

Integration of Youtube Video Clips in Economics Education Programme: Perceptions from Bloemfontein, South Africa

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Abstract

The use of media in teaching and learning has widely received wide attention in the past few years. With the advent of internet in the 21st century, availability of educational media in higher education has been made accessible to institutions of higher learning. One of the most popular media is the use of YouTube video clips by university lecturers. Faced with challenges in student teachers' level of understanding in Economics, the use of YouTube video clips as a pedagogical tool to help students understand complex topics has become tantamount in the new age. This empirical study aimed at exploring the impact of integration of YouTube videos in Economics on student performance. A quantitative study was adopted, where questionnaires were distributed randomly to second year Bachelor of Education students majoring in Economics. Descriptive and correlation tests were used to analyse the findings. The findings indicated that there was significant positive correlation between the integration of Economics YouTube video clips in teaching and learning and improvement in academic performance. Comparing groups between males and females, male students showed greater interest in use of Economics YouTube video clips compared to female students in all the aspects measured. It is recommended that the use of Economics YouTube be encouraged to all the Economics students, with more emphasis on the female students.

Keywords: Economics, Educational Media, Higher education, South Africa, YouTube

INTRODUCTION

Education programs and teaching strategies require innovative ways of ensuring that students are motivated. The changing dynamics of the 21st century students, who are technologically savvy has made them lose interest in the conventional chalk and talk methods of instructional lessons (Zaidi, et al., 2018). This calls for adoption of new methods of lesson delivery by instructors to make learning more interesting, increasing retention rates of content as well as increasing the understanding of content taught (Gulley & Jackson, 2016). Research has shown that the use of new technologies increases students' motivation and facilitates the transmission of information to students (Brecht, 2012; Tang and Austin, 2009). According to Ruiji (2012), innovative teaching and learning strategies are important to ensure that the new generation of students are engaged and motivated and that presenting relevant information using appropriate media increases effectiveness of self-learning. Researchers argue that using web 2.0 technologies such as Facebook and YouTube videos in higher education helps to increase levels of student engagement through visual stimulation (Preston, 2010; Green et al, 2018). Burke et al (2009) adds by asserting that emerging technologies such as YouTube videos are important for achievement of better teaching and learning outcomes. In addition, YouTube is an effective way to help students retain their academic content as the new generation of students spend most of their time watching online videos (Duverger & Steffes, 2012).

According to Onger (2017), Economics students however face difficulties in learning and understanding of subject matter. As a result, Economics education

programs are faced with the challenge of coming up with innovative ways to increase students' motivation and understanding of the course as a result of difficulties experienced by Economics students in learning and understanding of the subject matter. In addition, research has shown that Economics students perform poorly due to improper teaching, reliance on traditional methods and lack of use of stimulating methods in teaching (Al-Bahrani & Patel, 2015). Recently, researchers have shown an increased interest in the use of YouTube videos in teaching and learning in higher education. For instance, research by Jackman and Roberts (2014) has shown that use of YouTube videos in psychology class has a positive impact on students understanding of concepts. Similarly, Zaidi et al, (2018) examined YouTube usage in ESL classrooms in Malaysia and established that that the videos have helped them complete their course assignments. In another study, Green et al (2018), illustrates how using training videos in health management in the USA leads to improvements in student's communication skills and teamwork.

However, much of the research on the use of YouTube as an effective media in teaching and learning up to now has been descriptive in nature and fails to show the relationships between use of YouTube video clips and the performance of students. Drawing on Mayer's (2001; 2008) cognitive theory of multimedia learning and a case study of a university of technology in South Africa, this study seeks to explore the relationships between the use of Economics YouTube videos and students' performance at a university in South Africa, an area that has been overlooked.

The study was guided by the following research questions.

1. What is the relationship between use of YouTube video clips in learning of Economics and improvement in marks?
2. What is the Relationship between effectiveness of Economics YouTube videos and improvement in performance?
3. What is the attitude for future use of Economics YouTube video clips in self-study?

THEORETICAL FOUNDATION AND RELATED LITERATURE

YouTube Videos and the Cognitive Theory of Multi-Media Learning

The cognitive theory of multimedia learning (CTML) draws from the work of Richard Mayer from 2001. The theory is based on propositions that effective learning is made possible through visualization and auditory projections (Mayer, 2005). The main argument is that people learn deeply from words and pictures, than from words alone. According to Woolfit (2015) words in this case could either be spoken or written, while the pictures could be in any form of graphical imagery such as animation and videos. The principal aim of multimedia instruction is for the learner to be able to build a coherent mental representation from the presented material, ultimately constructing new knowledge (Guo, Kim, & Rubin, 2014). The learner on the other hand should be more active for effective learning to take place, for construction of the new knowledge to take place (Clark & Mayer, 2011).

In addition, Woolfit (2015) argues that the content in YouTube videos should take into consideration cognitive factors of human learning and therefore the amount of information and in the proper mix of format should be considered by lecturers while presenting their lessons via the videos, for learning to be effective. Another element advocated through the CTML for learning to be effective is the length of the video-clips. According to Scholtz (2011), it is ideal for video clips to be short in order to be effective as they emphasize and stress on important and difficult aspects that require another voice than the lecturers. In addition, Green et al (2018) postulate that due to their nature of being shorter, YouTube videos tend to be better at presenting multiple perspectives. Other studies on the effectiveness of using short YouTube videos conducted by Hsin and Cigars (2013), Steffes and Duverger (2012), Bravo et al (2011) found out that they enhance students' satisfaction.

The Use of YouTube In Higher Education

Research into the use of YouTube in the classroom has become a popular discussion globally. Scholars from different countries have suggested that the use of multimedia in enhancing teaching and learning has become more prevalent lately. For instance, Afolabi and Akerele (2012), conducted a study on undergraduate students in Adeyemi college of Education on the use of YouTube

videos, and found out that the use of YouTube videos enhanced students' attitudes towards learning. Another study carried out in Banguet state university college of nursing in Trinidad, found out that the level of effectiveness of using videos to students learning is highly effective (Mendoza, Caranto, & David, 2015). In a study conducted in Trinidad and Tobago in Psychology found out YouTube videos have a positive impact in understanding and clarifying concepts taught (Jackman & Roberts, 2014). A study in Egypt on nursing students using video-based teaching results showed that video-based lectures offer more successes (El-Sayed & El-Sayed, 2013). Research in Philippines found out that video usage in lessons was effective, and that there was no significant difference in students' perceptions of the effectiveness of video presentations when grouped according to sex (Mendoza, Caranto, & David, 2015).

Consequently, research on the use of YouTube videos in Economics classes has elicited similar responses.

Research at a university in Australia found out that using multimedia in videos made by students in understanding economic concepts has positive benefits (Gerling, 2011). In addition, Roach (2014) conducted a study and found out that use of other methods such as flipped lesson using videos in a micro-economics course showed positive responses in relation to learning. The use of YouTube videos in teaching of Economics has pedagogical benefits. (Gerling, 2011) argues that YouTube videos help in filling in gaps left from studying using texts as it stimulates students' engagements and participation in lectures. This is supported by Mateer (2011) who argues that using media helps in stimulating interest in Economics as well as enhancing greater positive subject learning outcomes as well as illustrating concepts in a relevant manner.

Despite arguments for the use of YouTube videos in enhancing teaching and learning, research conducted by Becker (2004) and Jose (2017) demonstrates that Economics instructors prefer use of chalk and talk methods and that lecture method of instruction is still dominating the Economics classes. To circumvent this, William and Kauper (2014) advocate for teaching methods that use different teaching techniques as they lead to retention of content. Integration of YouTube in higher education creates opportunities for this. Zaidi et al (2018) emphasize the need for getting learners response on the use of YouTube in their classes by lecturers. The question remains as to whether there are any additional benefits to the use of YouTube videos, which justifies the use of YouTube videos in Economics classes and effects on academic performance.

RESEARCH METHODOLOGY

The study targeted Bachelor of Education students who were majoring in Economics. In order to elicit unbiased responses, the study adopted a quantitative method where a self-report questionnaire was administered to the

participants. The questionnaires were distributed randomly, to a class of 108 students. 62 responses were received.

PROCEDURE

The participants were shown approximately 10 YouTube videos related to concepts taught in the Economic lectures. The videos were carefully selected from the YouTube website sharing platform and were less than 10 minutes long. Each video related to Economic concepts, showing explanations on a wide variety of presentations, including animations. These videos were incorporated into the lecture presentation as well as uploaded to the e-learning tool (blackboard) where students could access them, through downloads, for their independent studying purposes. Discussions were ongoing in class, during lecture presentations while incorporating the videos. At the end of the semester, the questionnaire was administered to the students.

Questionnaire

The questionnaire comprised of closed ended questions and was divided into two main sections. Section A was on demographics and section B covered the main questions of the study made up of four-point Likert scale questions ranging from strongly disagree, disagree, agree to strongly agree. It consisted of 15 items corresponding to the main three aspects which required responses on the effects of use of YouTube video clips on students’ academic performance, effectiveness of the YouTube video clips and attitudes towards future use of YouTube video clips. The data was coded and analysed using statistical package for social sciences (SPSS) version 24. Both descriptive and inferential statistics were used as tools of evaluation in the data analysis.

RESULTS

Section A

This part contained information about the demographics of the students. The questions asked about gender, whether the students have access to internet at home, the usage of YouTube videos in Economics studies and what devices they use to access the videos.

Table 1. Gender of the respondents

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	29	46.8	46.8	46.8
Female	33	53.2	53.2	100.0
Total	62	100.0	100.0	

The results indicated that there were more females than males (53%) and (47%) respectively (table 1).

Table 2. Tool used to access YouTube videos

Device	Frequency	Percent	Valid Percent	Cumulative Percent
Own smartphone/tablet/iPad	39	62.9	62.9	62.9
Own laptop	10	16.1	16.1	79.0
University computer	13	21.0	21.0	100.0
Total	62	100.0	100.0	

Majority of the students’ access YouTube videos through own devices such as smartphones, tablets and iPads. This is an indication that university students have access to YouTube videos anywhere and anytime (Table 2).

Table 3. Use of YouTube videos to enhance understanding of Economics

Use of YouTube	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	39	62.9	62.9	62.9
No	23	37.1	37.1	100.0
Total	62	100.0	100.0	

Although majority indicated that they have used YouTube videos in their studies for Economics, a sizeable percentage (37%) indicated they do not use them to enhance their understanding of the subject (Table 3).

Table 4. Use of YouTube videos for other modules apart from Economics

Use of YouTube in other modules	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	51	82.3	82.3	82.3
No	11	17.7	17.7	100.0
Total	62	100.0	100.0	

Majority of the students indicated that they have used YouTube modules in other courses apart from Economics (Table 4)

Section B

This section required the respondents to indicate the effect of using YouTube videos in Economics lectures. The questions were based on four-point Likert scale items ranging from strongly disagree, disagree, agree and strongly agree. The results were analysed using means and frequencies for related questions.

Table 5. Understanding using YouTube videos

Item	N	Mean	Std dev
I understand the content better after watching Economics video clips	62	3.10	0.593
I take shorter time to understand using YouTube videos than the textbook	62	2.61	0.776
I take shorter time to understand using YouTube videos than the lecturer	62	2.50	0.864
The use of Economics video clips enables me to do my studies effectively	62	2.94	0.744
The use of Economics video clips has helped me to improve on my marks	62	2.81	0.865

The results indicated that students agreed that use of YouTube videos in their studies for Economics has helped them understand the content better. There was also agreement that the use of YouTube videos in studies has helped improve the marks of the students (Table 5). Further independent t tests showed that males scored higher means than females in their preference of use of YouTube videos in their studies (Table 6)

Table 6. Group Statistics-t test

Item	Gender	N	Mean	Std. Deviation
I understand better after watching Economics video clips	Male	29	3.14	.516
	Female	33	3.06	.659
The use of Economics video clips enables me to do my studies effectively	Male	29	3.10	.673
	Female	33	2.79	.781
The use of Economics video clips has helped me to improve on my marks	Male	29	3.00	.802
	Female	33	2.64	.895
I take shorter time to understand using YouTube videos than the textbook	Male	29	2.62	.862
	Female	33	2.61	.704
I take shorter time to understand using YouTube videos than the lecturer	Male	29	2.69	.967
	Female	33	2.33	.736
Studying Economics with the aid of YouTube videos is a good idea	Male	29	3.38	.494
	Female	33	3.12	.740
Economics YouTube video clips make it easier to study course content	Male	29	3.24	.577
	Female	33	3.03	.918
YouTube video clips make learning more fascinating	Male	29	3.24	.689
	Female	33	2.94	.827

Section C

This section required the respondents to indicate the effectiveness of using YouTube videos in Economics lectures, the questions were based on four-point Likert

scale items ranging from strongly disagree, disagree, agree and strongly agree. The results were analyzed using means.

Table 7. Effectiveness of YouTube videos

Item	N	Mean	Std dev
I enjoy watching Economics YouTube videos	62	2.94	0.597
Drawings, illustrations and graphs on the video clips are entertaining	62	3.10	0.740
Explanations on video clips are audible and clear	62	3.05	0.664
I lose interest when watching long Economics YouTube video clips	62	2.63	0.979
I view Economics YouTube video clips as more of entertainment than academic work	62	2.45	0.899

There was agreement that the quality of YouTube videos used was acceptable, and this was supported by the acceptance that majority enjoyed watching Economic YouTube videos. However, the students indicated that they do not enjoy watching long videos, as they seem to become boring (Table 7).

Section D

This section required the respondents to indicate their attitude towards using YouTube videos in future, the questions were based on four-point Likert scale items ranging from strongly disagree, disagree, agree and strongly agree. The results were analyzed using means.

Table 8. Future use of Economics YouTube videos

Item	N	Mean	Std dev
Studying Economics with the aid of YouTube videos is a good idea	62	3.24	0.685
Economics YouTube video clips make it easier to study course content	62	3.13	0.778
YouTube video clips make learning more fascinating	62	3.08	0.775
I intend on using Economics YouTube video clips more frequently in future	62	3.34	0.676
I am positive towards use of Economics YouTube video clips during personal study as well as lectures	62	3.34	0.676

There were positive responses on the students’ further intention of use of YouTube in future, as well as to enhance their understanding of the subject in person (Table 8).

Correlations

The Spearman’s Rank order correlation test was applied in order to identify the relationships between the variables (Table 9). The test was appropriate as it is a non-parametric test and the assumptions befitting the test were applicable. These relationships are based on the

research questions as well as the main objectives of the study.

Table 9. Spearman’s correlations matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	-														
2	.37**	-													
3	0,15	.28*	-												
4	.55**	.30*	.38**	-											
5	.53**	0,18	0,11	.58**	-										
6	.29*	0,10	0,21	.48**	.52**	-									
7	.45**	0,15	0,22	.59**	.44**	.39**	-								
8	0,09	.25*	0,02	-0,06	-0,17	-0,17	0,06	-							
9	0,14	0,18	0,24	0,12	0,14	0,24	0,22	0,10	-						
10	.50**	0,06	.33**	.72**	.63**	.36**	.44**	-0,23	-0,05	-					
11	.30*	0,16	.25*	.37**	.36**	.41**	.48**	-0,15	0,22	0,23	-				
12	.36**	0,10	0,04	.53**	.55**	.43**	.38**	-0,17	0,06	.48**	.46**	-			
13	.35**	-0,03	0,05	.55**	.51**	.41**	.61**	-0,17	0,11	.50**	.37**	.68**	-		
14	.25*	0,09	0,20	.41**	.29*	.37**	.39**	-0,24	-0,01	.38**	.56**	.62**	.55**	-	
15	0,22	0,17	0,23	.52**	.42**	.58**	.36**	-0,24	-0,04	.41**	.54**	.58**	.47**	.70**	-

Relationship between use of YouTube Videos and Improvements in Performance in Economics

The results indicated that there is a significant positive correlation between Q1 (I understand better after watching Economics YouTube videos) and Q5 (the use of Economics video clips has helped me to improve my marks) rs 60= 0.53, p<0.001.

Relationships between Effectiveness of YouTube Videos and Improvement Performance

There was significant relationship between Q4 (the use of economics YouTube videos enables me to do my studies effectively) and Q5 (the use of Economics video clips has helped me to improve my marks) rs 60= 0.72, p<0.001.

Results indicated that there was significant strong positive correlation between participants ratings of enjoyment in watching of economics YouTube videos and improvements on the Economics marks rs (60) = 0.63, p<0.001. Q12 (Economics YouTube videos make it easier to study course content) elicited a significant positive correlation with Q13(YouTube video clips make learning more fascinating) rs (60)=0.68,p<0.001.

Relationships between Attitudes for Future Use of Economics Youtube Video Clips in Self-Study

There was also strong significant relationship regarding the use of Economics YouTube videos more frequently for future use (Q14), with Q15 (intent to use Economics YouTube videos clips more frequently in future) rs 60= 0.69, p<0.001.

Q11 (Studying Economics with the aid of YouTube videos is a good idea) showed strong significant positive correlation with Q14 (I intend on using Economics YouTube videos more frequently in future) rs 60= 0.56,p<0.001 as well as Q15 (intent to use Economics YouTube videos clips more frequently in future) rs 60= 0.69,p<0.001.

Q12 (Economics YouTube video clips make it easier to study course content) related significantly positively with Q14 (intention on using economics video clips more frequently in future) rs 60=0.61, p<0.001.

DISCUSSION

The study aimed at finding out the impact of use of Economics YouTube videos on students’ performance at a university of technology in South Africa. The information was gathered from economics students in second year who are teacher trainees. YouTube video clips had been integrated in the lectures in order to augment the understanding of the content, as Economics is a subject that contains graphical illustrations. The research objectives were divided into three main questions.

Relationship between Use of Economics Youtube Video Clips and Improvement in Performance as a Result of Using Youtube Videos

The findings indicated that there is a positive relationship between understanding and improvement in performance. This concurs with Gerling (2011) who found out that use of videos has positive benefits. The results also showed that the use of YouTube videos in Economics makes it easier to understand course content as 82 % agreed while only 18% disagreed. YouTube use in other disciplines elicited same results as reported by Jackman and Roberts (2014) who found out that the use of YouTube videos has positive effect in understanding of concepts. This finding also supports the CTML that the use of multimedia enhances understanding and creation of new knowledge. The degree of agreement on aspects of understanding was also measured using t tests. The study found out that males agreed more than females on the level of understanding of using YouTube videos.

This contrasts with Mendoza’s (2015) study that found out that there were no significant differences based on sex. Another key finding showed that only 60% agreed that using YouTube videos makes it easier to understand than use of textbooks while 40% disagreed. This shows

that although videos may enhance teaching, use of traditional textbooks cannot be overlooked. Similarly, the results indicated that 525 agreed that they understand YouTube videos easier compared to the instructor while 485 disagreed. This difference is insignificant and therefore suggests that YouTube videos cannot be used without the lecturer instructions.

Universities are under intense pressure to change their operations, including increased enrolments to cater for more students, who are coming from a variety of different backgrounds. The use of information technology is greatly encouraged owing to the increased spending on IT infrastructure such as ease access to internet through WIFI connections as well as provision of laptops and computer laboratories. This is evident in the results which indicated that majority of the students have access to internet through own devices as well as university computers. These provide increased avenues for instructors to use new methods of teaching and learning.

Relationship between Effectiveness of Youtube Videos and Improvement in Performance

Effectiveness refers to aspects of the YouTube videos that create impact on the learning process. These features can be issues such as the length of the video or the balance of video and audio mix of the YouTube videos, including the type of content (Guo, Kim, & Rubin, 2014). According to Koumi (2014), if the video is designed poorly it will fail to be effective. The results indicated that that the YouTube videos are effective. This implies that they are effective for learning as they are pedagogically effective and designed for cognitive development to enhance learning (Koumi, 2013).

There was positive strong correlation between effectiveness of YouTube videos and academic performance. Results showed that the participants enjoyed watching YouTube videos (79% of participants agreed). This concurs with Mateer (2011) who says that media in economics helps in motivation. On the other hand, they indicated that they do not enjoy watching long YouTube video clips as a cumulative 56.5% agreed that they lose interest when watching long Economics video clips. This supports previous studies that short videos enhance students learning and that students prefer use of short videos (Hsin& Cigars 2013, Steffes and Duverger 2012, Bravo et al 2011, Sholtz 2011, Green et al, 2018). In addition, they agreed that drawings, illustrations and graphs on the video clips are entertaining. This supports the CTML which is based on the precinct that multimedia supports effective learning through visualization and projection and that people learn deeply from words and pictures than from words alone.

Attitude for Future use of Economics YouTube video Clips in Self-Study as Well as in Teaching

Results showed that the intentions for use of economics YouTube videos in future was positive in that they

indicated their interest in using of the videos in self-study as well as in lesson delivery, when they become teachers. This corroborates studies by Afolabi and Akerele (2012) that showed that students are interested in the use of engaging and varying videos to help their learning. YouTube, being one of the fast-expanding platforms those students have access to, can help in improving teaching and learning. With the availability of electronic devices and easy access to internet, this can be one of the easier ways of teaching students in schools.

The effectiveness of the YouTube videos in terms of ease of access and good mix of content and graphics has made the students motivated to use them in future. This concurs with Bates (2015) who argues that the new tools in multimedia learning have given the students more control over their learning. The fact that they have mobile devices and laptops that they can access, compounded by the free YouTube videos that are found online is an encouragement to the learners to use them whenever they want further understanding in their learning of Economics, including using them for other courses.

With the student teachers getting out of the higher education and going to the schools to teach the high school students, I believe the practice of integrating YouTube videos at university has given them more insight on to the new resources that they can as well implement in order to enhance teaching and learning at lower levels.

LIMITATIONS OF THE STUDY

The study was conducted only on Economics students from one university, making it a case study. The results may not be replicated to the whole of South Africa as the conditions may be unique in this institution.

CONCLUSIONS AND SUGGESTIONS FOR FUTURE WORK

This study identified relationships between the use of YouTube videos in teaching and learning in higher education. There was positive relationship between the use of YouTube and improvement in academic performance of Economics. There were also positive relationships between effective and well-designed video clips and improvement in performance. Lastly, the study found out that students intend on using YouTube videos in future for their own understanding as well as when they start practicing as teachers. It is suggested that use of YouTube videos in other disciplines to be encouraged. Future research should focus on in-depth study on the use of YouTube videoclips on individual topics in Economics.

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