Animated Images and Vocabulary Development Among Lower Primary Learners

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Abstract: Vocabulary development is a foundational literacy skill in the academic achievement for infant learners. In order to attain other learning areas, a pupil should have mastered the key aspects of vocabulary. Nonetheless, today the quality of vocabulary development among children in Uganda is still wanting. Some schools have therefore begun to adopt use of animated images to improve on the children's ability to develop vocabulary. This study was carried out to examine the impact of animated images in managing vocabulary development among lower primary learners. The study was confined to pupils from Primary One, and followed a quantitative approach, with a quasi-experimental design. Two schools were purposively selected basing on their background in use of animated images. One hundred and sixty (160) participants, were randomly sampled where 80 were for the control group and 80 for the experimental group. Data revealed that there was a significant difference between the scores of the control and experimental groups. In conclusion, vocabulary registered a difference in performance basing on the fact that there was a sense of audio presentations that were repetitive. This therefore implies that pupils were able to perform better after being exposed to lessons of vocabulary development with animations. The study recommends that during vocabulary development lessons, animated images are designed in an accent and pronunciations learners are familiar with, which may have a bigger impact on the learners' results.

Keywords: Animated Images, Vocabulary, Primary, Visual Presentations, Audio Sounds

1. Introduction

Animated images have enormous opportunities that teachers can exploit to enhance learning of vocabulary in lower primary (i.e. classes 1 to 4). In Uganda, the use of animated images was adopted in the education sector in 2008. However, this was done for the higher level of the education system. The lower primary sector has been using the resources but without formalization [9]. However, as use of different features of animated images has taken root in the sector, there is a need to explore the relationship between using them and the development of vocabulary.

In animated images, the use of visual presentations and audio sounds is tailored to the audiences. This plays a role in the way learners comprehend a text or a clip. Presentation of image effects is a concept whose purpose is to direct learners' attention and make clear what is of great importance in the scene [7]. It aims at making the presentation of an idea completely and unmistakably understood, whether that idea is in action, personality or mood. Audio-visual education is instruction where particular attention is paid to the audio and visual presentation of the material, with the goal of improving comprehension and retention [13].

Using animated images to manage the teaching of vocabulary requires the teacher to have solid drawings that are attractive. Animated images are presented in form of 'squash and stretch', showing motion so that they do not change the form of presentation and make the presentation continuous. One thing is that the teacher should have the skill of drawing for purposes of neat, sticklike and attractive visuals that will help the learner to take time in reading the pictures and construct his own understanding [11]. This enables a child to easily comprehend abstract ideas that could be difficult to understand. It also enriches the reader's

experience by developing imagination, self-reliance and cognition, which facilitate confidence and, therefore, vocabulary.

Movement of the human body and other objects in animated images need time to accelerate and slow down. For this reason, animation looks more realistic if it has more drawings at the beginning and at the end of an action, emphasizing extreme poses and fewer in the middle [7]. This principle goes for characters moving between two extreme poses such as sitting down and standing up but also for inanimate, moving objects like a bouncing ball. It is attractive in nature and holds a reader's attention with the desire to see what happens next which leads to retention of knowledge.

Repetition in audio sounds is another concept of animation that is very important and relevant to vocabulary development because it presents sounds in a repetitive and interesting form for instance rhymes and tongue twisters that help a child learn sounds and blends. To boost reading in a learner, it needs to be repetitive and involve supernatural or surreal alterations in the physical features [2]. Audio effects in a cartoon character correspond to what would be called charisma in an actor [11]. A character that is appealing in picture and sound makes a viewer feel a sense of identification. The viewer eventually feels the urge to imitate what has been presented in the animation through pronunciations and punctuation hence fluency. This helps the character to easily connect with the learners. The character is usually likeable particularly baby-like to be effective for the lower primary classes age group [2]. With all the above concepts of animation in play, a child is likely to be motivated to read a story with ease and eventually build a lifelong skill of reading that will enhance vocabulary achievement.

Vocabulary, as an aspect of reading development, is crucial. Children use words to express common concepts and use these to talk about life experiences across contexts. Children also use oral language as they begin to write and explain acquired knowledge. Vocabulary development allows a child transfer the understanding of written text to oral language [3]. Vocabulary development is a key competence that enables lower primary learners to devote their cognitive effort to comprehension and enjoyment of reading. Vocabulary development emphasizes decoding or punctuation and natural phasing for mainly struggling readers which are made possible through necessary practice [5] which is also applied in traditional methods of teaching though the physical presence of a teacher or an adult is necessary.

The context in animated images makes vocabulary development through motivation which explains why children who find reading laborious tend find it fun when watching animated images. It gives a teacher and a learner an option to use anywhere it is convenient. In today's digital world, research materials come in many forms [6]. Children will read many texts, but they also be listening carefully to music for lyrics, intonations and mood which is the context. They may also keep listening to interviews and other oral forms of storytelling or even conducting their own. As they listen to this information, especially content from primary sources or interviews, they need to become critical listeners to better evaluate point of view and personal perspectives. This is possible in other methods of teaching but time consuming and laborious. For a young learner to understand a text or picture well, presenting it in animated images form may make it easier.

Providing vocabulary development guidance in form of audios like combining text-to-speech, visuals and speech recognition helps a reader to realize what needs correction. This is through an electronic tutor where an animated agent interacts with a reader like a teacher. These programs have proven to be very helpful to both children and their teachers through providing the readers with word recognition and vocabulary development supports, then tutors or parents with monitoring information [10]. Given the limited supply of trained reading tutors and specialists who can provide a fluent oral model and one-on-one tutoring, the effectiveness of e-tutor is encouraging. Audio texts could be recorded by a tutor with the local accent which may enable a lower primary class pupil understand faster. E-tutors that have had interaction with the education system of Uganda would extensively benefit a learner in these classes. The context in which the vocabulary development supports are developed would meet the need that has proven challenging to the learners [1].

The developmental activities for literacy skills as indicated in the curriculum put emphasis on the use of traditional pedagogies and are silent on the use of ICT like Animated images yet when adopted it brought to teaching and learning a modern art of teaching. It is important to adopt animated images to supplement the traditional teaching and learning methods because learners' interest in modern technology is increasing day by day [15]. This study examines the use of animated images in the management of vocabulary development among Lower primary learners.

1.1. Problem Statement

Vocabulary development is a foundational literacy skill in the academic achievement of lower primary learners [12]. For an infant to excel in other learning areas, he/ she should have mastered the key aspects of vocabulary. Today the literacy levels and particularly the vocabulary development of children in Uganda are unsatisfactory. According to [14], for instance, only three out of ten pupils in primary level could read and comprehend an English story. This presents a gap in the literacy achievement of children at an early academic stage. As an avenue towards mitigation to the above challenge, some schools in Uganda have begun to adopt use of animated images to improve on the children's ability to develop vocabulary. Hitherto, however, quality information has not been generated on the impact of using the animated images on learning outcomes. The absence of this information as an important gap provides support why this study was conducted.

1.2. Purpose of the Study

The purpose of the study was to examine the impact of using animated images in the vocabulary development of lower primary learners.

1.3. Research Hypothesis

The study was guided by the hypothesis (H_o), that there is no statistically significant differences as ($\alpha \leq 0.05$) in the level of vocabulary development between the scores of the experimental group who learned using digital animation and the scores of the control group who learned the traditional way.

2. Methodology

2.1. Research Design

An experimental design was employed. Preference to experimental study was on premise that verification of the hypothesis that guided the study necessitated putting the participants to find the difference use of digital animation brought unto the learners.

2.2. Target Population

The study targeted a population of Primary One pupils. These were 200 learners from the two schools found in municipality locality, and had used both the animated images and the traditional approach to teach vocabulary development for the previous three years, for their infant classes.

2.3. Sampling Size and Sampling Techniques

The sampling technique at the level of schools was purposive, where particular characteristics of the population that were of interest to the researchers were focused on. In this case, these were two schools using both the traditional approaches and digital animation in teaching of vocabulary. The two schools each provided both the control and the experimental group. Learners were randomly sampled from each with 40 pupils for the control group and 40 pupils for the experimental group. The class academic progress records were also used, where pupils whose average scores were between 50% and 70% in previous successive vocabulary development tests were selected. This was to ensure similar levels of academic achievement among participants. The age variable of the sample was also controlled before the experiment, in that the participants were between the ages 5 and 7.

Table 1. Distribution of Sample according to the groups.

School	Control Group	Experimental Group	Total	Percentage
School X	40	40	80	50%
School Y	40	40	80	50%
Total	80	80	160	100%

2.4. Research Instruments and Data Quality

Tests were used as an assessment tool to collect data on the learners' vocabulary development. A pre-test was administered to both the experimental and the control groups. The purpose was to identify the two groups' level before starting the strategy and to compare results of the pre-test with the results of the post-test after the intervention. The tests were designed according to the general specifications of a valid test. The items were related to the purpose represented in testing the target learner's literacy skills of vocabulary. There was a consistency between the items of the test and the cognitive levels of Bloom's Taxonomy.

Pre-recorded audio texts by a teacher with the local accent were used to enable pupils to understand faster [16]. This was through an electronic tutor where an animated agent interacted with a reader like a teacher by combining text-to-speech, visuals and speech recognition. This tool provided the pupils with word recognition and vocabulary development supports. The content and contexts of the animated images were localized and developed in line with the curriculum, which learners could identify with [4].

Validity and Reliability

To ensure content validity index the researchers, after constructing test, they discussed the items with specialists in the area of digital animation and literacy. The items were revised in line with their suggestions. Two tests were piloted to a random sample of 30 pupils from an urban primary school that had used digital animation in vocabulary development lessons. The results were analyzed and Cronbach's alpha coefficient for the consistency of the tests was established. The items of the test were modified in the light of these results. Reliability was also ensured through avoiding participant bias where by the learners did not have an idea why they were being tested.

2.5. Data Collection Procedure

An appointment was made with the head teachers for the day when the tests would be done. The tests for specific literacy schools were done on different days as schedules were made by specific class teachers. The pre-tests and post tests for vocabulary development were done on the same day to ensure that the effect of the intervention is easily assessed. Each respondent was assured that the information provided was only for an academic purpose and confidentiality would be ensured by keeping the respondent's identity anonymous. Also, the conclusions of the study would be based on the data collected.

2.6. Data Processing and Analysis

The learners' scores on the test were entered for the two groups (i.e. experimental and control). Thereafter, the

significance of the difference between the two categories of scores was analyzed using t-test analysis. This was done at the level of confidence alpha=.05. The findings were presented on tables.

3. Findings

The hypothesis (H$_o$), that there is no statistically significant differences as ($\alpha\leq0.05$) (1) in the level of vocabulary development between the scores of the experimental group who learned using digital animation and the scores of the control group who learned the traditional way, was used for the study.

To test this hypothesis, the researcher used a Pearson correlation as the following table shows.

Group Statistics

Table 2. Findings for the Study Hypothesis.

	Group	N	Mean	Std. Deviation	Std. Error Mean
Vocabulary	.00	80	49.7375	5.81518	.65016
	1.00	80	52.7000	6.21635	.69501

Table 3. Findings for the Independent Samples Test.

		Levene's Test for Equality of Variances			
		F	Sig.	t	df
		Lower	Upper	Lower	Upper
Vocabulary	Equal variances assumed	.166	.684	-3.113	158
	Equal variances not assumed			-3.113	157.302

Table 3. Continued.

		t-test for Equality of Means				
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		Lower	Upper	Lower	Upper	Lower
Vocabulary	Equal variances assumed	.002	-2.96250	.95170	-4.84220	-1.08280
	Equal variances not assumed	.002	-2.96250	.95170	-4.84227	-1.08273

Mean differences=-1.51250 Standard deviation=5.81518 P- Value=0.002t-Value=-3.113.

The p-value of 0.002 shows that there is no statistically significant difference between the pre-test and post-test scores which rejects the null hypothesis stated in the study.

3.1. Discussion of Findings

The Mean differences of -1.51250 indicate that the animated images had a significant effect on the vocabulary development of the learners (Table 3). The peak value of 0.002 indicates that animated images had a significant effect on the acquired vocabulary development. The results of this study conform to the results of previous theoretical and empirical studies [8], which refer to Animated images as an invaluable innovation in the teaching and learning process in general. New vocabularies presented through the animated images were easily adopted by the learners because of the forms in which they were presented that is in both written and sound. It gave an opportunity for the learner to look and say, hear and re-say putting different senses of learning into use. The learners were able to listen and watch repetitively and imitate the audio pronunciation of words and also write.

3.2. Conclusion

Use of animated images is a modern strategy that is worth being used in teaching literacy. The technique can also be used to explain complex meaning and difficult terminology. Learners' ability to get the gist, the main idea and inference through using animation films allows them to achieve high results and scores. In addition, classroom environment changes from the monotonous traditional class to an interesting, active and warm classroom where there are mulit media technologies (such as LCD, computer and white board) is a motivation to the learners.

In conclusion, with the findings from this study it is imperative to note that the content and social cultural context of a learner contributes to the ability to develop vocabulary. It is therefore critical for any animated images teacher to put into consideration the audience that is supposed to use the animation beforehand. It is only through this that learners will benefit from the use of animated images in enhancing vocabulary development.

3.3. Recommendations

The study found out that learners easily improved in the vocabulary development and recommends that animated images are designed in an accent and pronunciations learners are familiar with which may have a bigger impact on the learners' results.

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