



# Press B to Belong: Creating Inclusive Gaming Programs in School Communities



THE UNIVERSITY OF  
MELBOURNE

Dr. Matthew  
Harrison

Jess  
Rowlings

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The University also acknowledges and is grateful to the Traditional Owners, Elders and Knowledge Holders of all Indigenous nations and clans who have been instrumental in our reconciliation journey.

We recognise the unique place held by Aboriginal and Torres Strait Islander peoples as the original owners and custodians of the lands and waterways across the Australian continent, with histories of continuous connection dating back more than 60,000 years. We also acknowledge their enduring cultural practices of caring for Country.

We pay respect to Elders past, present and future, and acknowledge the importance of Indigenous knowledge in the Academy. As a community of researchers, teachers, professional staff and students we are privileged to work and learn every day with Indigenous colleagues and partners.



# Overview of our workshop



 **Introducing ourselves** (5 mins)

 **Neurodiversity and collaborative skills** (10 mins)

 Rethinking autism, ADHD and other differences

 What are neurodiversity-affirming collaborative skills?

 **Exploring the virtual playgrounds model** (10 mins)

 Key characteristics of an effective virtual playground

 **Exploring inclusive esports** (15 mins)

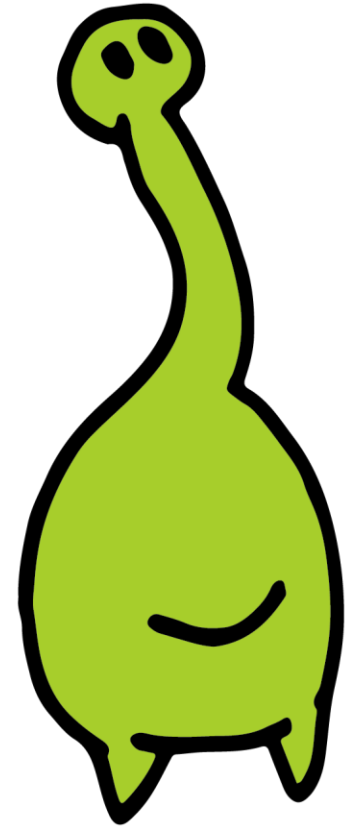
 Everyone Can Play Inclusive Esports Framework

 **Exploring the Next Level Collaboration structured program** (15 mins)

 Using a consistent three stage structure

 Finding the right cooperative games for your players

 **Questions and answers, next steps** (5 mins)



# Introducing Dr. Matthew Harrison



- Teacher (F-12 & tertiary) in Australia, the UK and South Korea in mainstream and Special Development schools
- Senior Lecturer in the Learning Intervention team at the Faculty of Education
- My areas of interest are **neurodiversity**, **digital technologies**, and **inclusive education**
- My PhD research: “Supporting social skills development through a targeted intervention using cooperative videogames in a Special Development School”
- Co-leader of the **University of Melbourne Neurodiversity Project**

# Introducing Jess Rowlings



- Qualified speech pathologist previously working in pragmatic language and social capacity
- Researcher at the Faculty of Education and commenced PhD on the experiences of neurodivergent women in video gaming
- CEO & Co-founder of Next Level Collaboration
- Areas of research interest include neurodiversity, digital games-based learning, game design, and accessibility
- Currently work with neurodivergent children to build social capacity through digital games-based learning
- Lived experience of autism and ADHD

# Growing up gaming



# What is belonging?



↓↓↑ CHEAT CODE: How do we define belonging in a school context?

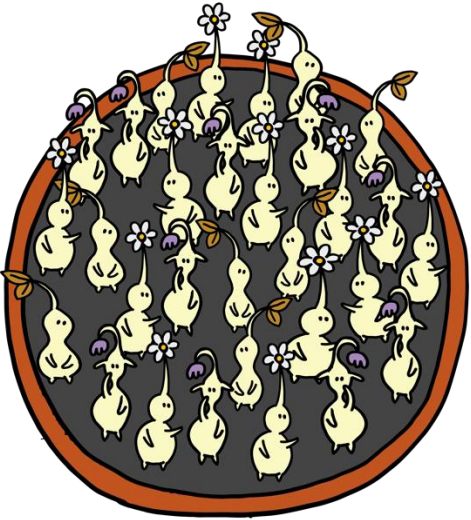
We use the definition adopted by the Organisation for Economic Co-operation and Development (OECD), which is based on the work of Baumeister and Leary (1995) and Maslow (1943):

***“Sense of belonging is the need to form and maintain at least a minimum number of interpersonal relationships based on trust, acceptance, love and support.”***

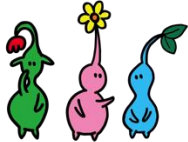
- (OECD, 2019)



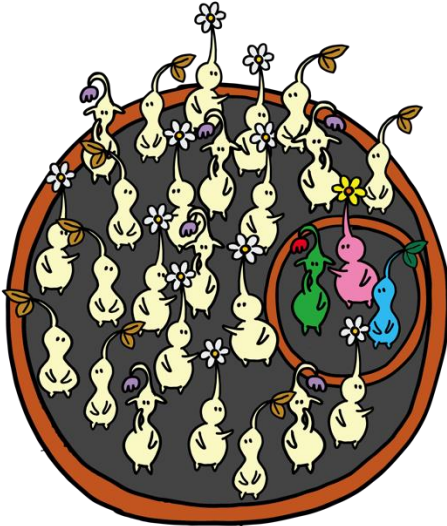
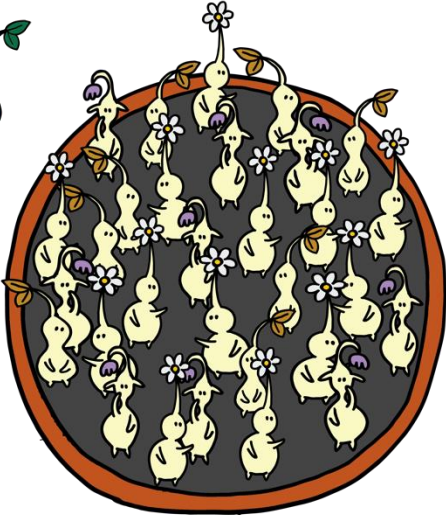
# Conceptualising inclusion



Exclusion



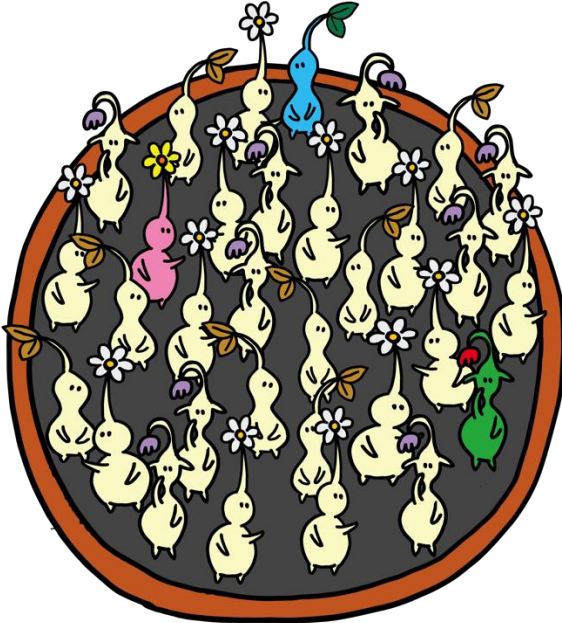
Segregation



Integration



Inclusion







# Neurodiversity and collaborative skills



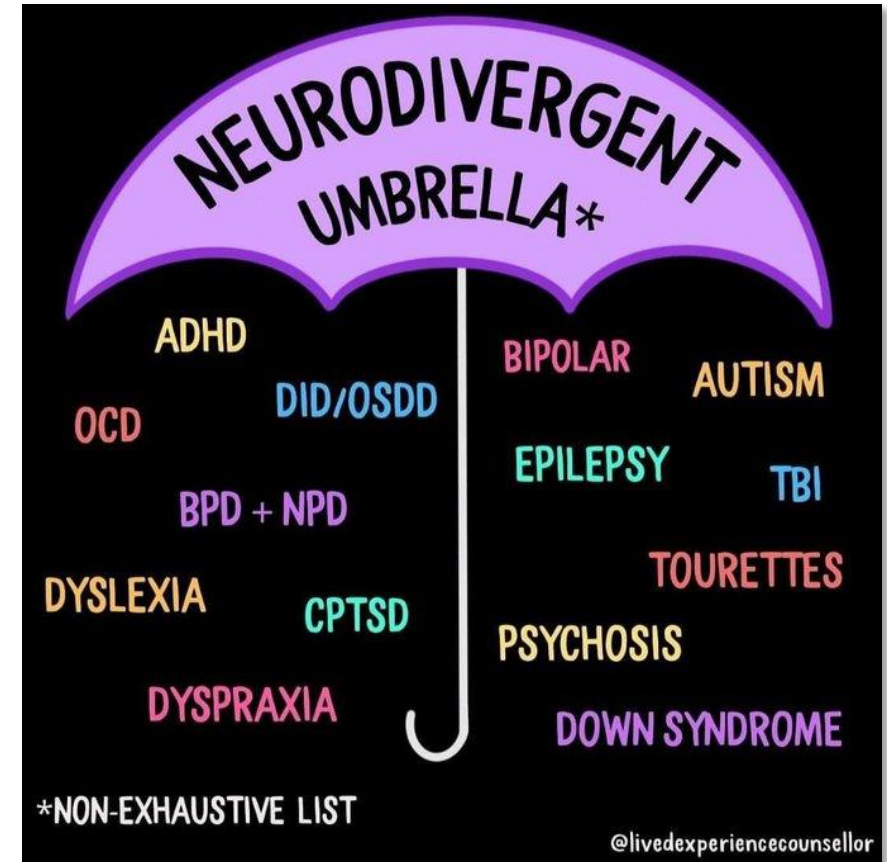
Dr. Matthew  
Harrison

Jess  
Rowlings



# Neurodiverse or neurodivergent?

- **Neurodivergent** refers to people whose neurology falls outside what is considered the 'typical norms' and may be associated with a formal diagnostic label.
- **Neurotypical** refers to those whose neurology falls within what we consider the 'typical norms'.



(Wise, S. J., 2021)



# Diagnosing autism



The revised Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR) focuses on two defining challenges:

1. the **impairment** of social communication and interaction
2. **restricted** patterns of behaviour, interests or activities

Social communication 'challenges' may relate to:

- Social-emotional reciprocity
- Non-verbal communication
- Developing and maintaining relationships

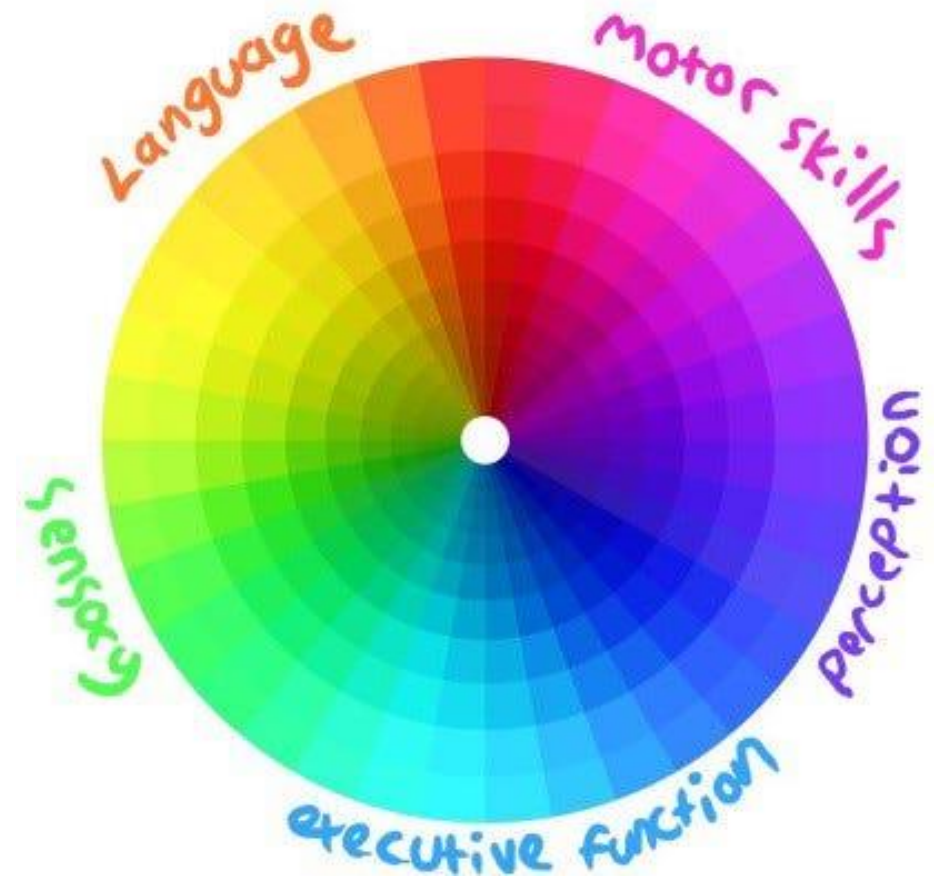
Behavioural characteristics may present as:

- Repetitive motor movements or speech patterns (e.g. echolalia)
- Strong preference for predictability and routines
- Highly specific interests
- Sensory differences (hyposensitivity or hypersensitivity)

# Autistic individual differences



- “If you have met one person with autism, you have met one person with autism!”
- Autistic individuals can present very differently:
  - Cognitive ability and learning
  - Speech, language and communication skills
  - Fine and gross motor skills
  - Sensory profile
- Can show exceptional abilities in certain areas
- Co-occurring diagnoses are common
- Individual needs often fluctuate day-to-day



# Autism presentations and masking



Masking is “the process through which autistic people modify their **natural** social behaviours to **adapt** to, **cope** within, or **influence** the largely neurotypical (non-Autistic) social world” (Cook et al., 2021)

- Can occur consciously or unconsciously, and often takes a significant toll on the person (Miller et al., 2021):
  - Exhaustion and burnout
  - Mental health and links to depression/anxiety
  - Unhealthy or dangerous coping mechanisms
  - Loss of identity or not knowing their “true self”
- Autistic girls and women are often underdiagnosed or misdiagnosed as they do not fit the stereotype for autism or have learned to mask



# Inclusive 'social skills'

- Not all 'social skills' are the same!
- Normalising skills vs functional skills
- What skills **really matter**? How can we support all students to develop these skills in a way that celebrates their differences?

Considering the primary purpose of a social skill

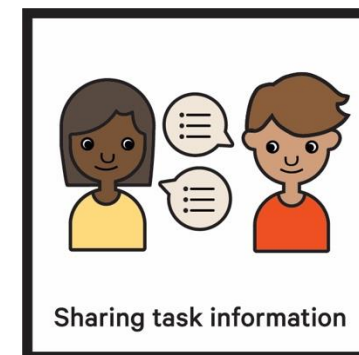
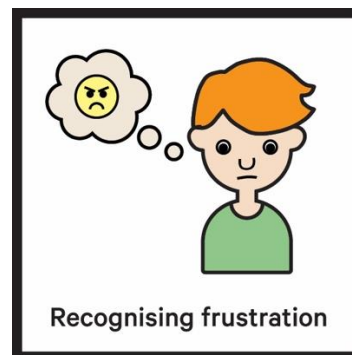


*Normalising (cultural) social skills*



*Functional (collaborative) social skills*

# Examples of functional (collaborative) skills





# Gaming to promote inclusion



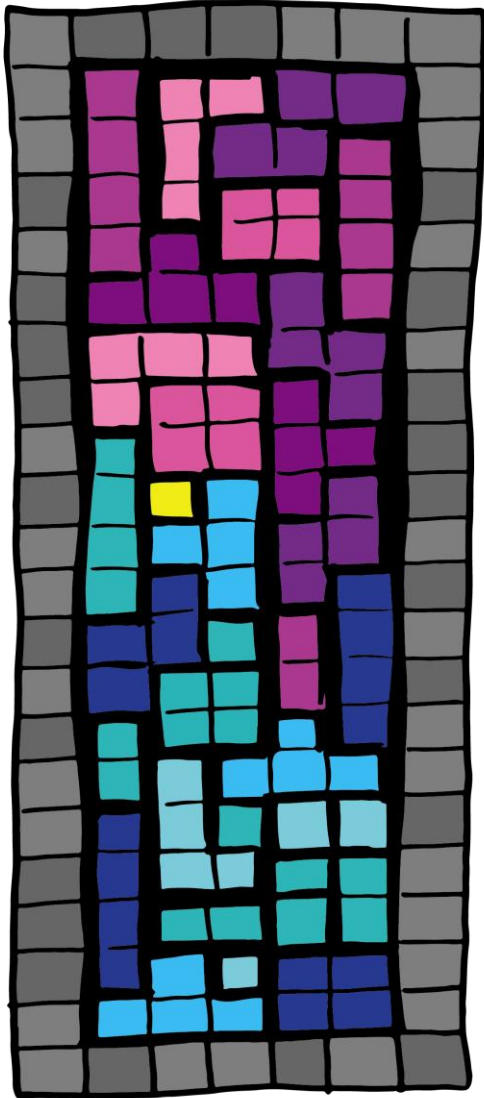
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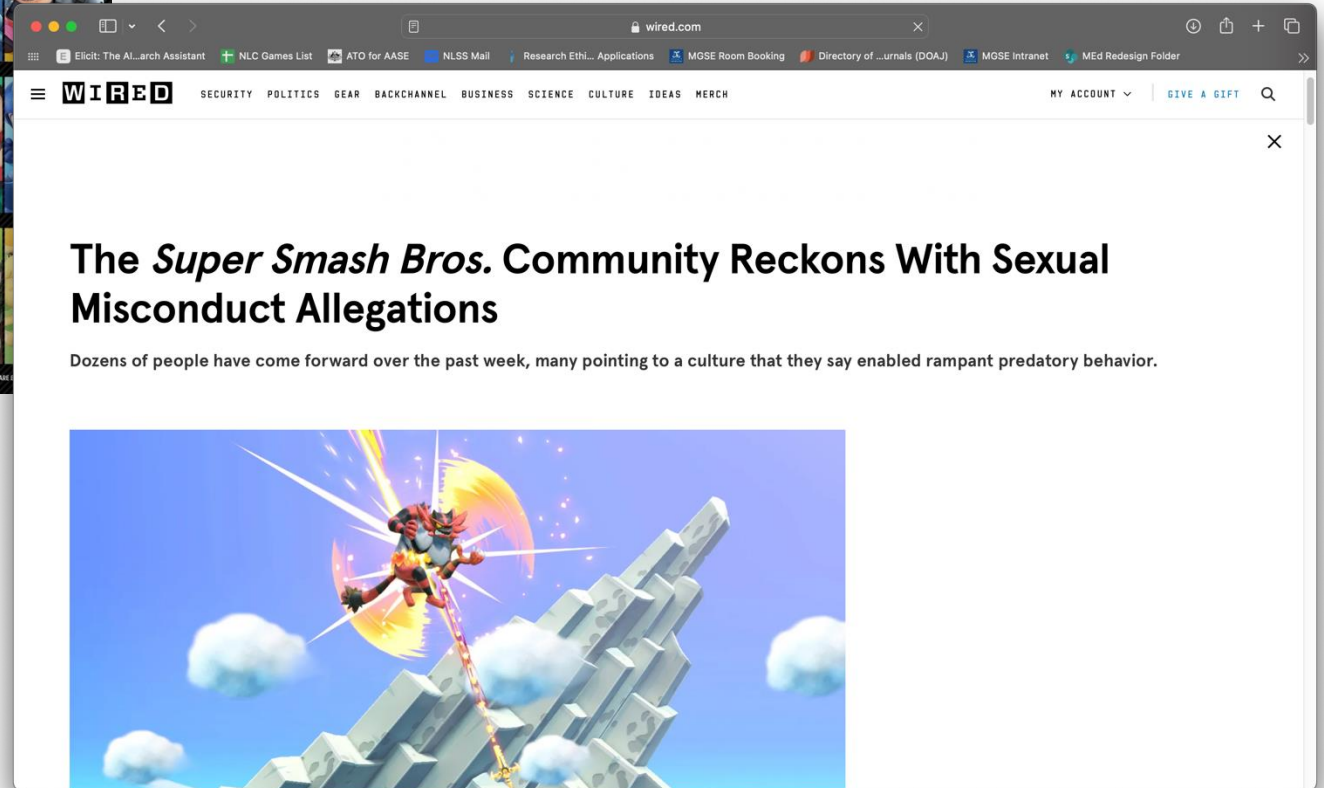


# Everyone is playing...



- According to the 2022 Digital Australia report, two-thirds of the Australian population plays video games, with the average age of gamers being 35 years (Brand & Jervis, 2021).
- Of those who play video games, 53% identified as male, 46% identified as female, and 1% identified as gender diverse or non-binary.
- Shifting the focus to just teenagers, Pew Research Center found that a staggering 97% of teenage boys and 83% of teenage girls in the US regularly play video games (Anderson & Jiang, 2018).
- The global esports market is expected to reach US\$1.87 billion in revenue by 2025, up from US\$194 million in 2014 (Statista, 2023).

# ...But not always welcome



# Two forms of inclusive play

- We research and implement programs that use video games to develop collaborative social skills, build friendships and develop a sense of belonging within our communities.

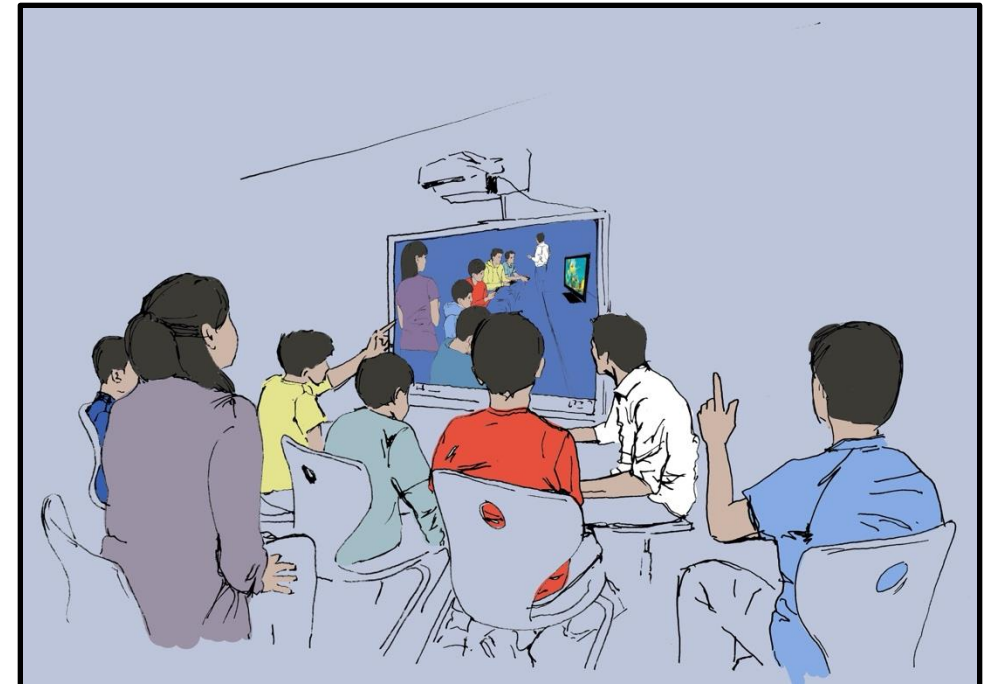
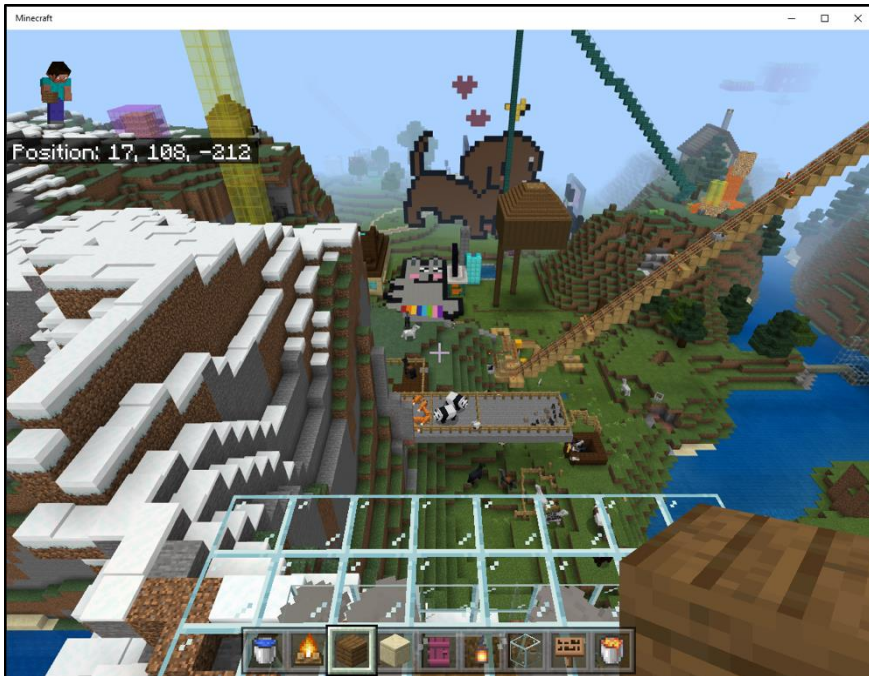
Virtual playground  
model



Inclusive play



Digital games-based  
intervention





# Virtual playgrounds model



- Student-led, with interactions supported by teaching staff when needed
- Focus on encouraging **social connection** and a **sense of belonging** to the community
- The virtual playground model **celebrates the differences** of autism and allows players to **engage on their terms**




# Community expectations for virtual playgrounds



- All gaming communities have socially constructed boundaries that sit outside of the mechanical rules of the game
- One practical method to democratically develop 'rules that work for everyone' is to survey the playing community and then use the responses to co-construct a **values and expected behaviours matrix**
- *What do you need to feel safe and have fun in your virtual community?*

When in the same Minecraft world as other players, what are some things that players should remember to do to make sure everyone is having fun?



Long answer text

# Expected behaviours matrix

	Playing together in a room 	Using voice/text chat (including Discord) 	Playing in the game world 
Always be safe	Give other people personal space.	Protect your personal information.	Check with the server admin before starting PvP.
Always act responsibly	Share by taking turns using the devices.	Let other people have a turn at talking.	Offer to help other players if they look like they need it.
Always show respect	Use a quiet voice so everyone can hear each other.	Use language that is polite and that will make other players feel good.	Ask before changing someone's build.





# Inclusive esports programs



Dr. Matthew Harrison

Jess Rowlings



# What is esports?



## ↓↓↓↑ CHEAT CODE: How can esports be defined?

- Formosa et al. (2022) conducted a systematic review of definitions of esports and found that there is a lack of consensus around a common definition.
- From the numerous possibilities they shared, our preferred definition is the one used by the International Esports Federation because it is broad and highlights both the physical and mental dimensions required for participation:

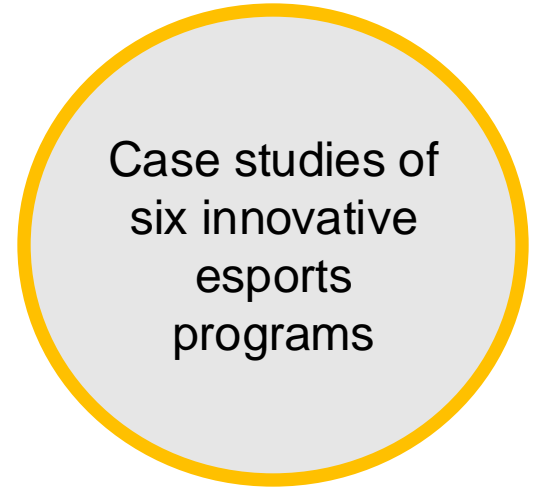
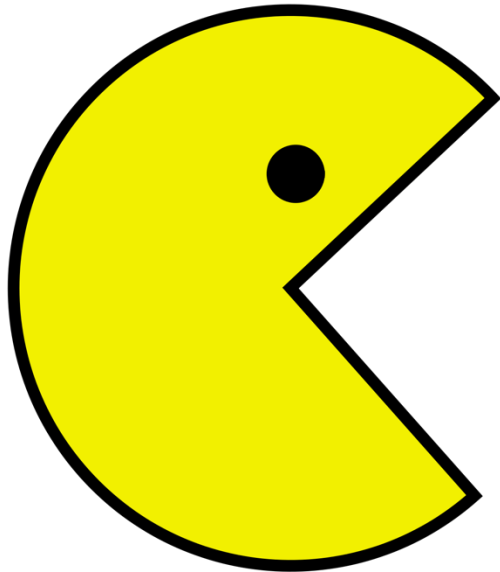
“...a competitive sport where gamers use their physical and mental abilities to compete in various games in a virtual, electronic environment.”

- (Formosa et al., 2022, p. 10)

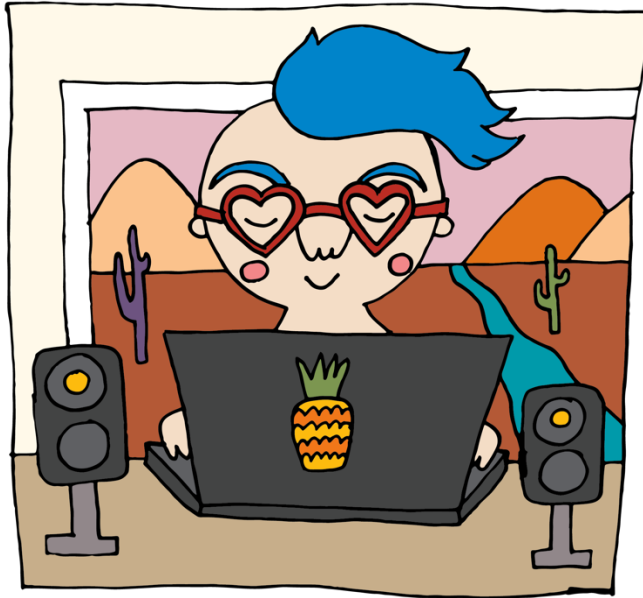
# Our inclusive esports research project



*How can we create the conditions for inclusion within our esports programs?*



# Focus on a range of populations



Supporting female and non-binary players



Supporting neurodivergent players



Supporting players with physical access needs

# The six keys to inclusion



 Key 1: **Belonging**

 Key 4: **Autonomy**

 Key 2: **Interaction**

 Key 5: **Involvement**

 Key 3: **Accessibility**

 Key 6: **Acceptance**



# Enablers and barriers for neurodivergent players



## Examples of enablers

- Video games generally offer a range of communication options (e.g. voice chat, text chat, in-game emotes) that can accommodate and support a range of communication preferences or styles.
- Video games have clear game mechanics and boundaries of play that can align well with the needs of neurodivergent players who work best in structured settings with clear expectations.

## Examples of barriers

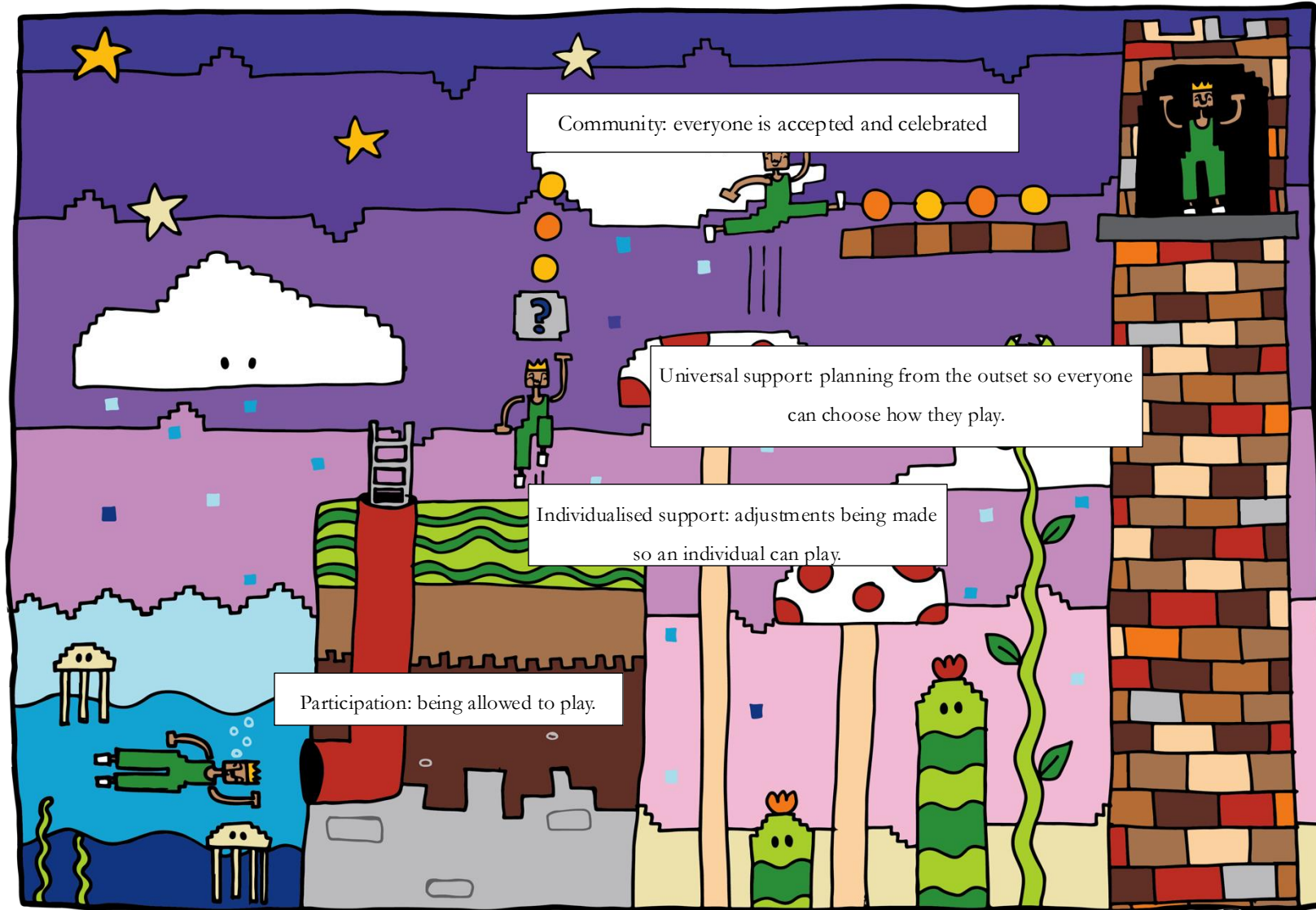
- Labels associated with neurodivergent identities have historically been used as part of 'trash talk' in public online gaming spaces.
- Neurodivergent players may find it more difficult to identify less overt signs of inappropriate behaviour in gaming spaces, and those who are experiencing loneliness can be at greater risk of vulnerability.

# Strategies and supports for neurodivergent players

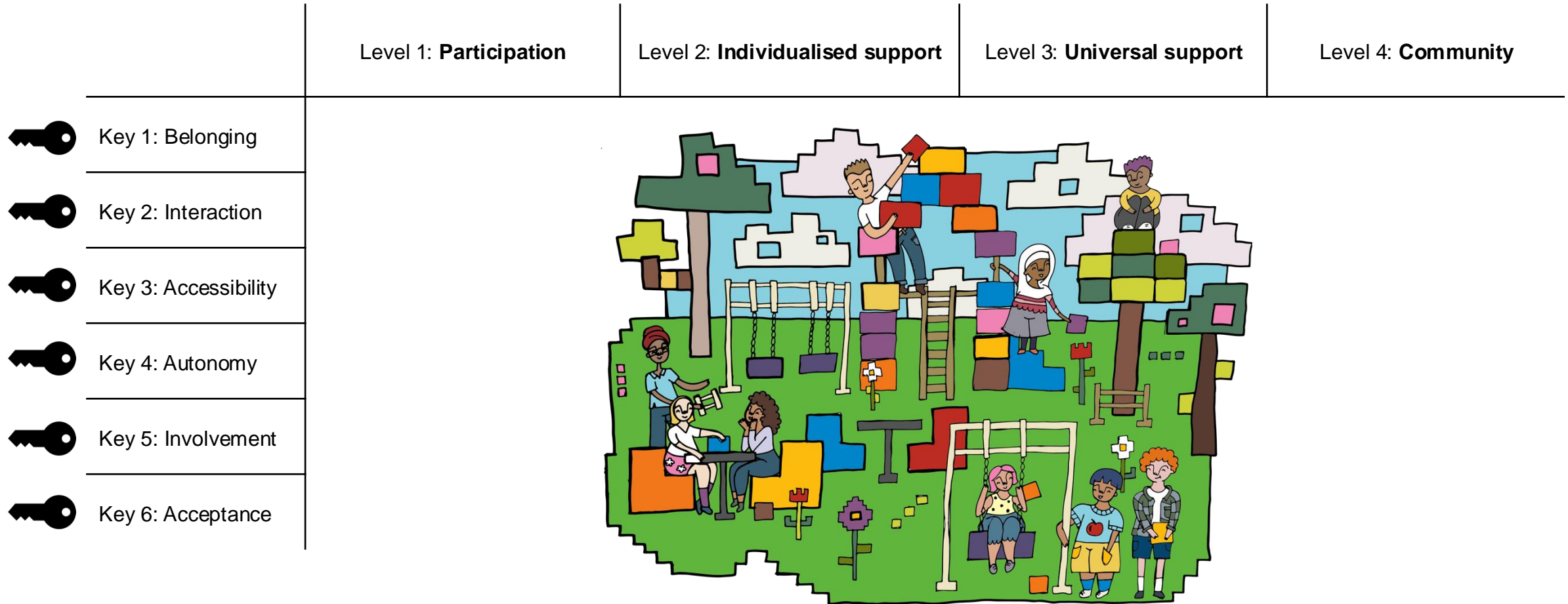


Interaction	Autonomy
Opportunity to be a part of a community:	Full autonomy is where students have opportunities to influence form and context:
<ul style="list-style-type: none"><li>• Build capacity amongst all students in your esports program to work with different communication preferences and strategies</li><li>• Ensure neurodivergent students have access to support throughout collaborative tasks</li><li>• Position neurodivergent students in leadership roles by encouraging them to share their 'expert knowledge' on gaming or having them teach others how to play</li></ul>	<ul style="list-style-type: none"><li>• Support neurodivergent players to choose esports activities that work with their individual areas of strength and need</li><li>• Be open to and encourage feedback from neurodivergent players about what they need to thrive in your esports program</li><li>• Be aware that some neurodivergent players might feel anxious about asking for help, or need additional support to communicate their needs</li></ul>

# Four levels of inclusion



# The Everyone Can Play Inclusive Esports Framework





# Unpacking the framework



		Example indicators of <b>Level 1</b>	Example indicators of <b>Level 2</b>	Example indicators of <b>Level 3</b>	Example indicators of <b>Level 4</b>
<ul style="list-style-type: none"> <li>• <b>Belonging</b></li> </ul>	Formal belonging	A teacher or teaching assistant brings a player to an esports program	Students with diverse needs can enrol in an esports program , but additional support may be required to help them fully participate	All students can enrol in an esports program and supports are available to help students with a range of needs fully participate	All students can enrol and fully participate in an esports program, and the program openly accepts and embraces the diversity of its enrolled members
	Informal belonging			All students in an esports program feel welcome, as if they are part of the group	All students feel secure and welcome in their esports program, that they belong to a player community that supports diversity and difference
<ul style="list-style-type: none"> <li>• <b>Interaction</b></li> </ul>	Opportunities to be a part of a community		A student participates in group esports activities with support from a teacher or facilitator	When designing group activities, an esports program incorporates a range of strategies to accommodate all students' individual needs, preferences, and communication skills	When completing group activities, participants in an esports program demonstrate collaborative skills and consideration towards each others' needs

# Unpacking the framework



		Example indicators of <b>Level 1</b>	Example indicators of <b>Level 2</b>	Example indicators of <b>Level 3</b>	Example indicators of <b>Level 4</b>
<ul style="list-style-type: none"> <li>• Accessibility</li> </ul>	Physical accessibility	A student with a physical disability attends sessions in an esports program	A student with a physical disability works with an assistant to help them play games in their esports program	An esports program plays games that align with the needs of all students participating in the program, including those with physical accessibility needs	A school esports program plays a variety of games and provides hardware options to accommodate a diverse range of physical accessibility needs
	Accessibility to socio-communicative interactions		An individual student uses augmented communication to communicate with others in their esports program	An esports program provides a range of communication options and strategies for all players who participate	A school esports program plays a variety of games, and activities are structured to accommodate a diverse range of communication needs
	Accessibility to interactions in meaningful contexts			Task information is provided using a range of communication strategies to ensure all players understand the purpose of activities in their esports program	All participants understand the purpose of activities in an esports program, and players are supportive and accommodating of others' individual needs

# Unpacking the framework



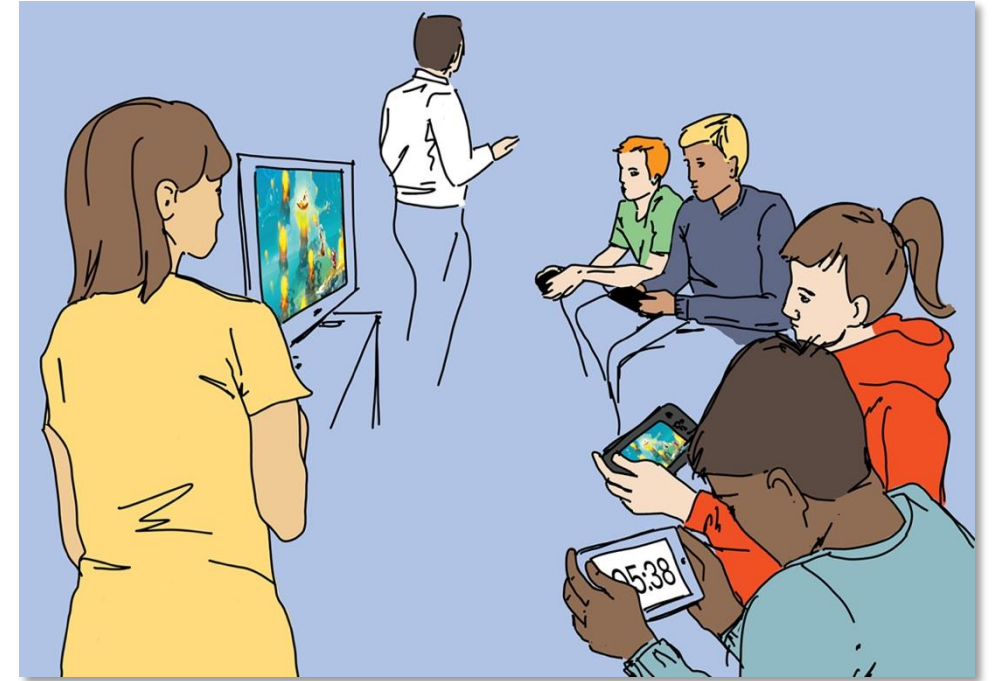
		Example indicators of <b>Level 1</b>	Example indicators of <b>Level 2</b>	Example indicators of <b>Level 3</b>	Example indicators of <b>Level 4</b>
<ul style="list-style-type: none"> <li>Autonomy</li> </ul>	Opportunities to influence form and context			All students are given opportunities to make decisions in their esports program, and a range of strategies are provided to help them do so	All students are given a range of opportunities to make decisions in their esports program using various strategies that consider and support the diversity of its participants
<ul style="list-style-type: none"> <li>Involvement</li> </ul>	Subjective experience				Participants enjoy completing activities in their esports program, and demonstrate investment through active participation
<ul style="list-style-type: none"> <li>Acceptance</li> </ul>	Being acknowledged and accepted by others				Participants in an esports program recognise each others' differences, celebrate strengths, and are supportive towards areas of challenge





# Digital games-based intervention

- Structured, systematic program but **student voice still matters**
- Use of visual supports
- Interventionist roles for teaching staff and allied health workers
- A system for intervention that is co-designed with students who have neurological differences and disabilities.
- Games **create the conditions** for collaboration, while facilitators **explicitly teach the skills** during skill acquisition followed by **coaching to support skill performance.**



# Digital games-based intervention



**Stage A:** Skill instruction through *video modelling* and *video review*



**Stage B:** *Coaching* during play



**Stage C:** *Guided reflection*

# Stage A – skill instruction

- During Stage A, participants are explicitly taught:
  1. The names of the Target Skills
  2. The steps that can be performed to use the Target Skills
  3. The situations or contexts in which the Target Skills can be used





# Video review during Stage A



- A great learning tool for participants to see how they use Target Skills in the game and physical worlds
- Video footage of participants playing together that works similar to a game tape or 'Let's Play'
- Watch video together and discuss collaborative skills
- Students may need prompting to scaffold discussion
  - Which skill is being used?
  - How did they show this skill?
  - How did using this skill help the team?



# Stage B – supported gameplay

- Participants practise the Target Skills through cycles of supported gameplay and feedback on their performance
- 6-10 minutes of cooperative gameplay
  - Recording use of Target Skills
  - Active coaching throughout gameplay
  - Reinforcement of goals and individual support
- 2 minutes of Time Out
  - Feedback on participants' use of skills
  - Changing roles



# Stage C – guided reflection

- During Stage C, participants reflect on:
  - Overall team performance
  - Which Target Skills they used and why
  - The Target Skills they want to focus on next session
- Facilitators guide the reflective process with the support of reflection charts
- Can be done at both group and individual levels







# Creating the conditions for collaboration



Player identity  
within the team

## Sub-categories

- ▶ Avatars shaping individual identity within the group
- ▶ The role of non-playable characters in forging a collective identity
- ▶ Game feedback on individual and team performance

Rules of play to  
manufacture  
interaction

## Sub-categories

- ▶ Interdependent progress through designed constraint
- ▶ Limiting the use of shared avatars
- ▶ Game mechanics promoting leadership and apprenticeship
- ▶ Failure as learning rather than punishment

The impact of  
level design upon  
the application of  
social skills

## Sub-categories

- ▶ Level signposting to support player progress
- ▶ Environmental interactivity fostering player interaction
- ▶ Inducing stressful situations
- ▶ Sustaining player motivation through the introduction of new mechanics

Game design as  
an enabler for the  
inclusion of all  
players

## Sub-categories

- ▶ The challenge of the third dimension
- ▶ Controllers creating an inclusive interface between the players and the game
- ▶ Tools aiding multiple means of communication and planning

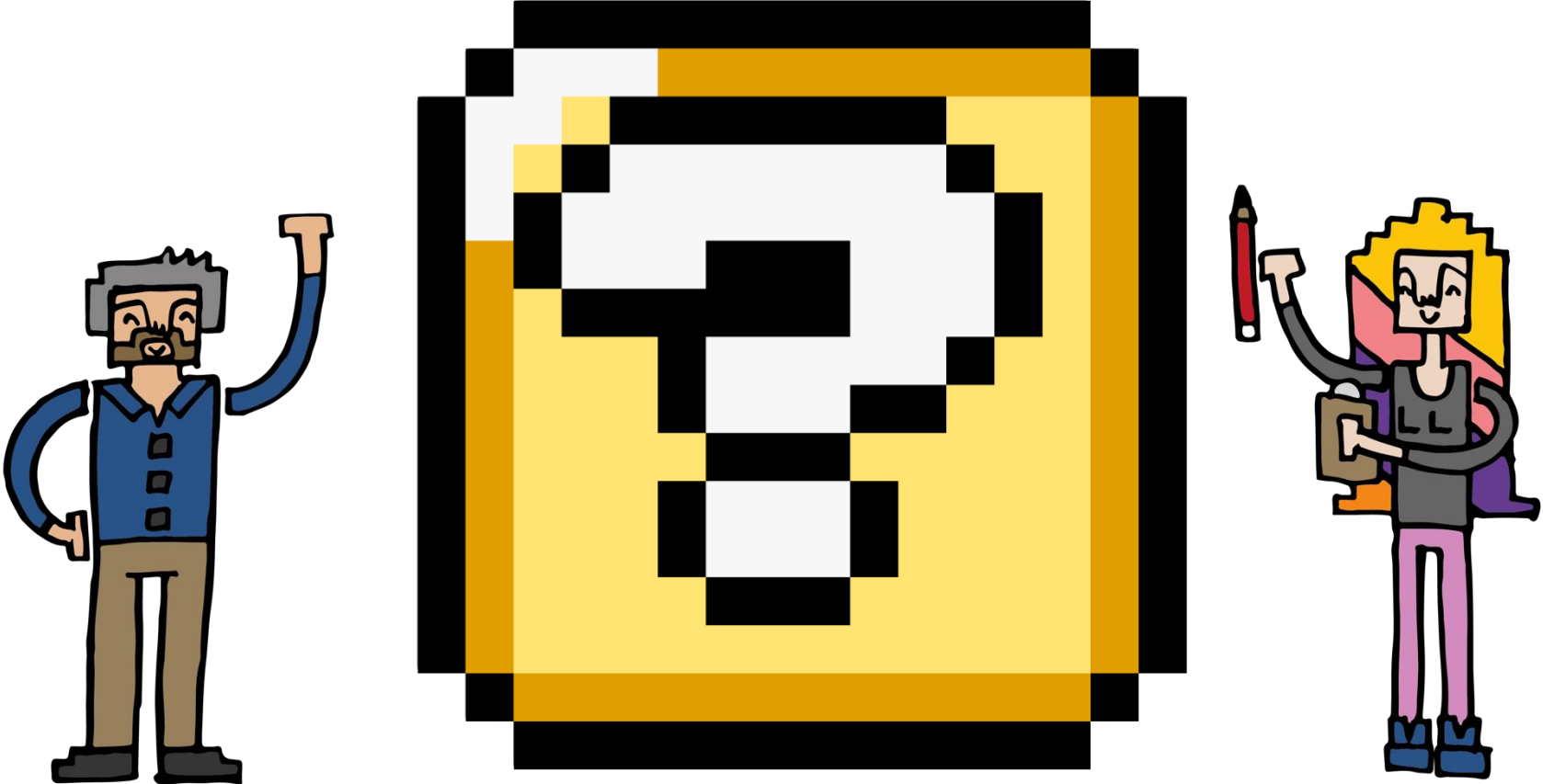
# Game mechanics promoting leadership and apprenticeship



# Failure as learning rather than punishment

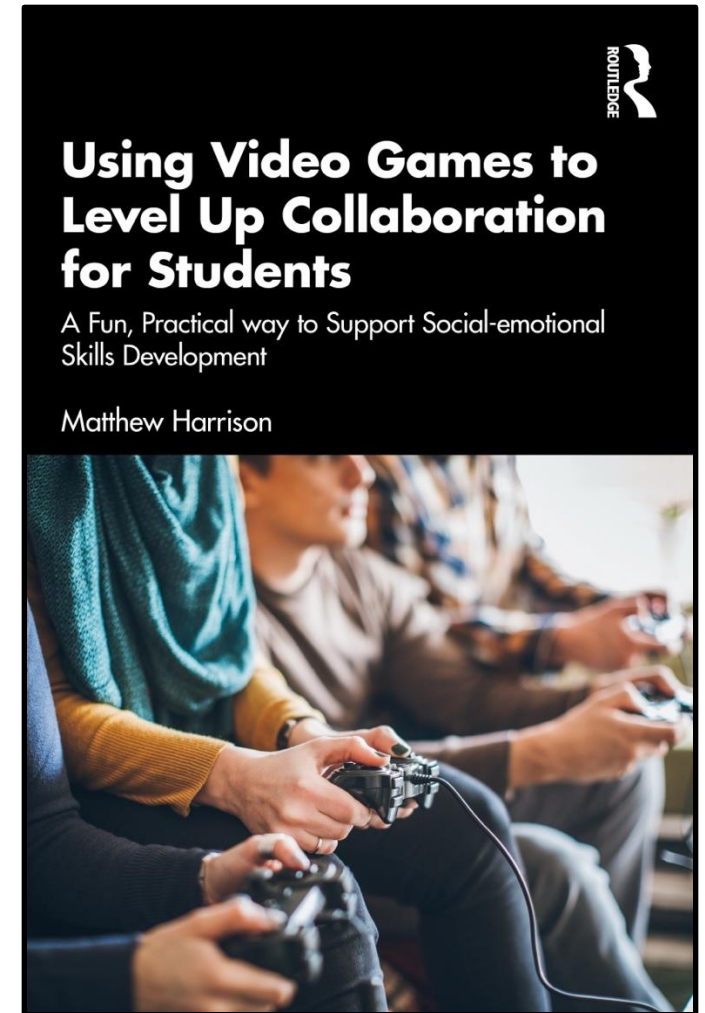
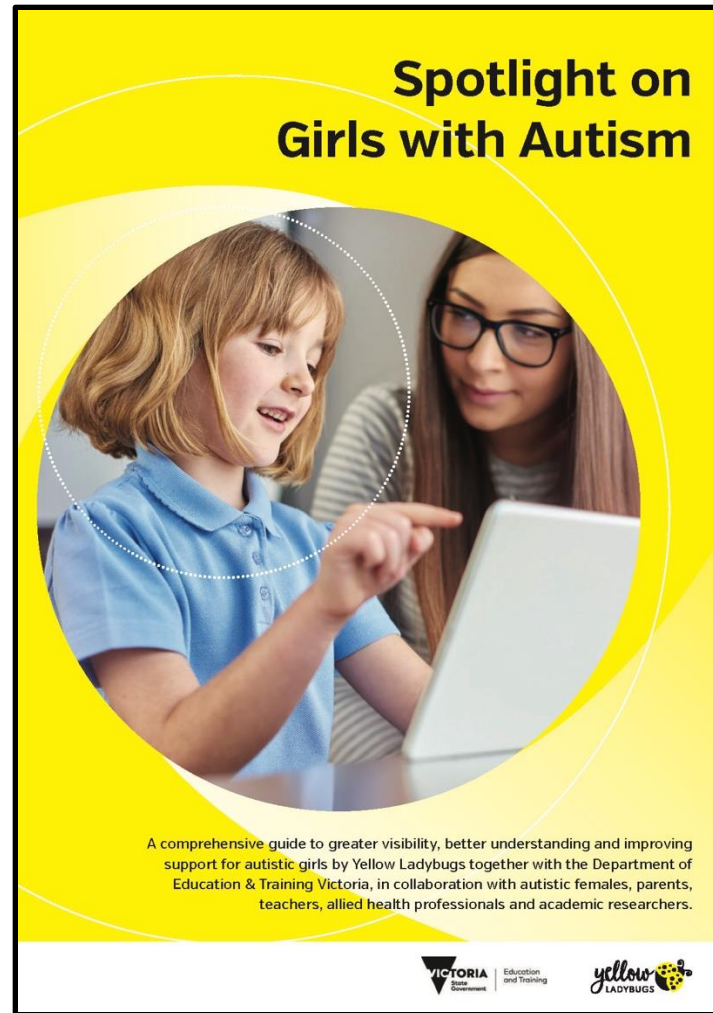
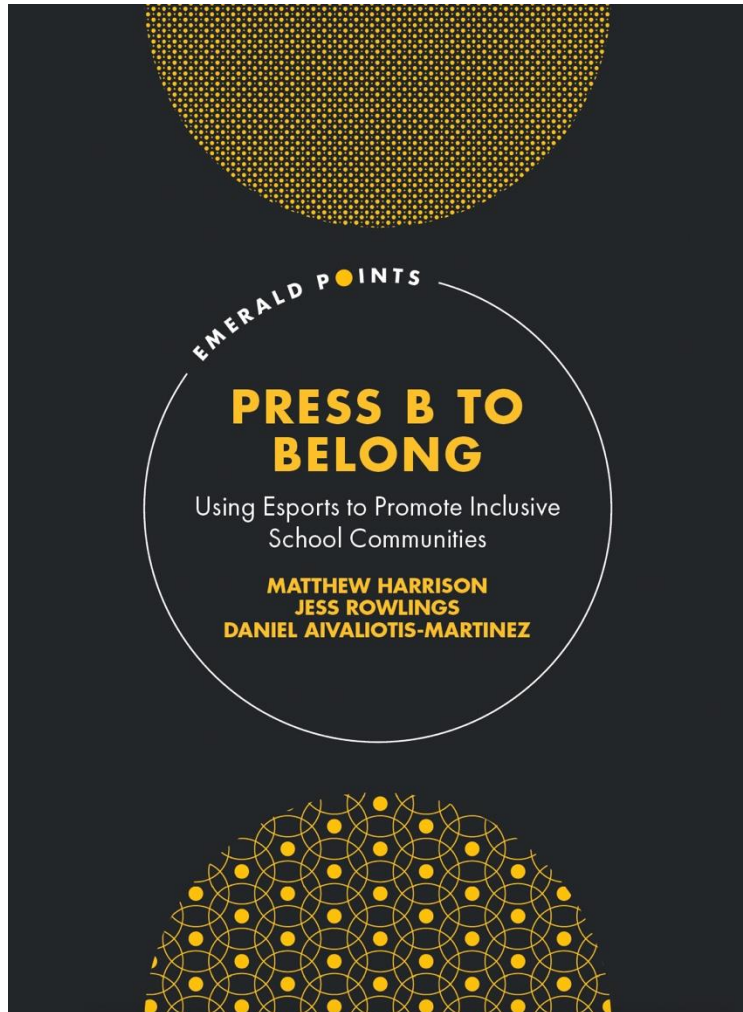


# Questions and answers





# Next steps and additional resources



# Press B to Belong: Creating Inclusive Gaming Programs in School Communities



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