my eLearning tool. It has all the functionality I need to create the course content and the interactive activity. As I got used to the software I found all the features available in PowerPoint were available in Articulate storyline and the quiz was very easy to create without any code and the tutorial can be easily published and which can be viewed in any devices as the output is responsive so I chose Articulate storyline as my final choice. The features I was looking for are to add images, text, sound and drag and drop activity and all these features are available in Articulate storyline.

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