

# Dissertation Defense

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# **THE EFFECTS OF TODAY'S TECHNOLOGY ON STUDENT LEARNING IN HIGHER EDUCATION**

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# Presentation Agenda

- Purpose of the Study
- Problem Statement
- Research Questions
- Research Methodology
- Theoretical Framework
- Assumptions
- Limitations and Delimitations
- Overview of Literature
- Data Collection & Analysis
- Participant Rights
- Social Change
- Results
- Recommendations
- Conclusion



# Purpose

- The purpose of this research is to identify implications for future investment in the use of technology for learning in schools, life, and other aspects of life.
- Technologies are now embedded in society.
- Focus has shifted from whether to use them in teaching and learning, to understanding which technologies can be used for what specific educational purposes
- The need to investigate how best they can be used and embedded across the range of educational contexts in schools and possibly life.



# Problem Statement

There has been a large amount of research on technology and the effects it has on society and education independently. There has not been much research related to the interconnection between the two and how technology affects students in the development of their education. The problem is that some technology such as social media, the internet, and search engines are affecting these individual's critical thinking and learning capabilities, and how they perform later in their education, specifically, in a collegial online environment.



# Research Questions

1. What effects does computer-based technology have on today's undergraduate online education?
2. How does technology affect Generation Y student's learning skills?
3. How can education be modified to meet the changing evolution of technology?



# Research Methodology

- Phenomenology Research Design
- Virtual focus group discussion of 20 online students
  - Pursuing a post-secondary degree from an online accredited university
  - Between the ages of 22 and 37
- Instrumentation
  - Google Classroom



# Theoretical Framework and Assumptions of the Study

- Learning Theories
  - Behaviorist
    - Mechanical process of associating the stimulus with response, producing a new behavior
  - Cognitivism
    - The mind functions like a computer processor. Information comes in as an input and the information is processed
  - Constructivism
    - Knowledge is constructed through one's own personal experiences and interactions
- Assumptions
  - Students have a basic exposure to technology
  - Students will provide honest and truthful answers
  - Technology will continue to be important and evolve





# Limitations and Delimitations

- Limitations
  - Results may not be generalizable
  - Students will have different types of exposure to technology
- Delimitations
  - Small sample size
  - Study does not address that the amount of technology that may affected students is dependent on factors such as locale, culture, age and societal environment



# Overview of the Literature

## Theories of Learning

- Technology as a Tutor
- Technology as a Tool
- Technology as a Support

## Social Media Effects

- Positive Effects
- Challenges

## The Internet Effect

- Benefits of Internet Use
- Negative Effects
- Impact on Thinking
- Impact on Communication



# Overview of the Literature

## Power of the Search Engine

- Search Engine's Adverse Effects
- Search Engine's Can Help



# Data Collection and Analysis

## Initial Screening Pilot Testing

- Brief questionnaire designed to qualify participants
- Qualified participants move on to participate in the classroom discussion



## Classroom Discussion Questions

- In-depth classroom discussion questions
- Virtual Google Classroom
- Participant's responses recorded within the classroom
- Researcher's journal & notes



## Data Analysis

- Open Coding approach
- Member checks
- Peer debriefing



# Participant Rights & Protections

- Clearly explained information about procedures and processes
- Contact Information
- Consent form/Opt-out
- Anonymity & confidentiality
  - Removal of identifying information
- Secure electronic
  - Password protection



# Social Change

- Better understanding of the lived experience of technology emergence in education
- Help to create an environment where computer-based technology can be incorporated to help assist in the learning process
- Potentially informs further research
- Potentially informs policymakers and educators

# Results & Recommendations





# Participant Demographics

- Invitations sent via Facebook, LinkedIn, Argosy University
- Participants currently enrolled in an undergraduate or graduate curriculum
- Participants between the ages of 22 – 37 years old
- 27 total participants
- Participants were enrolled in 8 different online universities in the US
- Participants responded to 6 open-ended class discussion questions





# Results – Discussion Questions

**Class Discussion Question 1:** What type of experiences have you encountered with computer-based technology, such as search engines, social media sites, and the Internet that may have affected your educational journey? Do you think they have a negative or positive effect or both? Why?

**Class Discussion Question 2:** Tell me about a time that you had an assignment that you didn't understand, did you use any computer-based technology to help you understand? What type of technology did you use? Did the technology use help with the assignment? If so, how?



# Results – Discussion Questions

**Class Discussion Question 3:** When you are assigned a research assignment, how do you first approach the assignment? What type of technology do you use? Did the technology use help with the assignment? If so, how?

**Class Discussion Question 4:** Do you think computer-based technology, as defined in discussion question one, has assisted you with your learning experience?



## **Results – Discussion Questions**

**Class Discussion Question 5:** From your personal experience, has technology helped you through your academic career thus far; handicapped you in some ways or both? How?

**Class Discussion Question 6:** In your opinion, how do you feel these technologies has helped the learning experience academically?



# Results - Coding

Coding –

- Open Coding - descriptors were determined from the transcripts
- Axial Coding - codes are assigned to categories and themes are formulated
  - Nvivo Software used for coding
    - Codes were assigned and themes started to develop
- Selective Coding - categories and their interrelationships are combined to form a 'storyline'
  - Broader themes were identified to simplify the descriptions



# Results - Themes

**Research question 1: What effects does computer-based technology have on today's undergraduate and graduate online education?**

- Computer-based technology creates a network of information by allowing learners to share and access information from several credible resources in which saves time and creates efficiencies in the research process.
- Computer-based technology can foster distractions that deter from the initial intentions of its use.
- Computer-based technology has diminished critical thinking skills and original thoughts by creating a dependency that can lead to academic laziness.
- Computer-based technology can lead to unreliable and incorrect information which can lead to reporting inaccurate research results and credible resource information.



# Results - Themes

## Research question 2: How does technology affect Generation Y student's learning experience?

- Computer-based technology has provided an alternative way to research that was limited by physical demands of searching through books, encyclopedias, and other physical resources making attending school and learning become more convenient, and opening the learning experience to a broader audience, giving more people access to education.
- Computer-based technology has made exceptional knowledge familiar and accessible making the learning experience less proactive and reactive; it has become a tool and a supplement to the experience.
- Students tend to look for the "quick answer" rather than look for a complete answer making the student more susceptible to plagiarism and not injecting their ideas.
- Some computer-based technology creates distractions by spontaneously checking social media sites and other websites rather than staying on task, therefore hindering the learning experience.
- Computer-based technology has become a hindrance because of technical requirements surrounding availability to some students.



# Results - Themes

**Research question 3: How can education be modified to meet the changing evolution of technology?**

- Students are using computer-based technology to think outside the box by using the additional resources to broaden their knowledge, skills, and help achieve academic goals.
- Computer-based technology has created dependencies that are affecting patience, critical thinking, and learning skills; they no longer need to commit the information to memory because it is always available.
- Students have become confused between the true meaning of research and looking up information.





# Implication of Practice

- Improve integrating today's ever-changing computer-based technology with education
- Help illuminate some of the adverse effects of these technologies and highlight some ways to incorporate the positive impact on the experience
- Improve understanding of student's experiences and the factors that influenced these experiences can help educators integrate these technologies into their courses
- Useful to educators in designing courses and approaching how to integrate computer-based technology in their curriculum
- Provide guidance on how to use computer-based technology as a tool and resource
- Help students develop a more research methodological approach when using these technologies





# Recommendations

- Online learning must create challenging activities that enable learners to link new information to old; acquire meaningful knowledge; and use their metacognitive abilities; hence, it is the instructional strategy, not the technology that influences the quality of learning.
- Educators should ask how and why the technology is essential or transformative to learning and use the tools to their advantage rather it becoming a distraction.
- Educators should help students become critical consumers and producers so that they can evaluate and explain their choices.



# Recommendation for Future Studies

- Continue to monitor students' usage and attitudes toward technology
- Study how to best support those students who are not using the technology
- Need to address how using computer-based technology may contribute to the long-term retention of knowledge and acquisition of skills such as interpersonal communication and cognitive skills
- These technologies are always changing



## Conclusion

Online learning allows participants to collapse time and space (Cole, 2000); however, the learning materials must be adequately designed to engage the learner and promote learning. The delivery method allows for flexibility of access, from anywhere and usually anytime, but the learning must use sound instructional design principles.

According to Bonk and Reynolds (1997), to promote higher-order thinking on the Web, online learning must create challenging activities that enable learners to link new information to old; acquire meaningful knowledge; and use their metacognitive abilities; hence, it is the instructional strategy, not the technology, that influences the quality of learning.



Questions Regarding the  
Study?