MICHIGAN STATE UNIVERSITY College of Education

Focus Group Interviews with College Student Gamers with Disabilities

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AGENDA

- Introduction & Warm-up Questions
- Rationale & Theoretical Background
- Research Design
- Data Analysis & Figures
- Three Main Themes
  - Benefits
  - Barriers
  - Accessibility
- Conclusions & Implications
- Current Projects
- QnA

WHO ARE WE?

- Hung-Jen Kuo, PhD, CRC, LPC
  - Assistant professor at MSU
  - Leveraging technology to improve quality of life for individuals with disabilities

- Michael Yeomans, MA, CRC
  - PhD candidate at MSU
  - Finding ways video game technologies and counseling can be leveraged to develop interventions that can benefit students with disabilities and improve well-being

- Minju Lee, MS, CRC
  - 2nd-year doctoral student at MSU
  - How to enhance the quality of life of individuals with disabilities leveraging assistive technologies

- Mudita Jagota, MA, CRC
  - 2nd-year doctoral student at MSU
  - Developing positive disability identity and advocating for environments that enhance the quality of life for disabled individuals, including using assistive technologies

- Eve Lansford
  - High school junior in NY
  - Technology and the role it plays in the lives of individuals with disabilities

WARM – UP

Rationale for Project

- Prevalence
  According to an annual survey, some of the most popular hobbies and activities in the United States in 2023 are:

  cooking and baking (42%)

  reading (37%)

  pets (35%)

  video games (35%)

- In fact, 65% of adults or 212.6 million people in the US engage in weekly gaming, reflecting the ubiquity of video games.

Rationale for Project

- <u>Economic Impact</u>

  The video game industry represents one of the **largest entertainment markets**.

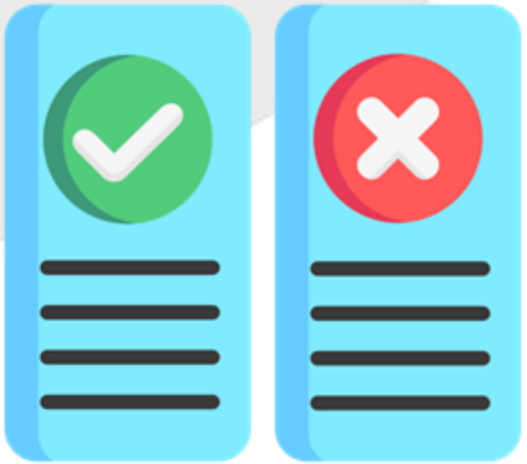
  Revenue by industry in 2023:
  - global film = $33.9 billion
  - major US sports leagues = $49.3 billion
  - US gambling industry = $66.65 billion

- The gaming industry generated <u>$57.2 billion</u> in revenue in 2023.

Rationale for Project

- Debates on Video Games

  Excessive gaming has been associated with **several negative outcomes**:
  - lower academic performance (GPA)
  - aggression
  - depression
  - anxiety
  - social phobia
  - sleep problems
  - laziness



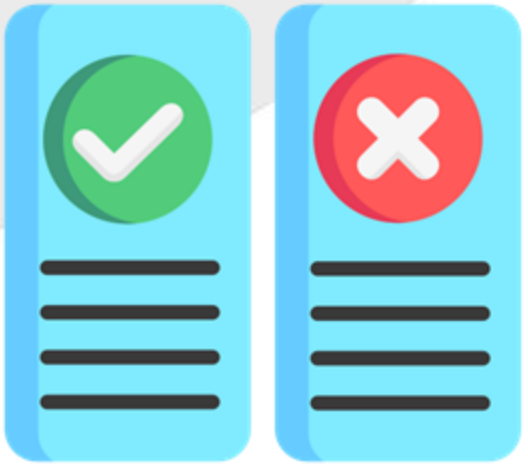
Rationale for Project

- <u>Debates on Video Games</u>

  However, many researchers are actively studying and finding positive aspects of video games.

  - Educational games are being utilized in higher education to enhance students' **learning experiences** and **outcomes**.

  - A positive relationship has been found between playing video games and **affective wellbeing**.



Rationale for Project

- <u>COVID-19 Pandemic</u>
  The global shutdown discouraged traditional in-person means of socialization.
  The gaming industry experienced **rapid growth** as individuals flocked to online interactions to satisfy their needs.
- Gaming was even **promoted** as a safe means to socialize during this period, seeing promotion from the WHO:

  "Gaming companies have a global audience - we encourage all to #PlayApartTogether."

Rationale for Project

1

Pre-Pandemic

Gaming classified as potential addiction by WHO

2

COVID-19 Outbreak

Surge in gaming for social connection and stress relief

3

WHO Endorsement

Gaming encouraged for mental health during lockdowns

4

Post-Pandemic

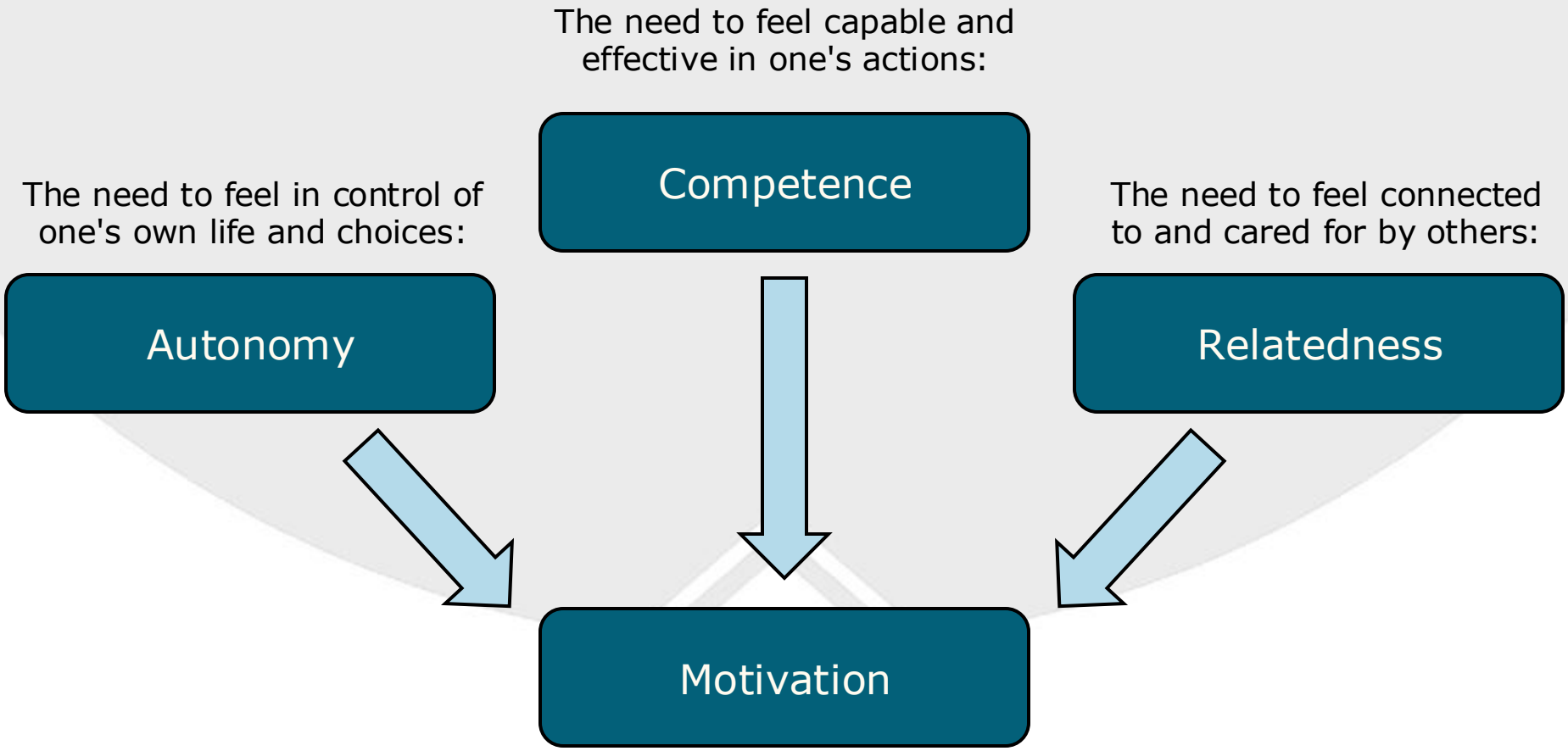
Continued growth and recognition of gaming benefits

Rationale for Project

- <u>Accessibility of Video Games</u>
  With the rise in popularity of video games, recent discourse has highlighted the prominent issue of minimizing obstacles and limitations for all users across various types of games.
- A survey of 500 adults with physical and mental disabilities who play video games revealed that **81% encountered difficulties** in playing their preferred games as a result of inaccessible game features.
  - The participants in this article reported obstacles inducing '**cognitive overload**' due to intricate control configurations and challenging-to-follow information or instructions (28%).
  - Additionally, 24% encountered **dexterity-related challenges**, such as controllers lacking ergonomic suitability for their needs.

Theoretical Perspective – Self-Determination Theory

SDT, by Deci and Ryan (2012), explains one's psychological needs during an activity:



Satisfaction of these needs empowers **self-determination**.

Self-Determination Theory in Gaming

- The Self-Determination Theory (SDT) provides a framework for understanding the **motivations behind gaming**.
- SDT posits that human motivation is rooted in three fundamental psychological needs: **autonomy, competence, and relatedness**.
- In the context of gaming, these needs can be fulfilled through **player choices, skill development, and social interactions** within games.

Self-Determination Theory in Gaming

Autonomy

through the player's **voluntary actions** while gaming.

Competence

through **challenge** and **achievement** while gaming.

Relatedness

through the **connection** with others while gaming.

Self-Determination Theory in Gaming

Research has shown that the key components of SDT significantly influence the motives and purposes behind time spent playing video games, **affecting players' wellbeing and engagement**.

People who are **highly self-determined** tend to:

- Set goals and work to reach them
- Take responsibility for their behaviors
- Take credit for their success but also hold their heads high up in the face of failure

Data Analysis & Figures

- Selection Criteria
  - Age 18 or older
  - Enrolled in college/graduate school
  - Identifies as having a disability *– according to the RCPD list*
  - Experience playing video games
- Sample
  - 12 participants from a large public university in the Midwest, USA
  - 3 focus groups, each lasting about 60 minutes (2 in-person meetings; 1 zoom meeting)

Data Analysis & Figures

Table 1

Participant demographics

Participant #	Focus Group #	Age	Years at University	Gender	Race/Ethnicity	Disability Status
1	1	21	4	Female	White	Attention deficit, Health-related disability, Learning disability, Mental health condition
2	1	20	3	Female	American Indian, Alaska Native or First Nations, White	Health-related disability, Mobility-related disability
3	1	20	3	Female	White	Mental health condition
4	1	28	4	Male	Asian	Attention deficit, Learning disability, Mental health condition
5	1	20	3	Female	White	Mental health condition
6	2	20	3	Female	White	Health-related disability, Mental health condition
7	2	25	1	Non-binary / Third Gender	White	Attention deficit, Mental health condition
8	2	25	3	Non-binary / Third Gender	Hispanic or Latinx, White	Attention deficit, Autism
9	2	25	0.5	Female	White	Attention deficit, Health-related disability, Mental health condition, Other (Cancer)
10	3	21	3	Female	White	Attention deficit, Autism, Other (Hypothyroidism)
11	3	32	1	Female	Black or African-American	Attention deficit, Autism, Health-related disability, Mental health condition
12	3	19	1	Transgender Woman	Asian	Attention deficit, Mental health condition

Data Analysis & Figures

- Demographics
  - Age: 19 to 32 years (M = 23, SD = 4.02)
  - Gender: 8 female, 1 male, 2 non-binary, 1 transgender woman
  - Race: 8 White, 2 Asian, 1 Black/African-American, 1 Hispanic
  - Disabilities: Attention Deficit (8), Health-Related (6), Mental Health (9), Learning Disabilities (2), Autism (3), Others (2)

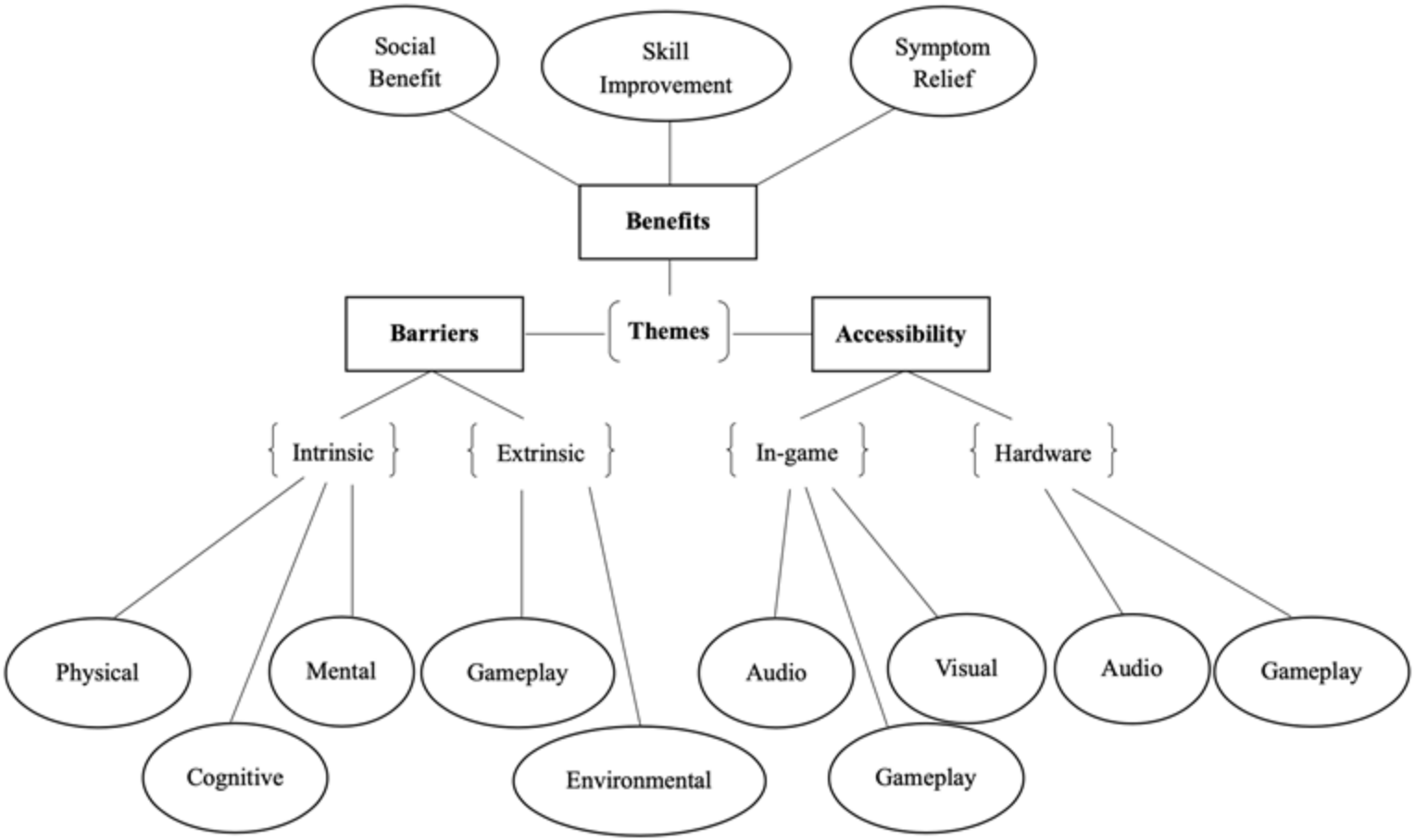
Data Analysis & Figures

- Reflexive Thematic Analysis (RTA; Braun & Clarke, 2012; 2013; 2014; 2020)
  1) Familiarizing with the data, transcribing, and noting initial trends
  2) Generating initial codes
  3) Synthesizing codes into potential themes with meaningful interpretations
  4) Reviewing and refining themes in relation to the dataset based on coherence and relevance
  5) Defining and naming themes concisely
  6) Producing the report, maintaining coherence, and contextualizing findings

Data Analysis & Figures

Figure 1

Main themes and sub-themes derived from the interviews



Benefits of Gaming

Social Connections

Forming friendships and engaging in teamwork

Symptom Relief

Distraction from pain, anxiety, and discomfort

Skill Improvement

Enhancing motor, cognitive, and communication skills

Intrinsic Barriers to Gaming

- Internal, individual-specific challenges that affect gameplay
- Related to physical, cognitive, and mental attributes
- Influence how players experience and engage with video games

Intrinsic Barriers to Gaming

- Physical Barriers
  - Reduced motor skills
  - Coordination
  - Endurance affecting gameplay
- Cognitive Barriers
  - Memory issues
  - Executive dysfunction
  - Decision-making challenges
- Mental Barriers
  - Anxiety
  - Depression
  - Overstimulation impacting gaming experience

Extrinsic Barriers to Gaming

- External, environmental factors that hinder gameplay engagement
- Arise from the game environment, design, and societal factors
- Impact both access and enjoyment for individuals with disabilities

Extrinsic Barriers to Gaming

- Gameplay Barriers
  - Design Challenges
    - Small, low-contrast fonts
    - Lack of modern accessibility options
  - Cognitive Barriers
    - Games relying on spelling puzzles create difficulties for dyslexic players
    - Mechanics requiring specific cognitive skills exclude some users
  - Older Games
    - Outdated games (e.g., on DS or PSP) lack accessibility functionality

Extrinsic Barriers to Gaming

- Environmental Barriers
  - Financial Limitations
    - High cost of gaming equipment (e.g., Nintendo Switch)
    - Quick sellouts make consoles difficult to buy
  - Access to Technology
    - Limited access to TVs and consoles in shared spaces
    - Dependence on outdated or incompatible devices (e.g., PCs breaking down)
  - Proprietary Hardware Issues
    - Some barriers exist purely for company profit (e.g., restricted compatibility)

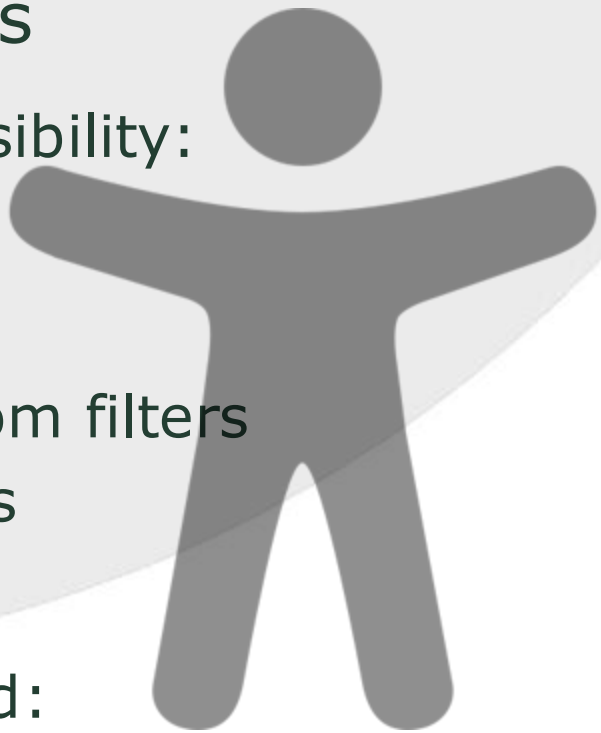
Accessibility in Gaming

- In-Game Features
  - Gameplay Customization
    - Adjustable pacing reduces anxiety
    - Skill-based player matching improves experience in competitive games
    - Helpful features: auto-aim, adjustable mouse sensitivity, and difficulty modes

      "Lowering the mouse sensitivity makes it easier for me."

Accessibility in Gaming

- In-Game Features
  - Audio and Visual Adjustments
    - Brightness controls improve visibility:
      "Sometimes I have to turn the brightness up."
    - Phone games: Accessibility zoom filters help with low-light adjustments
    - Audio customization
      Players prefer controlling sound:
      "I like to listen to my own music."



Accessibility in Gaming

- Hardware and External Designs
  - Headphones for Noise Isolation
    - "Overhead headphones to eliminate extra background noise."
    - Helps focus and minimizes distractions: "I just need isolation."
  - Haptic Feedback on Controllers
    - Sensory cues improve interaction: "It would be nice to have sensory feedback on handhelds."

Implications & Conclusions

Extrinsic Barriers:

- Improved accessibility in game design can significantly enhance the gaming experience.
- Focus on inclusive gaming environments from the outset.
- Solutions: Customizable controls, adaptable interfaces, cognitive accessibility support.

Holistic Accessibility:

- Integrate accessibility features addressing physical, cognitive, visual, and auditory barriers.
- Benefits all players, sets a new industry standard for inclusivity.

Intrinsic Barriers & Research:

- Investigate how cognitive and emotional challenges impact gaming motivation.
- Research disability-specific impacts to create targeted interventions

Future Direction

- The study points to several important areas for future research. There is a need to explore how different types of disabilities interact with gaming motivation and to investigate the long-term impacts of gaming on skill development and social integration for students with disabilities.

- Additionally, research should focus on developing and evaluating new accessibility technologies and design approaches. Longitudinal studies could provide insights into how gaming experiences and accessibility challenges evolve over time, particularly as new technologies emerge.

SPARTANS

GREAT LAB

GAME. REHABILITATION. EDUCATION.
ASSISTIVE TECHNOLOGY

The GREAT LAB

- Game
- Rehabilitation
- Education
- Assistive Technology

Current Projects

- Collaborative video game for addressing disability biases (contact: **yeoman12@msu.edu**)
- Comprehensive Approach for Learning Mindfulness (CALM)
  - A digital scalable mental health intervention
- Mixed reality for employer training
  - A demand side vocational rehabilitation
- Job shadowing in an immersive virtual reality environment

ARE THESE INTERSTING!?
PLEASE CONTACT: **kuohungj@msu.edu**

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Thank You!