

## YouTube Usage in the University Classroom: An Argument for its Pedagogical Benefits

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**Abstract**—The demands of teaching at the tertiary level are increasing all the time. YouTube is one of the new e-resources that can be used in contemporary tertiary education pedagogy. This paper is an account of YouTube usage in three psychology classes (adolescent, developmental, and educational psychology) at the University of Trinidad and Tobago. This paper reports on the usage of YouTube videos as means of summarising course content, clarifying complex concepts, concretising abstract ideas, modelling appropriate interventions, reinforcing domain-specific jargon, exploring vicarious laboratory experimentation, and capturing first-hand musings and expositions of historical and contemporary theorists in the field of psychology. A rationale for each particular use was also given as well as the real and potential benefits to modern students.

**Keywords**—YouTube usage, millennials, university teaching, subject content pedagogy.

### 1 Introduction

Advances in modern technology have created a plethora of digital devices and e-resources that are available to teachers at all levels. These technologies range from smart phones to e-boards and tablets. The choices are many and varied. YouTube, the popular video hosting website, is one of the contemporary e-resources that has multiple uses in the university classroom [1]. Although YouTube was launched just over a decade ago (2005), it is a critical force and model in the development of the borderless global educational community and the ever expanding world of the new digital media social order [2-3]. YouTube is invaluable in the education of millennials, digital natives and *Net-geners* because the technology that they are immersed in is being utilised to good effect [4].

Researchers argue that if YouTube were combined with *transformational pedagogy* it could prove the limitless power of the Internet for global democratisation [5]. Educators claim that the *Net-generation* or millennials expect that technology would be integrated in the university classroom thereby putting demands on teachers to play catch-up [6]. Millennials learn in different ways and one such way is viewing *how to* videos on YouTube [7]. Moreover, the use of Web 2.0 tools which include YouTube is one way that university lecturers can advance themselves to meet their tech savvy

students [6, 8]. This paper explores YouTube usage and its pedagogical benefits in psychology classes (namely: Psychology of Human Development and Adolescent Psychology) and other courses at university level.

## **2 Literature Review**

In the university classroom, YouTube fulfills many functions [9]. These include lecturer communication and management competencies which allow for the development of students' abilities to find, choose and evaluate audio-visual presentations. Researchers posit that YouTube usage in the university classroom is beneficial to students who access content via their mobile phones in order to gain a better grasp of what is taught in the classroom [10]. There is also the belief that the duration of the video may be a pull factor or a deterrent [10].

### **2.1 Improving comprehension of concepts/content**

In one study, researchers found that students who interacted with YouTube videos in order to improve comprehension of course content fared better than those who did not [11]. In fact, their research results revealed better grades for those students who had exposure and access to weekly videos of shared content which exemplified course information in the graduate level statistics course [11].

### **2.2 Visualising abstract, improving course interest, and critical thinking**

Researchers offering an academic language speaking course at a university in Turkey provided supplementary material for the course in a YouTube channel for students to access. The material included sample presentations and other course content [12]. These researchers contend that the majority of students reported benefits from using the playlists on the said YouTube channel. Additionally, they found that this approach provided an example of an alternative way that contemporary digital media can be used in the university classroom [12].

YouTube videos have aided university students in visualizing course content, increasing participation and engagement as well as critical thinking abilities [13]. These researchers also felt that through active student participation, the use of YouTube videos also enhanced students' real world application of course content [13].

### **2.3 Research questions**

While YouTube continues to be used as an e-resource in the education at all levels, not much is known about the pedagogical benefits that can be gained from it. This study is an attempt to explore the value of YouTube from the lecturer's point of view as it relates to classroom pedagogy. In this regard, the research questions for this study are as follows:

- What pedagogical benefits could be gained from the presentation of short YouTube videos related to specific psychology concepts and content related to the courses under study?
- What reasons could be advanced for the particular pedagogical benefits identified?

### **3 Research Method**

#### **3.1 Context of the study**

In this study, there was an emphasis on lecturer reflections about the use of YouTube videos in lecture delivery. These lectures were delivered to full-time teacher education students enrolled in three psychology courses at the University of Trinidad and Tobago. These courses were Psychology of Human development, Psychology of Learning and Adolescent Psychology. Each of the three classes had an average of 25 students and majority were female.

#### **3.2 Procedure**

First, the YouTube videos were carefully selected to match the content to be covered in the lecture discourse with each particular group of students. Next, the lecture discourse was conducted and the particular video was shown to the class followed by a discussion about the value of the video. This post-lecture discussion was about each video's value in terms of its contribution to clarity and further understanding or insight related to the content covered in the particular lecture.

Students' comments about the integration of this media were analysed in the reflective process to determine the benefits gained similar to strategies utilised in previous research [13]. Several pedagogical themes were identified from these reflections through thematic analysis [14]. The pedagogical benefits and insights derived from the reflective and critical evaluation processes are communicated below.

### **4 Results and Discussion**

In the university classes in this study, YouTube videos were used to summarise content, simplify complex phenomena, concretise abstract ideas, model appropriate interventions, reinforce domain-specific jargon (through additional contextualisation or more in-depth exploration), explore laboratory experimentation vicariously, and capture first hand musings and expositions of historical and contemporary theorists. The following is an account of these pedagogical benefits gained and the rationale behind each.

#### 4.1 Pedagogical benefits of YouTube usage at university level

**Summarisation of subject content:** As the field of psychology advances, its multiple areas of research are developing at a rapid rate. Consequently, the coverage of material for the psychology courses discussed here is extensive. Therefore, it is imperative that effective summarising strategies are employed to pull the essential elements of any given topic together in a succinct yet meaningful way. Such an approach reduces cognitive load and helps students to link the key concepts within a particular area of study. In this context, short YouTube videos were utilised to capture the essential elements of any broad area of study.

In effect, students were treated to an audio-visual summary at the end of the lecture-discussion episode. After a lecture-discussion on *Prenatal Development*, a YouTube video entitled, “In the Womb” featuring prenatal development was shown [15]. This YouTube video depicted in film and animation the prenatal developmental process from conception to birth. Each stage of intra-womb development was clearly depicted so that students could view and identify the growth and developmental changes of the foetus prior to birth. Although the video was only approximately five minutes long, it was well received as an excellent real life *audio-visual* summary of the content. There were many expressions of positive affect (*oohs and aaahs*) as the video progressed showing each growth and developmental stage *in utero*.

**Clarification of complex phenomena:** The complexity of certain concepts in psychology presents serious challenges to students’ abilities to grasp what is taught. Sometimes, challenges in understanding might be related to the fact that students may be harbouring misconceptions or may simply lack prior knowledge. In such circumstances, content that required prerequisite knowledge in specific areas would be difficult for students new to psychology to comprehend. In other situations, the nature of the concept itself might be complex and may require additional reading or other kinds of contact with the subject matter. When the additional experience augments, breaks down, analyses and simplifies the original content, comprehension is more readily achieved. Understanding action potential- the movement of chemical and electrical impulses along the axons of brain cells- is a case in point [16]. Reading and receiving a text-based or a verbal explanation of this phenomenon is often inadequate for students without a background in advanced Biology.

However, when YouTube videos that illustrate this complicated process in step by step slow motion animations are viewed, the complexity of the process is greatly reduced. Students are then able to track brain activity that occurs at a rate of 5 milliseconds or 200 times per second [16]. One such video is, “Action Potential Neuron” a three minute animation on the topic [17]. One student who viewed the video said, “good description of action potential. I understand it more now after seeing it animated. Also, I like how the guy’s (narrator’s) voice sounds...” [17]. In this student’s response, we see that the YouTube video provided a cognitive as well as a positive emotional experience which added value and motivation to the learning experience [18].

**Concretisation of abstract ideas:** In Psychology there are abstract concepts that students struggle to conceptualise. Piaget posited that preoperational children, (those

between ages 2 and 7 years old) lack conservation skills [16]. Conservation is the awareness that changing a substance or an object's appearance does not alter its basic properties [16]. Although this concept is not difficult for students themselves to grasp, they find difficulty in seeing how three and four year olds might have trouble understanding this concept. This situation is not totally surprising because researchers have found that while university students should be operating at a higher cognitive level where they are capable of abstract reasoning many of them actually reason at a lower level [20]. The lecturer, therefore, has the challenge of making this and other abstract concepts real to students. Again, YouTube proved to be a very effective solution to this problem. Students were shown short videos of psychologists and researchers conducting various *conservation tests* with young children. After viewing these videos, their understanding of the young child's lack of conservation skills was concretised. The videos provided more than the theoretical explanation of the concept; they also gave students an insight into the child's thought processes as each child gave reasons for her conclusions [21]. YouTube provided concrete examples in video as opposed to abstract, text-based descriptions [22].

**Modelling skills and professional behaviours:** Twenty-first century skills focus on learning *how* rather than learning simply *what according to* [22]. They also submit that “technology and pedagogy are converging to support students moving from learning *what to how*” [22]. As part of psychology, students are required to conduct primary research which involves interviewing participants and conducting simple developmental assessments. In order to develop consistency across students in assessment administration, videos of assessment simulations can be used. In these circumstances, YouTube videos of other students and professionals conducting similar assessments were used to good effect. Researchers agree that imitating models is one of the most effective ways to learn new behaviours [23]. Students were shown a video entitled, “Piaget's Stages of Development” that allowed them to see actual cognitive assessments being performed. After viewing this video, misconceptions were cleared up and students were able to conduct similar experiments themselves. Students who missed that opportunity made multiple errors when practical administration was required. Relatedly, one of the ways YouTube videos enhance student learning is through “how to instructions” [24, p.121].

One study reported that Judith Lackore, a Bachelor of Science in Nursing (BSN) instructor uploaded instructional videos on YouTube, demonstrating motor skills development techniques for her students [25]. Students are also instructed in correct methods of health assessment in an online media set. In music education, YouTube videos which feature professional tutorials have the potential to enhance students' musical understanding and nullify financial and geographical barriers [5]. Another study advances that “modelling” - as available through countless YouTube video performances- “can help students understand music concepts that are difficult to explain verbally and that visual or aural modelling addresses multiple learning styles” [26, p.26].

**Reinforcement of domain-specific jargon:** Students who are new to psychology are sometimes overwhelmed with the proliferation of new terms and concepts. YouTube creates an environment where students can explore subject related jargon

and new concepts from varying perspectives. These perspectives include that of the psychology professional in clinical practice, the student producing a project or the lecturer in a workshop, tutorial or classroom. These YouTube video experiences allow students a multidimensional view of the new concept pitched at different levels. The range of explanations goes from simple to complex. Therefore, students can walk themselves through these explanatory phases with different ‘tutors’ until they arrive at a more complete understanding and greater familiarity with the jargon. Thus, such experiences provided additional contextualisation that serve to effectively reinforce domain specific concepts and deepen student understanding. Classical conditioning, positive reinforcement and negative reinforcement are three psychological concepts that were reinforced in this way. One very effective YouTube video on classical conditioning is “Classical Conditioning- Ivan Pavlov” and another for positive reinforcement is ‘ABA Skills training: Positive reinforcement.’

**Exploration of vicarious laboratory experimentation (virtual lab):** Psychologists conduct laboratory experiments using humans and animals as subjects. Many of these research experiments are captured on video. Such video footage form the basis of considerable research data and support for many of the psychological theories accepted and practiced today. Reading about these experiments from a textbook or research paper gives a solid but limited experience. YouTube provides an invaluable source of laboratory work and psychological experiments. Concepts and theories come alive and students gain vicarious experiences in laboratory and experimental work. Students, therefore, benefit from top quality work done at Ivy League institutions such as Harvard, Stanford and Cambridge Universities.

A YouTube video on Adolescent Brain Development that features Dr. John Geidd of the National Institutes of Mental Health (NIMH) is a mix of neuroscience laboratory work and real world research on the topic [27]. Students are afforded a close MRI examination of the teenage brain as it develops and changes during puberty. They also get an opportunity to hear Dr. Geidd discuss his longitudinal brain research and what has been discovered [27]. Similarly, researchers state that preservice teachers were able to access a ‘virtual field experience’ via a wiki posted on YouTube [28]. This particular video assisted preservice teachers in acquiring practical knowledge of digital technologies that special-needs students use [28]. Even foreign language learners find that YouTube is very helpful in language acquisition since it allows them to view and listen to native language speakers where the accents and nuances of the actual language can be experienced [29].

**Capturing first-hand musings and expositions of theorists:** The theories of Skinner, Pavlov, Freud, Erikson, Piaget and Vygotsky dominate the field of psychology, especially educational psychology. The discipline relies heavily on the accurate translation of their non-English works. However, publishers admit that sometimes the full impact of their expressed ideas is lost during the translation process. Sometimes students find it difficult to connect with these theorists, their world and their times. In essence, translations often decontextualize ideas and concepts from their original framework making them difficult to grasp. YouTube provides the unique experience of seeing and hearing these theorists in their actual laboratories, classrooms or in their offices being interviewed. These videos give students a first-hand encounter with

these ‘obscure’ historical figures. In effect, they move from reading about their theories in books to listening to them discuss their ideas as well as the principles and motivations behind them. Such experiences allow students a clearer perspective on any given theory and often include additional information that the textbook or article does not provide.

Two excellent examples were the YouTube video of B. F. Skinner discussing the theory of Operant *Conditioning* and its related concepts (while at work in his laboratory) and an extensive interview with Jean Piaget about his theory of *Cognitive Development* [30-31]. The latter is a short documentary series produced by Yale University and directed as Piaget himself desired it. He discourses on various aspects of his theory and explores specific experiments with children to demonstrate his theory of cognitive development. He also spends time dispelling misconceptions related to his original ideas and philosophy [31].

**Augmented learning and collaboration:** Some researchers argue that notwithstanding identified challenges, integrating social media tools (specifically, Twitter, YouTube, Flickr, blogging and Skype) into class activities can augment learning opportunities within the humanities curriculum in medical schools and help students acquire tools and skill-sets for problem-solving, networking, and collaboration [32]. These researchers also posit that these social media allowed students to connect with medical experts, augment their learning and enhance their creative abilities [32]. Relatedly, it has been suggested that “relevant and targeted information” can be used to supplement course content in College health education courses while at the same time creating a classroom community for the “web 2.0” generation of learners [33].

## 5 Conclusion

Due to the technological revolution, tertiary education is at a critical juncture. YouTube boasts over 1 billion hours of video consumption each day, 400 hours of video are uploaded each minute (up from 35 hours per minute in 2010) and there are over 1.5 billion active monthly users. At the time of this study, YouTube was localised in 88 countries and across 76 languages [34]. Tertiary level educators must harness this seemingly limitless e-resource for more effective and engaging pedagogy. If indeed education is the true liberator and global democratisation is a latent aim of all education, then YouTube has begun the process. The educator has a critical role in using all digital media, and YouTube in particular, to facilitate and guide students in the use of this unique educational e-resource whose benefits can exceed those explicated here.

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