

The Principles Adopted In Designing the Webcomics to Assist Lower Secondary Students with Reading Comprehension

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DOI Link: <http://dx.doi.org/10.6007/IJARBSS/v6-i11/2458>

Published Date: 25 November 2016

Abstract

The primary objective of this study is to highlight the designing of reading instruction specifically the web comics to assist students in understanding a text read. This is because the current practice in the teaching of reading comprehension focuses towards reading texts merely from the text books provided in the form of text and inadequate vocabulary of the students' results in incapability of comprehending the particular text. Teachers need to be creative in designing reading instructions to be utilized in the reading classes to assist the average performance students to understand a text read. The webcomics are hoped to enhance the understanding of the text through the features of webcomics present in the text which represent the text including the vocabulary present. This paper presents the phases adopted in designing of webcomics to be used in reading comprehension classes.

Keywords: Web Comics, Secondary Students, Reading Comprehension

1.0 Introduction

Reading comprehension has constantly been emphasized as a component in the Malaysian English Language public examinations and in the teaching and learning of the language and hence makes it vital in the Malaysian English classrooms. Limited mastery of the English Language contributes to problems in comprehending a text read in the reading lessons in the classrooms. This limited mastery of the English Language also contributes to problems in comprehending a text read in the reading lessons in the classrooms and produce future generation with poor proficiency. It has been highlighted that poor English proficiency among fresh graduates is one of the most crucial issues faced by the Malaysian employers since 2006 and has been constantly ranked as one of the top five issues that needs to be addressed (*Preliminary Report Malaysia Education Blueprint 2013-2025*, 2013). Sam and Rajan (2013) have elaborated that students may be good in reading but face difficulties in understanding the theme of the text read. When students read a text given by the teacher, they might be able to read and pronounce the words with correct pronunciation and read with correct intonation but they are not capable to comprehend the text read. As an evident of this

matter, Sabbah, Masood, & Iranmanesh (2013) discovered that the most difficulty faced by year 5 students who participated in a research administered in the northern part of Malaysia, is comprehending the English text read. This also occurs among the adolescents. Even though majority of adolescents are able to read the words in their text, they are found to face difficulties in understanding a text read (Brozo and Simpson, 2003) .

Reading comprehension is often defined as a set of knowledge through the interactions among the author's intentions, content of the text, the purpose of the reader and the context of the interaction (Paris and Hamilton, 2009). Reading comprehension, as perceived by Stahl and Hiebert (2005), is a set of interacting processes and word recognition influences the processes. According to Van Der Schoot, Vasbinder, Horsley, and Van Lieshout, (2008), comprehension is the designing of meaning-based and comprehensible representations of a text. To comprehend a text, a reader needs to integrate meanings conveyed across the sentences, use prior knowledge, make inferences, identify text structure apart from the authors' goal (Grasser, 2015) as cited by Kendeou, McMaster, & Christ (2016). In addition, it is also a fact that an important element in learning of any language including English comprehends of the text or materials used in the classroom. Hence, comprehension is vital in the English reading classrooms if the purpose of reading is to be attained.

Referring to the current practice, the communicative method is employed in school in English lessons and the materials used in the classroom by the teachers too have evolved according to the present practice. The advent in the technology too has contributed to the transformation of teaching aids. Many teaching aids are utilizing the latest technology such as the internet, website, software and others pertaining to the digital world. The aim of this transformation is to enhance the mastery of the language including comprehension of the gist of the lessons taught in the English classroom. Materials used in the classroom will have impact through materials portraying novelty, variety, attractive presentations, interesting topics and illustrations (Tomlinson, 1998). Relatively, illustrations in materials is believed to facilitate comprehension because it is easier to process (Gyselinck, Jamet, and Dubois, 2008).

2.0 The role of vocabulary and illustrations in reading comprehension

Vocabulary should be considered as an important element in fostering comprehension. A reader needs to possess a significant level of vocabulary knowledge to enable them to comprehend the meanings conveyed (Butler-Pascoe and Wiburg, 2003) and vocabulary skills plays prominent role in reading comprehension (Olinghouse & Leaird, 2009; Olinghouse & Wilson, 2013) as cited in Binder, Cote, Lee, Bessette, & Vu (2016). In order to achieve comprehension which is the prime goal of reading, students must possess appropriate word knowledge or vocabulary (Mohd Sidek, 2008). Hence, comprehension is influenced by understanding of words and their meanings. Moreover, vocabulary is conceptualized as a part of language comprehension (Adlof, Perfetti, and Catts, 2011) which means it has vital role in comprehension.

Comprehension of a text does not merely occur in isolation but as explained by Verhoeven and Perfetti (2008) is blended with the use of variety information sources which includes linguistic information and graphic elements. However, comprehension would only occur if the information and graphic elements stated are relevant. They should not be provided excessively without any functions contributing to the comprehension of the text.

A study conducted by Abraham (2007) on the effects of multimedia glosses on vocabulary and comprehension found that the use of multimedia can increase the performance in the vocabulary test. Studies on reading comprehension have also looked at the importance of vocabulary in reading comprehension. Research conducted on the second language learner specifically discovered that students fail to comprehend certain words or express concepts although these could be successfully accomplished in their mother tongue (Reed, 2000). Through studies conducted, some students were found to have accurate pronunciation of words but fail to comprehend their meaning. This is also admitted by Quirk and Beem (2012) as cited in Pang (2013). They stated that students fail to comprehend meanings of words even though they can pronounce them excellently. This can lead to failure in understanding the text given.

Hence, vocabulary knowledge to certain extent should enable a reader to understand a text read and the interpretation of vocabulary can be attained through explanation of the words orally, in written form or even in the form of pictures and illustrations. Therefore, reading materials presented should be transformed to cater to the expectations of present generation of technology. This in hope would assist students to successfully comprehend meanings established in the text. Reading comprehension does not occur in isolation but through the interaction of the three elements which are the reader, the text and the activity. Students comprehend texts by acquiring meaning of words read, confirming meaning, creating meaning and visualizing it through the three elements mentioned earlier. Students' ability to create mental image of what is read enhances comprehension (Pressley, 2002) as cited by Dymock and Nicholson (2010). Hence diagrams, visuals or illustrations help students to visualize the vocabulary and sentences in the text because while reading they depend on visual cues to aid with comprehension.

Several researchers such as Alesandrini and Rigney (1981), Levie and Lentz (1982), Levin, Anglin, and Carney (1987) have suggested that visuals present in a text improve comprehension due to the visuals' four major functions in reading. First, they substantially overlap content of the text and secondly, they improve the coherence of the text. They also provide more concrete information for the readers and finally, visuals also develop the readers' interest in the text read. The combined effect of these four functions of visuals facilitates the comprehension of text (Pan and Pan, 2009). This fact has also been admitted by Rieber (1995) as cited in Alessi and Trollip (2001). Integration of illustration in a text will lead to a better comprehension of the text read especially for the poor comprehending group students. When reading a text, less proficient readers would face difficulties in visualizing the semantic content while processing the print simultaneously (Sadoski and Paivio, 2004). The illustrations support the corresponding text if the illustrations are related to the text and represent the text read.

A study conducted by Lamanno (2007) has indicated that utilizing illustration and text in the form of graphic novel as reading instruction on poor reading adolescents has revealed that the use of the graphic novel which contains illustration and text could improve their scores in reading comprehension. This is because features of the text or reading instruction influence the comprehension transactions. The content of the reading instruction, its quality and its difficulty would contribute to the meaning making process (Pardo, 2004). In addition, one of the related study was conducted to investigate the use of pictures to foster

comprehension by answering comprehension questions, as explained by Baggett and Graesser (1995) as cited in Otero, A. Leon, and C. Graesser (2002). Similarly, Yoshii and Flaitz (2002) found that learners using a combination of text and pictures performed significantly better compared to groups using pictorial annotations or only text annotations (Abraham, 2007). Pictures and words contain unique and individual attributes as methods of delivering information since pictures are representations of things which are concrete (Paige Free, 2004). Furthermore, illustrations can enhance and expand processing of semantic through organization and connections of text elements. This leads to bringing together words and sentences in pictures (Dean and Kulhavy, 1981; Koran and Koran, 1980; Levin, Anglin, and Carney, 1987; Tarquin and Walker, 1999) as cited in Paige Free (2004). Based on these findings, the study adopted the use of webcomics as the reading instructions which are text combined with illustrations and published on the website to be accessed through the internet.

The rise of multimedia representational forms of instructional materials has raised questions on the graphic taxonomies regarding the representation form and the layout of these materials. The problems regarding these are yet to be fully solved (Bateman, Delin, and Henschel, 2002; Bateman, Kamps, Kleinz, and Reichenberger) as cited in May (2006). Michael Twyman (1979) as cited in May (2006) proposed a taxonomy of graphics in design consisting of two dimensions which are configuration and mode of symbolization. He focused on eye movements in reading static graphics while Lohse, Walker, et al. (1991) and Lohse, Biolsi, et al (1994) as cited in May (2006) highlighted folk taxonomies originated from differences perceived among representations.

However in this study, the researcher adapted (Cohn, 2011)'s, (Cohn, 2013a) and Guigar, Kellett, Kurtz, and Straub(2008) 's features , to design the webcomics. The features of webcomics used in this study to design the webcomics are conceptual structure consisting of text and images, navigational component inclusive of panels, position of the speech bubbles, position of the narrative boxes and directionality (Cohn, 2011). While event structure comprising of arrangement and indexical lines (Cohn, 2013a) include flow of images and panels. The next feature included in the narrative structure is text in the narrative boxes and images in the background. Other constructs are mode, format and language (Guigar et al., 2008). Format includes other features of webcomics such as the lettering, the gutter, legibility, size and spacing. Mode is defined by the colour of the images and background pictures. The other features included in mode are the language used in the webcomics.

Webcomics' characteristics are difficult to define in isolation but some conventions of the webcomics are similar to graphic novels. Added with the digital comic design, the researcher has combined and blended both to explain the elements of webcomics. Further refinement aggregated the features of the webcomics as proposed subsequently. They are text and images, panels, speech bubbles, narrative boxes, directionality, arrangement, lettering, gutter, legibility, size, spacing, and colour and which have been classified into respective constructs utilized to design the webcomics.

3.0 Features of Webcomics

Text and images or visuals are the vital structure that exists in a webcomics and specifically the images that have been adapted to the webcomics are in the form of 'spatial juxtaposition' (Wright, 2006). Explicitly it allows the readers to fill the gap of time and motion which is

vacant in sequences depicted. However the text adapted into webcomics in this study do portray this feature since they are in the form of juxtaposition of images. The presence of images in the webcomics alleviates the burden of visualizing characters or elements in a text for a reader. Comprehension of a text of a proficient reader is enhanced by visualizing the characters in the text. Conversely it is difficult for some readers of text to visualize and need an anchor to assist them to visualize (Thompson, 2008). Assistance is needed prominently for the less proficient readers. Images present in the webcomics also provide meanings and association to the vocabulary present in the panels in the webcomics. This is due to the fact that images or pictures found in the webcomics exhibit the visual representations of the words present in the text.

The next feature is panels which are sometimes known as frames. Panels substitute paragraphing in the traditional text and indicate the progression of the story or embodying of a non-narrative text through a series of panels. They could also represent an action or changes occurred through the shift between the juxtaposed panels (Cohn, 2013b) and establish association between the image and the space around it (Shapiro, 1985) as cited in Stoemer (2009). Imagery is represented through two entities in panels which are active entities expressed through the panels sequence and contextual entities which is the inactive entities. However these panels are positioned as linked pieces, with consideration to the placement, size (Thompson, 2008) and visual to establish a story or message to be conveyed. Although the normal shape of panels is square and rectangle, they are always available for creative amendments as long as the meaning of the text is conveyed. The webcomics in this study adhere to the normal convention of the panels which are square or rectangle as mentioned.

The third feature is the speech bubbles which refer to the balloon type illustration positioned in the comics or even webcomics in order to indicate dialogues including the characters' thoughts. This is the most prominent feature in the comics and webcomics. This has also been stressed by Yunus et al.(2012) that one of the balloons or the speech bubbles is one of the dominant characteristics in comics. The variedness of the bubbles could be observed when they indicate the different mood or meaning in the text. The shape of the speech bubble is accordance to the message to be conveyed including the emotions experienced. For instance the frightened character is represented by a wavy speech bubble and a jagged-edge speech bubble indicates the electronic voice of a robot (Thompson, 2008) . The next feature, the narrative boxes are boxes that are usually located at the top or bottom of the panels and execute many functions. They can also be utilized to indicate the narrator's voice in the story apart from the third person's voice narration The position of the narrative boxes represents the authorial voice (Newcomb, 2011). The authorial voice is normally reflected through the voice of narrator or the main character. Since voices are symbolized through the visual representation, the position of the narrative boxes is vital to distinguish the author's voice. Narrative boxes could also indicate changes in the time line or the setting such as "the next day in Kuala Lumpur". The role of narrative boxes is also seen in summarizing the panels in the webcomics.

The direction of the way the narrative boxes and bubble speeches are read provides meaning to the webcomics. Nevertheless, they are read from left to right and top to bottom

in the webcomics similar to text without illustration but confusion or detachment of meaning and flow of the text could occur if the reader takes the wrong sequence in reading (Thompson, 2008). Hence, this feature is known as directionality and arrangement is also another feature of webcomics. It gives an overall look to the visual present in the webcomics. It establishes a pattern to be followed by the readers (Smaldino, Lowther, and Russel, 2012) in order to ensure the information conveyed in the webcomics are in an organized form.

Lettering in the webcomics could evoke mood or intonation in reading through the variation accustomed to the letterings. For instance words to be stressed could be bolded or actions displayed by the characters such as whispering or shouting could be distinguished through the utilization of the different mode of lettering or fonts. Even the size of the letterings could shed meanings of emotions in the words used. Varieties of lettering techniques are available inclusive of freehand writing (Smaldino et al., 2012). Hence it is also a feature of webcomics taken into consideration. Gutter operates as the separating element between the panels to distinguish a scene from another between the panels. Gutter, another feature of the webcomics, is defined as the blank space that separates each panel (Yunus et al., 2012) in the webcomics. The space between the frames contributes in the building of the graphic through which stories are constructed and is closely related to the frames. Kress & Van Leewen (2006) as cited by Stoemer (2009) revealed that a comic is identified as a type of visual storytelling through the shapes and the spatial relations portrayed by the frames and the gutter.

In order for readers to be able to see the images or visuals, they need to be legible. Some considerations to be observed in order to maintain legibility is the image size, type of font, and contrast of objects to avoid misinterpretation. These are classified as the legibility in webcomics. It also focused on the font size used and the size of objects displayed in the characters or context depicted by the webcomics.

The size of the visual presented should be appropriate for the students in order to facilitate understanding of information through the images (Smaldino et al., 2012). The size of letters or the font should assist in reading of the words and sentences present in the webcomics. Spacing is also included as the features of webcomics which refers to spacing between characters in the text or the written display in the webcomics. Spacing between characters at most times are normal but it can be condensed or expanded accordingly to the need of the text presented. Spacing could also refer to the spacing of the panels. For instance the notion of speed and action can be represented by a series of narrow panels (Frey and Fisher, 2010). The next feature is the colour.

The harmoniousness of colours chosen to be utilized should be one of the main considerations in webcomics if they are to be coloured. There are complimentary colours which consist of red and green or yellow and violet which harmonize and integrate colours provided they are not juxtaposed (Smaldino et al., 2012). This is due to the effect of letters being submerged and to avoid unpleasant vibrating effects. Similarly, analog colours for instance blue-green, blue and blue-violet could also evoke attractive combinations. These are the features utilized in designing the webcomics for the study.

4.0 Steps in Designing of the Webcomics

The webcomics were constructed in two phases. The first one is the illustration or the comic sketched and the second phase was the uploading of the comic onto the website. Both the phases are illustrated in figure 1.0 and figure 1.1 below.

The first stage is illustration of the characters to be used in the webcomics. The characters to be drawn are decided based on the text passage to be converted to the webcomics. The characters are sketched using a 2B pencil to suit the dialogues present and the content highlighted in the text. The next stage is re-sketching the characters using software called adobe illustrator. This is to enable the illustrations to be digitalized. The third stage is to colour the whole illustration using adobe photo shop. During this stage, the dialogues are inserted and the background pictures are also included. Next, the illustrations are arranged according to the story or narration. Finally the comic is saved in PSD form to enable any editing to be done later if needed. The comic is now ready for the next phase which is uploading it onto the website.

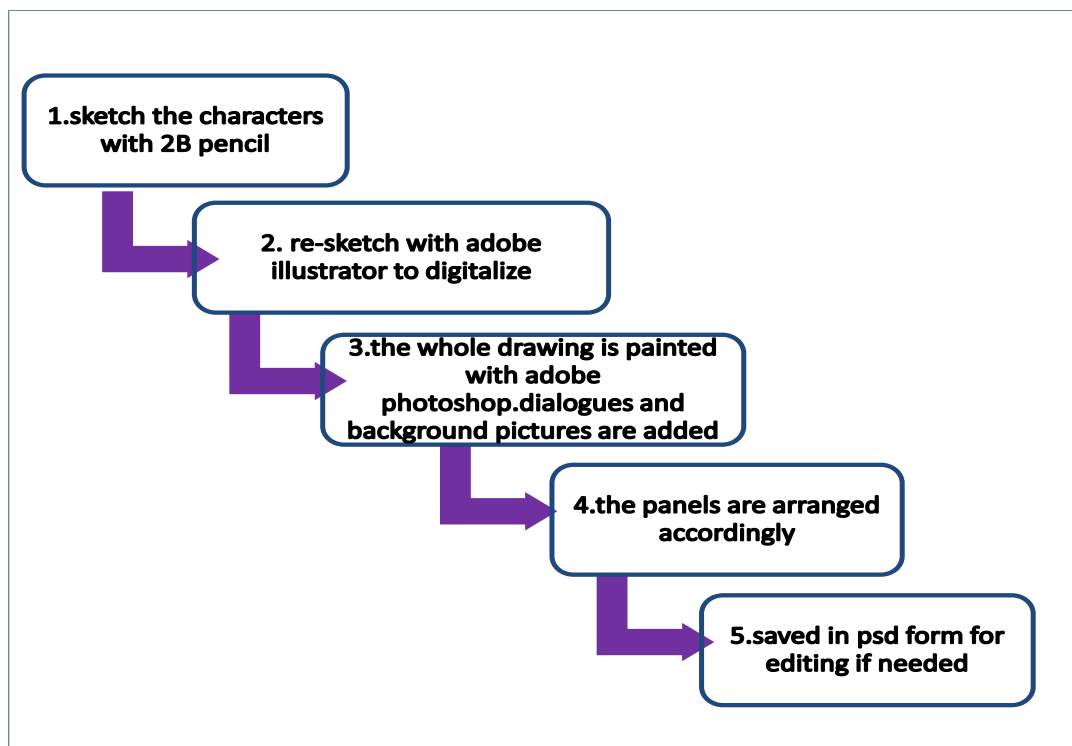


Figure 1. Phase 1 of Webcomics Designing

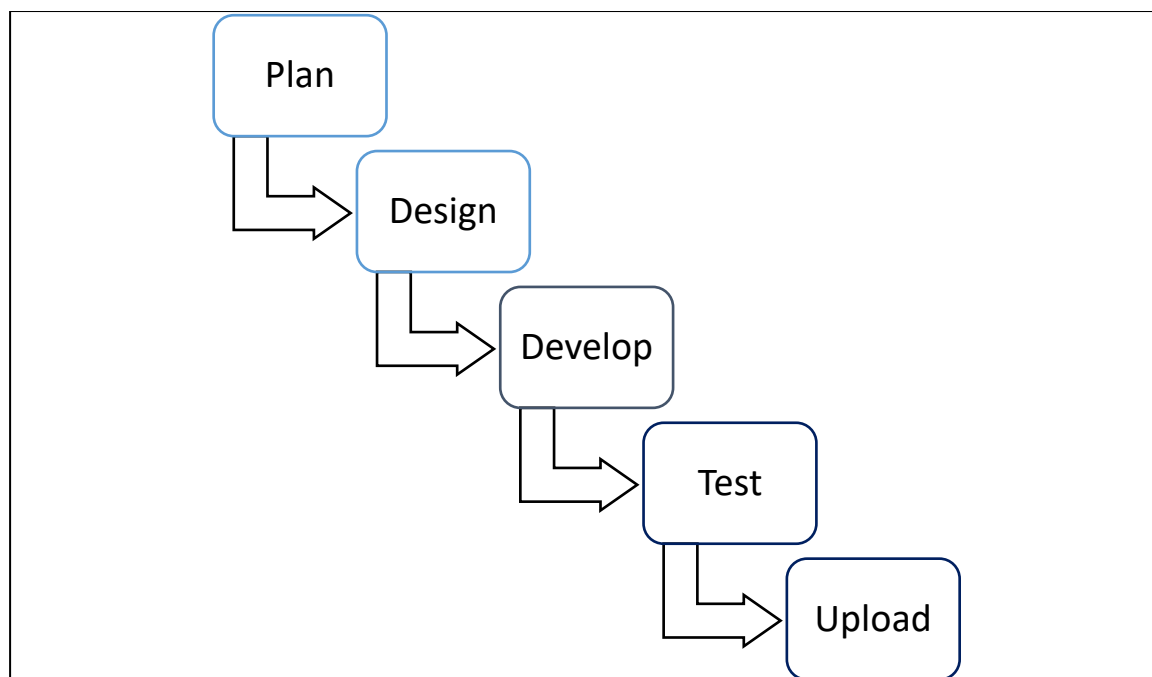


Figure 2. Phase 2 in uploading of the comics

According to Figure 2, the first stage is to plan. In this phase, the website's functional requirements are gathered and identified. Functional requirements describe what a website should do. The identified requirements are used as the main reference through all the website development process. The requirements are a list of necessary functions, capabilities, or characteristics related to the designing of the website and the plans for creating it. The materials and the content to be uploaded are also identified in this phase. In this study, the materials and the content are the webcomics. These also include the instructions or extra notes or description to be added in the website.

Next is the stage of designing whereby the identified requirements are designed based on the identified requirements? This includes designing the page layout, user interface and web elements such as buttons, and icons. In the website layout, one can find the website layout items which are the menu, login form, webcomics presentation that include navigation, website template and theme colour. In this stage, login module to grant user to access the website will be designed. The comic module which is responsible for the webcomics presentation is also designed together with the website architecture. Then suitable programming language and the webserver for webcomics is developed. The programming language used is PHP and the webserver used is Apache.

Proper place is determined to the comic navigation arrows. Some comics have them below, some above, some to the left and some to the right. It's usually easy to find them if they're the expected arrows. However, for the comics designed in this study, the navigation arrow is positioned at the bottom of the page. The following stage is the development stage. At this stage, the process of converting the design made earlier into the actual website is done. Coding, which is the process of writing a set of computer instruction to make a website work is conducted during this stage. The process of converting the design into website

involves programming skills whereby a set of computer instruction skill is written to make a website work.

After the website is designed it is checked and tested to ensure that all the webcomics requirements have been met as planned in the planning stage, the website is working perfectly and is free of bug. The final stage is, after the website is tested and confirmed that it's working as required and free of bug, and then the website will be uploaded into webhosting and tested again to make sure that the website runs smoothly on the production environment.

In completion of this stage, the webcomics could be accessed on the website provided one knows the address of the website. The researcher has placed security measures that only those with the id and password would be able to access this website. The reason is to hinder the participants of the study from being able to access the website before the lessons using webcomics are carried out. Each webcomics has different id and password which are only known to the researcher at present. Although the webcomics have been uploaded on the website, amendments and enhancements could still be done to the content of the website for instance, webcomics could be added or removed, the colours of the website could be made brighter and even passwords could be changed.

The layout of the website is shown in Figure 3 below, while the lay out of the screen of the webcomics are shown in Figure 4 and 5.

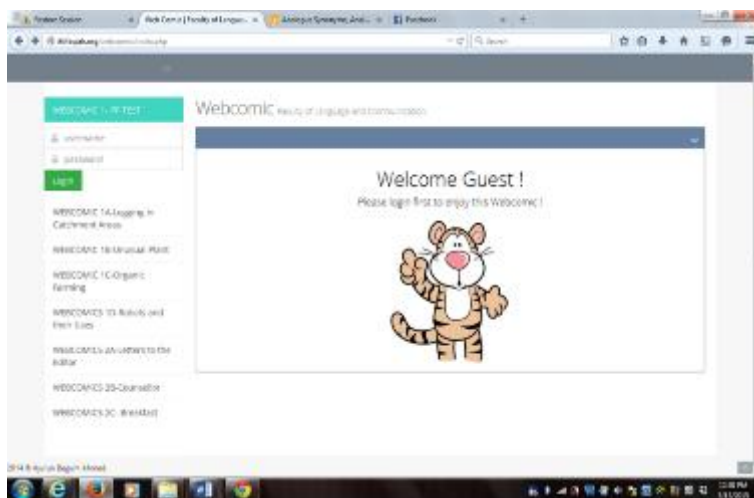


Figure 3. Layout of the website

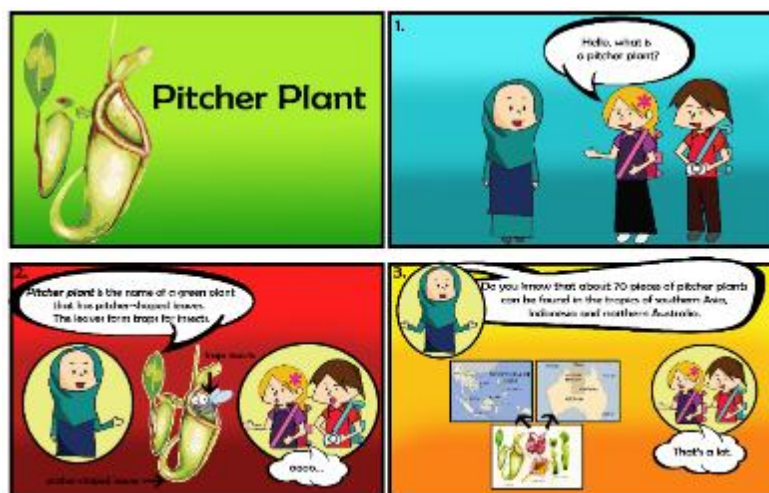


Figure 4. The first screen of webcomics constructed for the students

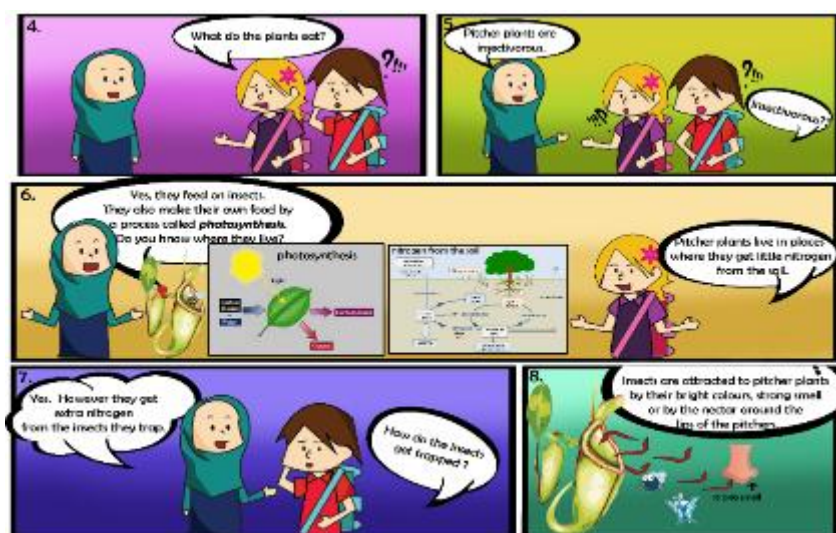


Figure 5. The second screen for students to view

5.0 Conclusion

Focusing on the students, the designing and the utilization of webcomics contributes to the types of materials that can be used to facilitate students' comprehension which is through the text that is presented in the form of illustrations and text. The picture clues presented, add to the elaboration of a context or a word and provides more information to the reader. The illustrations shall increase the understanding of the text read and students do not need to rely on the text alone to comprehend a text. It will also increase students' interest towards reading because reading something that is perceived difficult to comprehend will demotivate a reader from continuing reading a text. Illustrations provided in the text will also capture the interests of the students because they always trigger the curiosity of a reader. These kind of texts would enrich the types of reading materials that could be provided to the students in order to enhance their comprehension of a text read. Students would also be exposed to variety types of teaching materials in their reading comprehension lessons.

As for teachers, the decision to construct and utilize the webcomics contribute to the sharing of ideas on materials that can be used by the teachers to teach English specifically

comprehension using comics in the form of webcomics. It will also utilize the latest technologies that play a prominent role in teenagers' lives since they spend a lot of time in front of the internet including when reading comics because it was found that students preferred to read comics compared to books during their leisure time. Using of the webcomics in the second language learning can also add to the collection of teaching materials to be used by teachers to inculcate interest in reading lessons. Interest in reading lessons could be attained by varying the strategies and techniques in teaching reading comprehension. It shall assist teachers in becoming creative and innovative in seeking for strategies to teach reading comprehension effectively.

Curriculum developers would also benefit through the idea of including webcomics in the curriculum to ensure a rich and accommodating curriculum to English learners in school particularly the form two students in their reading lessons. The curriculum developed may have space for enhancement through the findings of the study on the use of webcomics for reading comprehension. It could also contribute ideas to curriculum developers on ways to develop a more interesting curriculum.

Additionally, with the rapid development of technology teacher educators too need to be always vigilant especially in the respective fields of their expertise. This is because teacher educators play an important role in moulding future teachers to be a great teachers who can function efficiently in the educational system to enhance the quality of teaching and learning, particularly as English Language teachers. Teacher educators need to guide novice teachers to employ effective and alternative materials to make reading comprehension lessons more meaningful. This could be achieved when students understand the text read in comprehension lessons.

Comprehension is vital in reading although students with low and average proficiency face difficulties in comprehending texts they read in the classrooms specifically. There is a need to assist these students in order to enrich their vocabulary to improve the understanding of a text. In long run, this would also add to the collection of familiar words in their memory. To accomplish this, webcomics could be utilized in the classroom as reading instruction. However, the designing should be appropriate for the targeted group of students in the reading classrooms.

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