CS6460: Assignment 2

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Abstract— This assignment is divided into 2 sections below: Research Log & Activity. In Research Log, I have documented my learnings from 15 (*YouTube related*) academic publications, literatures & articles about Education Technology for 'content creation' track. In assignment 1, I researched literature regarding range of EdTech topics including history, progress & applications of EdTech, ethics & bias, current challenges & future opportunities. In this assignment 2, my primary focus is related to '*User Content* Generation' on digital platforms. The goal of selected 15 papers is to streamline & generate ideas for my EdTech 'content track'. The Activity section is specifically focusing on relationship between *online education* & *equity of access* using recently published literature (since 2016). It highlights benefits of MOOC & online education along with potential opportunities like design of new policies required to close the gap between access & online education.

SECTION A: RESEARCH LOG

I) BACKGROUND

I like building solutions to solve complex real-world problems & creating video content, targeted on use of technology to make human life easier.
Part I: I have interest in application of Machine Learning to 'solve a problem' which is repetitive in nature and requires less human intellect. While working in Human Resources domain for Walmart, I have practiced use of technology to improve human life on a large scale. By improve, I mean, saving time by automating processes (e.g. resume selection using algorithm instead of human spending many hours), improve training required for a job (e.g. use of Virtual Reality (VR) devices to train store employees).
Part II: Besides writing algorithms, I enjoy generating content (UGC) on YouTube. Mostly, I make videos about reviewing a tech product and solve general technical issues. Some of my previous content includes, comparing Apple Magic Mouse vs Trackpad which I hope will help many people make a good

purchase decision, review of DJI Mavic Drone to spread knowledge on drone piloting skills in general, etc.
In Summer 2020 semester, I plan to do a project around application of technology in content creation topic. Currently, I have not decided a specific topic for research hence in week 1, I spent time reading academic literatures, publications to get a solid grasp of EdTech domain.
Most of my following research mentioned below is focused around hypothesis building, content generation & delivery mechanism using EdTech.

II) LITERATURE

YOUTUBE REALTED PAPER: 1

Snelson, Chareen, and Perkins, Ross A. "From Silent Film to YouTube™: Tracing the Historical Roots of Motion Picture Technologies in Education." Journal of Visual Literacy. 28.1 (2009): 1-27. https://scholarworks.boisestate.edu/cgi/viewcontent.cgi?article=1007&context=edtech_facpubs
I found this paper on GT Library.

1.1 Summary

With the growing spectrum of online video services, it is apparent that certain aspects of new media can be traced back to much older forms of motion picture technology. This paper discusses use of motion pictures in educations, content filtering & future of online video in education.

1.2 Takeaways

Motion pictures will likely not replace textbooks, but the short digital video clip is likely to become a regular feature within digital learning materials. The problems associated with Internet safety need to be addressed before a video site like YouTube can be used in a K-12 classroom. The intrinsic value of video will continue to serve educators by providing audiovisual representations of ideas, information, and events.

YOUTUBE REALTED PAPER: 2

Sherer, Pamela, and Shea, Timothy. "Using Online Video to Support Student Learning and Engagement." College Teaching. 59.2 (2011): 56-59.
https://www-tandfonline-com.prx.library.gatech.edu/doi/pdf/10.1080/87567555.2010.511313?needAccess=true
I found this paper on GT Library.

1.1 Summary

Web 2.0 represents a collection of Web-based tools (e.g., Piazza, Canvas, blogs, Slack, podcasting, YouTube, etc.) that, in conjunction with the ubiquity of the Internet, provides unprecedented opportunities for online participation, collaboration, communication, and user-based content development.

1.2 Takeaways

Online video's versatility, accessibility allow both instructors and students opportunities to shape and contribute to course content and increase student engagement in classroom participation. Incorporating online videos in the design and delivery of a college course, (traditional classroom or an online format, or a hybrid) provides endless opportunities to enhance lectures, assignments, class discussions and exams, while simultaneously developing students' skills.

YOUTUBE REALTED PAPER: 3

Snelson, C. (2008). Web-Based Video in Education: Possibilities and Pitfalls. In Proceedings of TCC 2008 (pp. 214-221). TCCHawaii. Retrieved May 24, 2020 from https://www.learntechlib.org/p/43828/
I found this paper on Google Scholar.

1.1 Summary

With increase in web-based video sharing technologies like YouTube, there is overwhelming amount of video content available online. A drawback for educators is that the purpose of most video-sharing sites is not primarily educational & an issue of presence of inappropriate content. This paper illustrates how online video can be effectively used in online discussions, video case analysis, virtual field trips, and WebQuests.

1.2 Takeaways

Students have access to an unprecedented and growing range of online educational video content from small specific topics to full lectures. Video-sharing technologies, originally created for entertainment purposes, are quickly gaining popularity in academic arenas. Further research on quantification of video content quality is required. Online education can make

up for most of the pitfalls traditional educational environment has (e.g. crowded classrooms, geographic barriers to learning, etc.)

YOUTUBE REALTED PAPER: 4

Weller, Martin (2018). Twenty Years of Edtech. Educause Review Online, 53(4) pp. 34–48. https://oro.open.ac.uk/55708/1/ER184101.pdf
I found this paper on Google Scholar.

1.1 Summary
"EdTech is not a game for impatient" (pg. 20). In this research paper, author argues that there is less history books of EdTech due to day 0 mentality within EdTech community. Learning objects were the first attempt at making teaching content reusable. Author claims that application of EdTech is becoming biased towards higher education only.

1.2 Takeaways
EdTech has frequently failed to address the social impact of advocating for or implementing a technology beyond the higher education sector. MOOCs, learning analytics, AI, social media: the widespread adoption of these technologies leads to social implications that higher education has been guilty of ignoring.

YOUTUBE REALTED PAPER: 5

Cite as: Buzzetto-More, N. A. (2014). An examination of undergraduate student's perceptions and predilections of the use of YouTube in the teaching and learning process. Interdisciplinary Journal of E-Learning and Learning Objects, 10, 17-32. Retrieved from http://www.ijello.org/Volume10/IJELLOv10p017-032Buzzetto0437.pdf
I found this paper on Google Scholar.

1.1 Summary
Traditional text-based resources have remained the standard for centuries, they do not appeal to the hyper-stimulated visual learners of today. The research suggests that targeted YouTube videos enhance student engagement, depth of understanding, and overall satisfaction in higher education

courses. This research analyses value and usefulness of YouTube as a pedagogical tool.

1.2 Takeaways

Research concludes that YouTube enhances instruction and increases student interest. Students found using YouTube mobile app more. Participants reported that video length impacts their viewing decision, indicating that length should play a factor in the video production and selection process by faculty. Preference for longer videos than their hybrid/in-person counterparts.

YOUTUBE REALTED PAPER: 6

Nancy Caukina , Leslie Trailb , Ashlee Hoverc: "How EdTech Can Support Social and Emotional Learning at School and at Home", International Journal of the Whole Child 2020, VOL. 5, NO. 1
file:///Users/shinde/Desktop/1712-Article%20Text-4688-1-10-20200424.pdf
I found this paper on Google Scholar.

1.1 Summary

Educational outcomes should not be only academic. A teaching should be about providing a healthy, safe, engaging, supportive, and challenging classroom experience. We need to consider children's social and emotional learning. It is process in which individuals "manage emotions, set and achieve goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions".

1.2 Takeaways

Teachers use social & emotional intelligence while teaching a child. This results in students to apply learned academic knowledge to long-term learning. Incorporating EdTech at school and in the home will assist teachers and parents in improving students' social and emotional learning. Time spent with children both face-to-face and with EdTech learning tools may provide rare opportunities for productive, meaningful family time.

YOUTUBE REALTED PAPER: 7

Abdulghani, Hamza Mohammad, Shafiul Haque, Tauseef Ahmad, Mohammad Irshad, Kamran Sattar, Mohammed Meteb Al-Harbi, and Nehal Khamis. "A Critical Review of Obstetric and Gynecological Physical Examination Videos Available on YouTube: Content Analysis and User Engagement Evaluation." Medicine. 98.30: E16459 https://journals.lww.com/md-journal/Fulltext/2019/07260/A_critical_review_of_obstetric_and_gynecological.22.aspx
I found this paper on Georgia Tech library.

1.1 Summary

YouTube is a growing source of health-related information, but the videos uploaded on YouTube are not peer reviewed. Hence, there is need to do content analysis. This study is aimed to evaluate the usefulness, authenticity, and preciseness of YouTube's Obs/Gyne physical examination videos.

1.2 Takeaways

It is essential to have a framework to analyze the sources, contents, and quality of videos on YouTube. It is found that YouTube videos showed variable educational value. A small number of videos were identified as useful & can be used by the medical students for self-directed learning and by the clinical teachers for educational purposes.

YOUTUBE REALTED PAPER: 8

Neelormy Roy, "CREATING MEANINGFUL EDTECH LESSONS THROUGH DIGITAL STORYTELLING", Ontario Tech University
https://techandcurr2019.pressbooks.com/chapter/creating-meaningful-edtech-lessons-through-digital-storytelling/
I found this paper on Google Scholar.

1.1 Summary

EdTech had transformed traditional methods of educators. There are multiple forms of EdTech tools to experiment, like video, audio, chat, etc. It is important for educators to use these digital tools in a meaningful and appropriate way to engage students and match their individual needs. This article explains how to create meaningful EdTech lessons that align with learner-centered themes and

characteristics. Also, this study tries to touch topics like collaboration between educators and learners, innovation through EdTech.

1.2 Takeaways

A creative way for students to engage with EdTech tools is through the process of digital storytelling. With EdTech. Educators has to construct purpose, meaning, connections, and relationships to the community and outside world. Interactive technologies are highly motivating for student learning. Using interactive EdTech tools can allow students to exchange ideas & work. Students have the opportunity to create their own digital stories either individually or in a small group setting.

YOUTUBE REALTED PAPER: 9

Marta Majorek, "THE USE OF YOUTUBE IN EDUCATION. ADVANTAGES AND DISADVANTAGES OF THE SERVICE AS A TEACHING TOOL", ROCZNIK KOMISJI NAUK PEDAGOGICZNYCH Tom LXVIII, 2015: 57–65 PL ISSN 0079-3418
http://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.pan-rknp-yid-2015-iid-LXVIII-art-000000000007/c/RKNP2068-2015206-MMajorek.pdf
I found this paper on Google Scholar.

1.1 Summary

This paper analyses to what extent YouTube is a tool complementary to traditional educational techniques. If it's educational purpose usage will increase or remains the same by determining safety and efficiency of this form of knowledge sharing.

1.2 Takeaways

Use of technology (any digital platform) for content delivery is inevitable. More and more open-minded professors who want to interest audience in their achievements do not see anything inappropriate about placing their talks, and even entire lectures, on YouTube. Universities environment is associated with seriousness and esteem. An opportunity for a greater democratization of the education process. It is really a critical time & digital transformation for teachers/performers/creators to show their skills to attract attention of students.

YOUTUBE REALTED PAPER: 10

Dr. Jaya Prem Manglani, "A Study on Preference of EdTech in Delivery of Curriculum in Higher Education", UGC Care Journal, ISSN:2394-3114 Vol-40-Issue-51-March-2020
https://archives.tpnsindia.org/index.php/sipn/article/view/5539/5353
I found this paper on Google Scholar.

1.1 Summary
Many students cannot afford higher education due to different socioeconomic environments. This paper focuses on the importance & benefits of equal opportunities to every learner through efficient use of digital EdTech platforms.

1.2 Takeaways
Based on statistical test, it is observed that there is significant impact of various factors on the preference for selection of digital application for certification is accepted. This study states that, though there is awareness about digital education, but the acceptance is mediocre. This paper argues that, there must be more motivation provided and equal recognition as face to face courses.

YOUTUBE REALTED PAPER: 11

Jolene Fiarchuk, "ICCE FOR CREATING ENGAGING EDTECH LESSONS", University of Ontario Institute of Technology
https://techandcurriculum.pressbooks.com/chapter/icce-for-creating-engagement/
I found this paper on Google Scholar.

1.1 Summary
The ICCE framework is a game-based learning, builds upon strong pedagogical practices for analyzing tools for learning and their application in the classroom. This paper explains intended outcomes of each element of ICCE and their relation to learning theory. This paper emphasizes on applications of virtual reality, robotics and digital games in EdTech learning.

1.2 Takeaways
ICCE elements (inquiry, communication, construction, and expression) are all rooted in learning theory and pedagogy designed to maximize learning potential

in students including concepts like problem-based learning, metacognition, social and situated learning.
Until emerging technologies become more widely used to necessitate their own frameworks like ICCE exists for games, implementing this model can help teachers choose and utilize a wide array of innovations into their lessons while rooted in solid pedagogical practices.

YOUTUBE REALTED PAPER: 12

Alicia M. Dorado, "DESIRE VS. FEASIBILITY: EDTECH IN THE TEXAS PUBLIC SCHOOL SYSTEM", (2017), https://digital.library.txstate.edu/bitstream/handle/10877/6688/Dorado_Alicia_Thesis.pdf?sequence=1&isAllowed=y
I found this paper on Google Scholar.

1.1 Summary
To make public school students marketable & capable in technology, this study analyses initiatives to implement technology-based curriculum in public schools within Texas, USA and observation of social changes in education. This paper is also aimed at funding of those technologies.

1.2 Takeaways
It has been identified that the growth of societal dependence on technology does not parallel with the growth of technological public-school curriculum. It has been observed that there is a clear disconnect between societal growth in technology and government support of this growth in public school education.

YOUTUBE REALTED PAPER: 13

Dr. James Stanfield, Geoff Calder and Oscar Mlowe, Newcastle University, Muzafar Kaemdin, Human Development Innovation Fund (Palladium), "EdTech innovations in Tanzania: Investigating student and teacher perceptions",
(July 2018), http://www.skewerz.co.tz/wp-content/uploads/sites/11/2018/11/EdTech-innovations-in-Tanzania_Investigating-student-and-teacher-perceptions_Full-Report.pdf

I found this paper on Google Scholar.

1.1 Summary

Countries across Africa face numerous barriers when it comes to education technologies. These include a lack of effective policies and a lack of basic infrastructure, financing and teacher training. This paper is focused on explaining how both teachers and pupils are using technology to help enhance learning in the classroom. This study focuses on documenting student and teacher perspectives relating to the benefits and challenges of introducing tablet computers into classrooms.

1.2 Takeaways

Introduction of tablet & EdTech resulted in below benefits:

- Improvements in motivation and confidence
- Improvements in understanding English, vocabulary and speaking skills
- Increased understanding in other subject areas

YOUTUBE REALTED PAPER: 14

McNeill, D. "Engaging Younger Workers." Professional Safety. 53.12 (2008): 56. Web. https://search-proquest-com.eu1.proxy.openathens.net/docview/200413953?accountid=11107

I found this paper on GT library.

1.1 Summary

This paper uses 2 major things: YouTube's annotation feature & simulation techniques.

This article focuses on creating rapid learning simulations (RLS) with YouTube's interactive annotation feature. The goal here is to make employee training faster with automated training content which is also most beneficial.

1.2 Takeaways

YouTube's video annotation feature can be used to effectively create an employee training content. While simulations are not appropriate for everything, for certain types of learning situations they can be a powerful way to immerse learners into a problem.

YOUTUBE REALTED PAPER: 15

https://www.youtube.com/watch?v=9_4CvRa0hkA&feature=youtu.be
I found this video of ex-6460 class student on Youtube.

1.1 Summary

This video explains application of EdTech to build a tool for kids to learn mathematics.
This is a solid evidence of how EdTech can solve complex problems and also create innovative solution to help solve a problem.

1.2 Takeaways

Design an EdTech system and features by considering audience/end users.
Do not over-engineer an EdTech product but focus on solving a problem.

SYNTHESIS

I started my research on Educational Technology in general without focusing on any specific track like build, research or content creation. Even if I plan to do research in content creation track, in assignment 1, I tried to explore existing applications of EdTech, current research, challenges & opportunities. In assignment 2, I picked all 15 papers related to YouTube and other related topics like content creation using YouTube, advantage & disadvantage of using YouTube for educational purposes, privacy, content filtering, YouTube videos peer-review ideology, etc.
In assignment 1, I understood history and transformation of EdTech over years. In this assignment, I dig deeper into 1 focus are, which is YouTube. It was really rewarding for me to understand the YouTube infrastructure and major literature around YouTube as a platform for content delivery.
Currently, I have 2 ideas about my final project. First, build a system which will take YouTube video comment as input and quantifies into multiple matrices like, is it a hateful comment, how friendly comment it is?, how motivating this comment is?, etc. 2nd topic in mind is create a video content series for potential future YouTubers on how to start creating YouTube or any User Generated Content, pitfalls, technology, etc.
My plan is to keep exploring YouTube related literature in week 3 and then select a project after discussing with my mentor.

III) REFLECTION

In doing assignment 2, it was easy to formulate my thoughts as the heavy lifting is done in week 1 already. Although I had trouble finding peer reviewed paper related to the topic I picked, which is YouTube. I heavily relied on Google Scholar in Assignemtn2, compared with Assignment 1 where I used Georgia Tech library most.
The research guide gave huge kick start on 'how to read research papers' along with 'how to find research papers. Most of the times, I used Georgia Tech library to find peer-reviewed academic publications. Also, I used Google Scholar for finding few literatures of mu interest. To get through a paywall, I have used multiple filters while doing search online. Also, I have configured "find it! @ GT" in Google Scholar settings to quickly search Georgia Tech library for publications I am interested in.

IV) PLANNING

In week 3, I plan to finalize my micro topic for final project & read more literature related to application of EdTech in User Generated Contents specifically related to YouTube, current challenges & opportunities. Also, based on 2nd weeks assignment, I found that, the content creation for the same brand differs across different digital media platforms & I would like to research further how & what content works for the platform I will use for my final project of Educational Technology. In first 2 weeks, I have finalized my 'content track & most likely I plan to use YouTube to host my final created content. I still have to decide the macro topic of content creation, what content to create, content design, targeted audience & how it will contribute to current literature work in the content creation domain.

SECTION B: ACTIVITY

Prompt:
Online education and MOOCs were praised as having the potential to equalize access to education, but critics have suggested that they are having the opposite effect and are disproportionately used by already-affluent audiences. What is the truth about the relationship between online education and equity of access? Is it having an equalizing effect, or is it actually widening the gap in access to

education? In answering this, you could choose to consider equity based on gender, race, socioeconomic status, geographic location, or other factors, but you do not need to cover them all.

Answer using available literature:
Massive Open Online Courses (MOOCs) are often characterized as remedies to educational disparities related to social class. Given the rise of MOOC & online education in general, it is important to focus on literature published in recent year to answer this specific question. My answer below is primarily based on literature published since 2016.

Before getting into online education, disparity & access to information, it is worth checking if access to less or more information makes any difference in outcome of an experiment.
In "Equity in access? The number of the books available in grade 1, 3 and 5 classroom libraries" literature, Hodges, Wright, Roberts & Coleman, (2019) found that classroom libraries can provide children with necessary access to print, but access alone does little to explain differences between states in standardized (reading) test scores.
Additionally, it is found that, more books lead to more opportunities for student choice and selection; thus, disparities in access to classroom libraries are concerning even without final outcomes.
This paper provides looks both sides of 'information access' coin & emphasize a great learning that, even if there is not significant difference in outcomes & information access, it is critical to increase information access to everyone as it is predictive of future individual success.

In "Do MOOCs Contribute to Student Equity and Social Inclusion? A Systematic Review 2014–18.", Lambert, (2018), mentioned that the hope of MOOC & free online courses is to bring the best education in the world to the most remote corners of the planet (Pappano "The Year of the MOOC" (Pappano, 2012, p. 2)) but there are few challenges that needs attention.
The potential opportunity for serving socio-economically disadvantaged learners have energized and motivated a range of educational institutions around the world to design and implement 'local' programs with more equitable educational opportunities. This indicates an equalizing effect between online education & equity of access using learnings by local institutions across world.

Additionally, learner support options like phone, email or digital facilitation for online education were found important to the success to help social inclusion & student equity.

Organizations and educators with passion to increase learning participation have designed free-to-all online MOOC programs with particular disadvantaged communities and cohorts in mind. These efforts have led the adoption of MOOC platforms and similar technologies in more developmental, supportive and equitable ways.

To find a solution to educational and societal inequality, some attention & further research is required in course (inclusive) design & pedagogy techniques. Some of the recommendations are, contemporary approaches to Content and Language Integrated Learning (CLIL); partnerships with equity group communities in the development, delivery and promotion of courses; cross-disciplinary design collaborations to develop courses; programs to address gender and indigenous inequality; and the tracking of equity group cohorts within 'open to all' untargeted programs to ensure not only the access, but progression and success of diverse learners.

To summarize, MOOC & free online courses have stimulated the idea of learning across globe and institutions are adopting to the technologies, style & course design to fit MOCC format, which is great to equalize online education & equity of access between all gender, race, socioeconomic status & geographic regions. By incorporation localization to learning content, course promotions & building solutions around course completion will increase overall success of learning around the world.

In "Participation in Higher Education in Australia: Equity and Access", Ryan & Cardak, (2009), found that, in Australia, based on university entrance examinations scores, low SES (Socioeconomic status) students are as likely to attend university as high SES students but possession and the quality of ENTER scores (eligibility) rises with SES. This indicates that educational policy should rectify this situation by lowering university tuition charges to students from lower socioeconomic background. Without right policies, there gap between education & equity of access will increase for university education format.
Also, it is found that students with a greater entrance examination score are equally likely to attend university irrespective of their SES. The students with lower socio-economic background are proved to be a low performer by year 9. It is found that improving early educational outcomes, particularly through primary school and early high school years is likely to improve university entrance scores and eligibility, thus helping address the socioeconomic imbalance.

Thus, the socioeconomic imbalance among higher education participants can be solved by providing MOOC & free online courses among early education of lower socioeconomic students.

In "Democratizing Education? Examining Access and Usage Patterns in Massive Open Online Courses", Hansen & Reich, (2015), it is found that MOOC & online learning can exacerbate rather than reduce disparities in educational outcomes related to socioeconomic status. The study shows that, students from high affluent socioeconomic areas within United States tend to complete more MOOC courses & get certificates. Also, students with previous STEM background are more successful in completing online courses. Freely available learning technologies can offer broad social benefits, but educators and policymakers should not assume that the underserved or disadvantaged society class will be the main beneficiaries. A lot of targeted innovation is still required & essential towards the students from lower socioeconomic background.

Based on all literature, it is clear that online education & MOOC brings many benefits to society by solving the fundamental issue of education & content democratization. Also, it helps widen education across globe. Along with benefits of online education spread, the issue of information access equity arises, which can potentially be solved by targeted research & customized solutions built for learners from lower socioeconomic background. The right policies & targeted support will close the gap in access & education.

REFERENCES

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