# Mr. Tumbles' *Maya* and the Multiplicity of Personas: Leveraging Illusion and Reality in Educational Game Design for SEN Language Learners

**Subhangi Namburi**
University of Nottingham, UK

subhangidasnamburi@gmail.com

**Abstract:** Educational research for Special Educational Needs (SEN) students has increasingly recognised the necessity for tailored approaches that accommodate diverse learning needs. Despite advancements, there remains a significant gap in the development of digital interventions, particularly video games, that cater to the language acquisition and communicative needs of SEN learners. This study explores how psychological paradigms from the popular children's television show 'Mr. Tumble' (made specifically for children with special educational needs) can inform the creation of language learning video games. By analysing the use of 'Makaton' a multimodal communication tool that combines signs, symbols, and speech the study highlights the potential of integrating similar techniques into game design to enhance accessibility and engagement for SEN learners. The philosophical understanding of *Maya*, which emphasises the illusory nature of multiplicity, serves as a theoretical framework to understand how a single character can embody multiple roles within a game, providing a consistent yet diverse learning experience. This approach not only aids in language comprehension but also fosters emotional and social development through relatable Non-Player Characters (NPCs) designed to interact meaningfully with learners. The study posits that incorporating these elements can create immersive, emotionally resonant educational experiences and the development of parasocial relationship between the learner and the digital intervention, that better meet the needs of SEN students, ultimately leading to more inclusive and effective language learning environments. Children simultaneously navigate multiple roles and perspectives, each reflecting a different aspect of reality in make-believe play. The critical importance of integrating this cognitive theoretical framework similar to that into the design of NPCs in educational video games is highlighted in this research. The paper argues that the paradigms of 'multiplicity of mirrors', when effectively incorporated into NPC design, can reflect different aspects of language, culture, and social interaction, offering learners a more immersive and multifaceted learning experience.

**Keywords**: Para-social relationship, Special Educational Needs, Inclusive Education, Non-Player Characters, Empathy Mapping, Make believe Play

## 1. Introduction

The Early Years Foundation Stage framework 2024 acknowledges the need for a curriculum that provides equal opportunities and inclusion, meeting the individual needs of all children especially those with special educational needs (SEN) (Sheehy & Duffy, 2009). The building blocks of literacy and communication are speaking and listening skills, and these foundational skills are crucial for the development of reading and writing as well. The teaching of quality phonics is imperative in the teaching of reading, with systematic synthetic phonics being proven to be the most effective method for teaching children with SEN to communicate. However, while the importance of such phonics programs is evident, these programs alone are not sufficient in supporting the comprehension of pupils with SEN (Solity, 2006). Whilst it is appealing to believe that of the development of the education system as a steady and inevitable progression, the thinking and beliefs of older practices do not necessarily disappear in the new era. Vestiges of older beliefs remain within later attitudes and practices (Crowe, McLeod & Ching, 2012).

Educational spaces are still primarily built on integrative mechanisms, assimilating children into existing groups and systems. However, there is a lack of development in creating new educational environments that are inclusive wherein new environments are built; that prioritises creating an environment that values and respects all individuals, regardless of their differences (Namburi & Hopkins, 2023).

This gap highlights a missed opportunity to foster an educational setting that not only accommodates diversity but actively celebrates and incorporates it into the learning experience. Access to communicative interactions is important for the educational participation and social inclusion of students with SEN. Researchers have reported low frequencies of communicative interaction between students with SEN and their teachers, potential reason being limited understanding about their needs. Students with SEN have limited engagement in classroom activities and the frequency of communicative interactions remain low because they do not have the space to acquire and practice communication skills (Evmenova & Behrmann, 2011) (Gu et al., 2023). Schools need to become an optimal place to better understand how to support students with SEN to make the education system a place where they realise their potential as communicators (Evmenova & Behrmann, 2011).

In the United Kingdom, approaches have been pre- dominantly monolingual, with a focus on the development of spoken English for communication and as a means of instruction. Monolingual "nonvisual/visual continuum" exists, with approaches strongly emphasising auditory over visual modes of English.

Extensive research has been conducted on developing video games for teaching languages and communication skills to children. However, there has been comparatively less focus on creating similar educational tools tailored specifically for children with SEN. The growing disparity in the development of proper communication skills and language use between children with special educational needs and those in mainstream schools remains largely unaddressed.

There is a critical need to develop more literacy and language learning video games with user interfaces that are accessible and friendly for students with special educational needs (SEN). One approach to achieving this could be by incorporating insights and observations from the most-watched children's television shows in the UK, Mr. Tumble. By analysing and reflecting the interaction style and use of Makaton (cued speech language, which uses a series of specially created handshapes near a speaker's lips to cue phonemes) in the popular show, developers can create game interfaces that are engaging, intuitive, and supportive of SEN learners. This approach can help ensure that educational games are inclusive and cater to the diverse needs of language learners because if an 'emotional barrier,' also known as an 'affective filter,' is present, it can prevent the acquisition of comprehensible input by limiting the amount of information received by the language acquisition game by learners with SEN (Walker, 1987).

The CBeebies ‘Mr. Tumble-Something Special’ show offers a refreshing and innovative approach to communication and language learning for children with special educational needs.

The show Mr. Tumble has demonstrated the effectiveness of enabling children with SEN to become conscious of their language use and process language at a deeper level. In the show Mr. Tumble uses Makaton, a multi-modal language program based on the principles of signing, symbols, and speech, provides additional support in this area. This approach not only makes language comprehensible but also considers the emotional needs of learners (Mistry & Barnes, 2013) (Walker, 1987).

This sets a precedent for emphasising the importance of social experiences in language learning, which can be further incorporated into the development of Non-Player Characters (NPCs) in educational video games that foster meaningful interactions and relationships.


**Figure 1: Image of Mr. Tumble and the characters he portrays on his show (Sourced from Google)**

## 2. Review of existing literature:

The social experience children with SEN have when they play language learning video games should be of primary focus. Development of Non-Player Characters (NPCs) in games can be a key factor to engage a player and bring about this experience. Over time, a pattern of interactions between a player and agents develops into a relationship, if the game and its NPCs are designed to accommodate this the NPCs with such capabilities will provide a new experience when playing games.

Developing game companions that are capable of perceiving and exhibiting emotions, complete with the ability to develop simple social relations over time is essential to learners with SEN. Developing a game companion that forge social relations and make appropriate use of social signals would increase in player experience when

playing the game with the additional influence of interactive emotion, personality and relationships to the game companion's behaviours (Chowanda et al., n.d).

A key goal in designing the language learning game companion would be to make them relatable and believable. The idea of "believability" is not directly proportional to reliable characters but development of one that provides the illusion of life, and thus permits the audience's suspension of disbelief.

The focus should not be on creating Non player characters that are realistic, but ones that do not break the illusion. In games, implementing the illusion results in an increase of player experience. Social believability in games improve the experience. Character's believability influences the players immersion and enhances the game-play experience. The aim is then to develop a user experience that has an emotional, cognitive and behavioural connection between a user and a resource. That connection can then be linked to emotion, personality and social relationship aspects. The uniqueness of a character in comparison to others in the game and their ability to exhibit emotions provides a feeling of immersion to the player. Games such as The Sims, Animal crossing, My time at Portia, House flippers have the ability to forge a relationship with the players and their NPCs as a part of their storyline. Research has been done to enhance the player experience by improving their believability. However, only limited research has been done to incorporate emotion, personality and social relationships models together. Social relationships models can be adjusted to enrich the game story as well (Calvert and Wilson, 2008).

The portrayal of characters significantly impacts the learner's engagement. The distinction between shows like Mr. Tumble, Dora the Explorer, Blue's Clues lies in the portrayal of characters. In Dora the Explorer and Blue's Clues, each character is represented by distinct individuals, contributing to a diverse character ensemble. In contrast, Mr. Tumble features a unique format where the titular character, Mr. Tumble, assumes the roles of all other characters within the show. This is highlighted by the consistent use of nose paint makeup across all his portrayals, making it evident to children that it is the same individual embodying multiple personas. This approach is also visible in show's like Sesame Street, Magic school bus and Teletubbies.

## 3. Mr. Tumbles' illusion of multiplicity:

The concept of an individual embodying multiple personas, as seen in shows like Mr. Tumble, mirrors the philosophical notion of *Maya* (Illusion) in *Vedanta* (concepts of the soul) metaphysics. *Maya* represents the illusion of multiplicity, where a singular reality manifests as various forms and identities. This illusion creates the perception of distinct, separate entities, despite being rooted in a single underlying reality.

*Maya* is the pivotal concept in Vedanta metaphysics which declares the external world and the individual self to be illusory. *Maya* is relational rather than intrinsic. This relational truth allows the finite beings to perceive and relate to the infinite. *Maya* enables a relationship between the finite and infinite, allowing the perception of this relationship. It is an illusion that manifests as a lesser degree of reality, existing only in relation to the ultimate reality. It is the semblance of reality (like the reflection of the sun in a pot of water—real yet not real) According to *Advaita Vedantas* Mirror models the main focus of multiplicity of mirrors is on the reflection of consciousness, the illusory multiplicity of individual selves. The reflection analogy addresses the interaction between consciousness and intellect (Dimock, 1991).

This is when something is cognised in itself without objectively existing, and (while existing objectively) is not cognised. The illusory nature of *Maya*, allows things to appear that do not have inherent reality.

In the same way in the episodes of Mr. Tumble perceived realities can influence interactions and relationships. This is not merely an illusion but a relational power that enables viewers to experience reality at a certain level, distinct from the ultimate truth. This relational aspect of *Maya* can be leveraged to enhance social interactions and relationships, particularly in creating believable and meaningful connections.

*Maya* allows for a semblance of reality that is perceivable, though not fully comprehensible. This semblance can manifest in various forms, such as compassion, love, or other emotions that bind people together. The theological understanding of *Maya*, as a power makes possible an additional aspect without corresponding reality to appear, facilitating a relationship between the finite and the infinite. This dual nature of *Maya*—being real in one sense and not real in another can be a powerful tool in social relations, as it allows individuals to connect over shared perceptions and experiences, even if they are not grounded in absolute reality (Oxford University Press, n.d.).

Mr.Tumble creates a shared sense of reality. He presents himself and the narratives he shares in such a way that it creates a common ground, even if this is not entirely based on an objective truth. This shared reality, while

not absolutely true, becomes a basis for trust and rapport, enhancing the believability of the interactional. His ability to present an appearance of reality without being fully real allows for the management of emotional connections. For example, in the relationships he shares, expressions of empathy or compassion, although they may not entirely capture the true nature of the situation, create a comforting and supportive environment. This is similar to how *Maya* functions in enabling finite beings to relate to the infinite.

His interactional patterns align with the social phenomena of role-playing and the use of social masks. He adopts certain roles or personas in different social contexts to navigate relationships effectively. These roles, while not entirely representative of an individual's true self, help in maintaining social harmony and fostering meaningful interactions. The interplay between these roles and the underlying reality mirrors the relationship between *Maya* and the ultimate truth.

He plays a crucial role in the lives of children by shaping social perceptions and interactions; enhancing the believability and quality of interactions, making his personas a potent tool in forging and maintaining social relationships.

Mr. Tumble effortlessly presents the perceived plurality of individual selves, all of which are reflections of the singular ultimate reality, underscoring the interconnectedness of individuals and the projection of a singular underlying consciousness through multiple personalities.

The social interactional patterns learnt from Mr. Tumble could be integrated into a framework for social and emotional game companions to enhance their believability and quality of interaction in language learning games specifically designed for learners with SEN.

Interactive media, where children can control or influence the actions of a character, have further proven to enhance cognitive skills like critical thinking, decision-making, and creativity. Characters in shows are designed to be engaging and approachable, speaking directly to the camera as if addressing the child personally. This direct engagement has helped children feel like they have a personal relationship with these characters. Mr. Tumble engages children by asking them questions and pausing to allow them to respond, creating an interactive experience (Calvert and Wilson, 2008). This engagement fosters a parasocial relationship where children feel as though they are friends with him. Such relationships enhance a child's understanding of their own self-regulated metacognitive educational skill (Namburi & Hopkins, 2023). When Mr. Tumble demonstrates problem-solving or language skills, children who feel connected to him are more likely to internalise these lessons and apply them in their own lives.

**Figure2: A visual representation of his persons (Sourced from Google)**

## 4. Mr. Tumble episodes

In the episodes of 'Mr. Tumble he is seen interacting with children who have disabilities and SEN and involves them in activities and themes that teach them about communication, integral life skills, and interaction. The episodes under the "Something Special" banner directly address and engages with its neurodivergent audience, making every child feel seen and valued. Across it's episodes the show covers topics themed around everyday experiences and places that children with SEN communication learners experience in real life.

1. Children visit the park, supermarket, and post office, friends' houses providing children with a virtual experience of public spaces and what one can do there.
2. Visits to the zoo, farms, lakes, playground, museum are common, where children learn about animals, nature, and historical artifacts.
3. Engaging in daily activities like going to school, cooking, playing games.

4. Being a part of events like birthdays, Christmas, festivals, explaining traditions and customs; Introducing children to global cultural activities, fostering diversity and inclusion.
5. Learning about academic concepts like numbers, animals, flora and fauna, counting, identifying colours, and recognising basic shapes. These are integrated into playful activities or explorations of different socio-cultural environments.
6. In the beginning and ending of each episode there is a strong emphasis on the development of communication skills using Makaton signs and symbols, helping children express themselves and understand others.
7. Many episodes explore daily routines like getting ready in the morning, meal times, and bedtime routines, helping children understand and adapt to daily life activities and uncertainty of events.
8. Each episode is structured to be inclusive by using visual aids, repetition of concepts during the same episode, and Makaton signing to ensure effective engagement.
9. Mr. Tumble interacts with both children and adults during each episode, modelling polite social interactions.
10. Biweekly episodes focus on engaging children in arts and crafts, encouraging creativity while developing fine motor skills.
11. All episodes include singing and dancing to repetitive songs that incorporate Makaton signs.

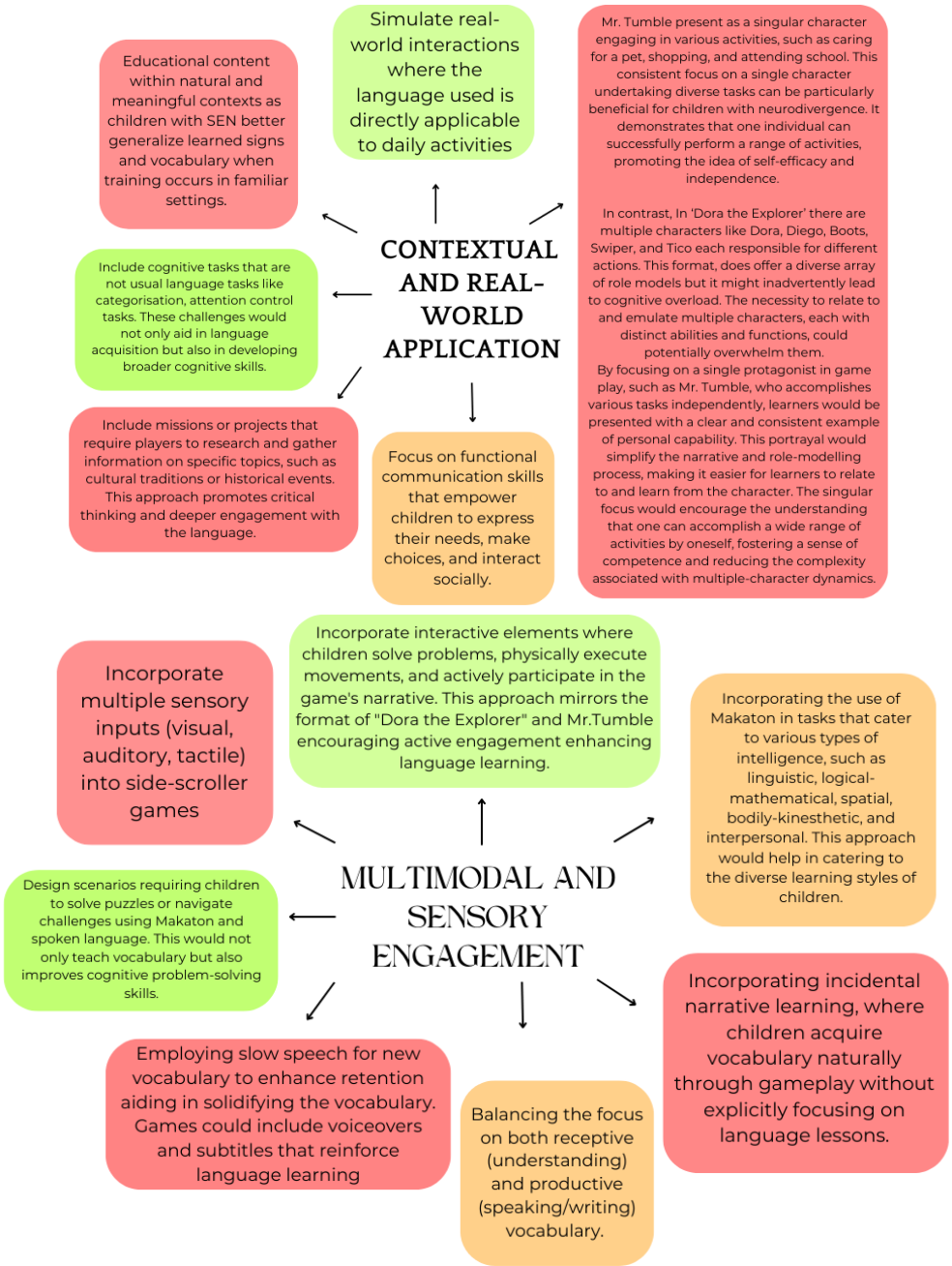
These episodes are specifically structured in a way that the language development is accessible to children with learning and communication difficulties and who rely on alternative communication methods.

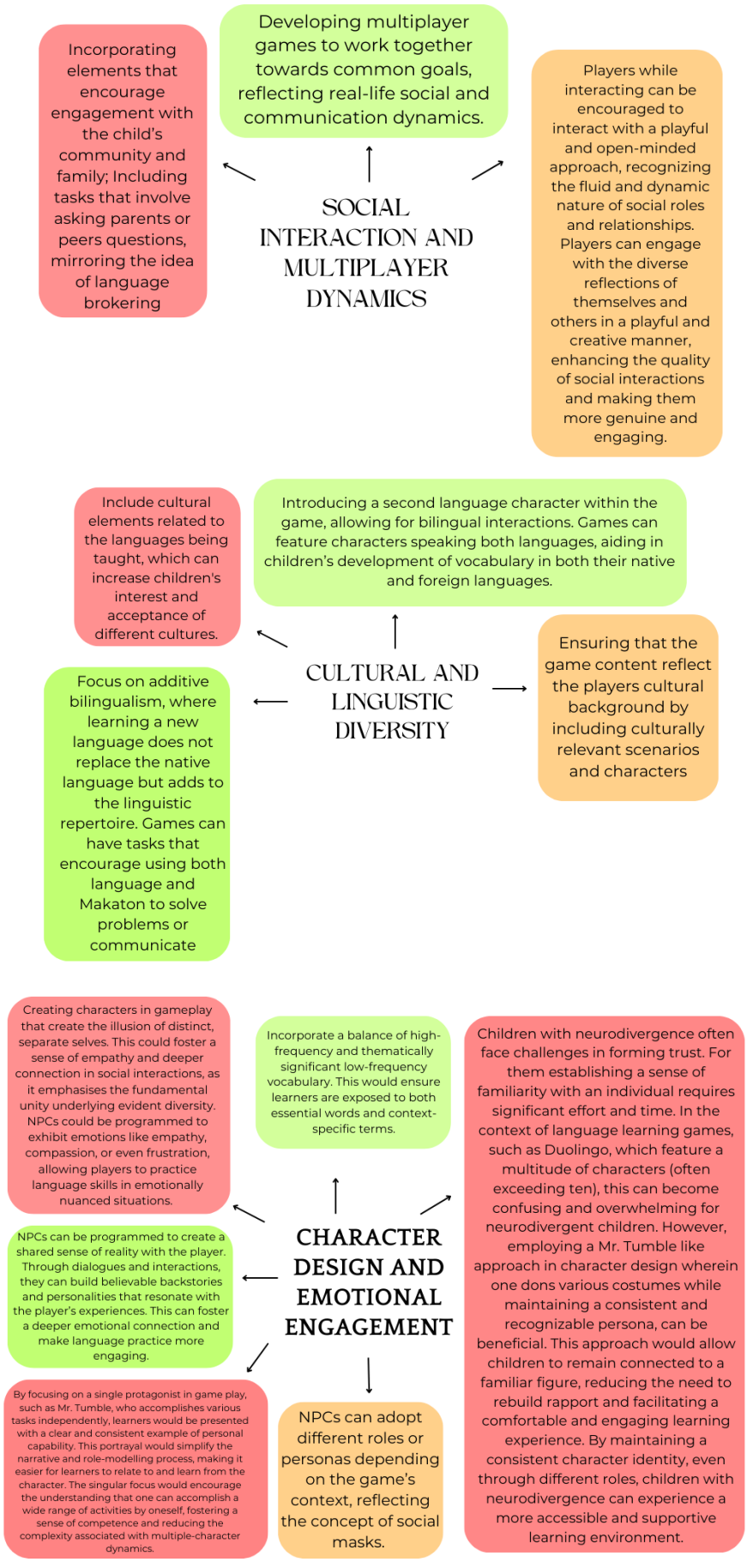

**Figure 3: Across it's episodes the show covers topics themed around everyday experiences and places that children with SEN experience in real life. (Images from Google)**

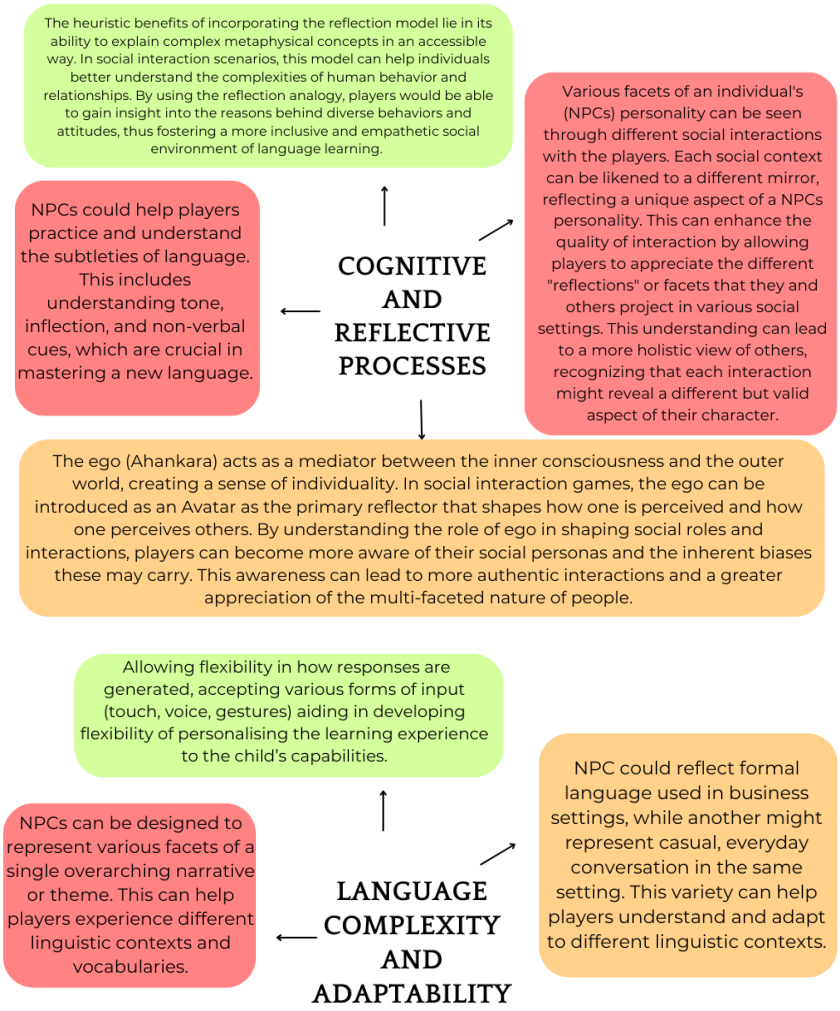
## 5. Developing educational games that incorporate features inspired from Mr. Tumble

Using personas in the design process could help develop a stronger sense of empathy towards users. By engaging with detailed personas, developers could be better able to understand the needs, desires, and challenges faced by SEN users, encouraging a user centred approach. Developing personas would help shift the focus from the designer's own preferences and biases to the needs of the SEN users, fostering creativity that is more aligned with user expectations and real-world scenarios (Calvert and Wilson, 2008). Research is being conducted on the development of storylines in language learning games engaging players in dialogues and decision-making processes, similar to the interactive elements of "Dora the Explorer". What now needs to be developed in these games are NPCs that exhibit emotions like empathy, compassion, or even frustration, allowing SEN players to practice language skills in emotionally nuanced situations whilst also developing a para-social relationship with the NPC (Namburi & Hopkins, 2023).

To develop communication and language learning video games that are inclusive of children with special educational needs, observations from the show Mr. Tumble can be integrated.




Developing multiplayer games to work together towards common goals, reflecting real-life social and communication dynamics.
Incorporating elements that encourage engagement with the child's community and family; Including tasks that involve asking parents or peers questions, mirroring the idea of language brokering
Players while interacting can be encouraged to interact with a playful and open-minded approach, recognizing the fluid and dynamic nature of social roles and relationships. Players can engage with the diverse reflections of themselves and others in a playful and creative manner, enhancing the quality of social interactions and making them more genuine and engaging.
SOCIAL INTERACTION AND MULTIPLAYER DYNAMICS
Include cultural elements related to the languages being taught, which can increase children's interest and acceptance of different cultures.
Introducing a second language character within the game, allowing for bilingual interactions. Games can feature characters speaking both languages, aiding in children's development of vocabulary in both their native and foreign languages.
Ensuring that the game content reflect the players cultural background by including culturally relevant scenarios and characters
CULTURAL AND LINGUISTIC DIVERSITY
Focus on additive bilingualism, where learning a new language does not replace the native language but adds to the linguistic repertoire. Games can have tasks that encourage using both language and Makaton to solve problems or communicate
Creating characters in gameplay that create the illusion of distinct, separate selves. This could foster a sense of empathy and deeper connection in social interactions, as it emphasises the fundamental unity underlying evident diversity. NPCs could be programmed to exhibit emotions like empathy, compassion, or even frustration, allowing players to practice language skills in emotionally nuanced situations.
Incorporate a balance of high-frequency and thematically significant low-frequency vocabulary. This would ensure learners are exposed to both essential words and context-specific terms.
Children with neurodivergence often face challenges in forming trust. For them establishing a sense of familiarity with an individual requires significant effort and time. In the context of language learning games, such as Duolingo, which feature a multitude of characters (often exceeding ten), this can become confusing and overwhelming for neurodivergent children. However, employing a Mr. Tumble like approach in character design wherein one dons various costumes while maintaining a consistent and recognizable persona, can be beneficial. This approach would allow children to remain connected to a familiar figure, reducing the need to rebuild rapport and facilitating a comfortable and engaging learning experience. By maintaining a consistent character identity, even through different roles, children with neurodivergence can experience a more accessible and supportive learning environment.
CHARACTER DESIGN AND EMOTIONAL ENGAGEMENT
NPCs can be programmed to create a shared sense of reality with the player. Through dialogues and interactions, they can build believable backstories and personalities that resonate with the player's experiences. This can foster a deeper emotional connection and make language practice more engaging.
By focusing on a single protagonist in game play, such as Mr. Tumble, who accomplishes various tasks independently, learners would be presented with a clear and consistent example of personal capability. This portrayal would simplify the narrative and role-modelling process, making it easier for learners to relate to and learn from the character. The singular focus would encourage the understanding that one can accomplish a wide range of activities by oneself, fostering a sense of competence and reducing the complexity associated with multiple-character dynamics.
NPCs can adopt different roles or personas depending on the game's context, reflecting the concept of social masks.




## 6. Limitations of Incorporating the cognitive frameworks of Mr. Tumble into NPC development:

Learners could overidealise the characters perceiving them as perfect or infallible or develop a confusion between fantasy and reality. Overreliance on the NPCs for cognitive stimulation could lead to passivity if the NPC is not interactive or educational. This could create unrealistic expectations about real-life relationships. Leading to disappointment or frustration when real people do not meet these idealised standards (Ariyurek, Surer and Betin-Can, 2023). Learners in early developmental stages could develop strong parasocial relationships that can blur the boundaries of illusion and reality, hindering their understanding of social interactions and relationships (Calvert and Wilson, 2008). The characterisation of SEN learners as a homogeneous group has been oversimplified in language learning games like Duolingo. SEN learners encompass a broad spectrum of conditions, including ASD, ADHD, dyslexia, and other cognitive or developmental challenges. Each of these conditions presents distinct cognitive, emotional, and learning profiles that require specialised and differentiated educational interventions. Incorporating the diversity within the SEN population is necessary to ensure the effectiveness of these interventions. The key challenge in implementing such differentiated NPC designs lies in gathering comprehensive cognitive data that accurately reflects the diverse needs of SEN learners. Understanding how the learners process information, engage with content, and develop social and emotional skills is critical to creating responsive NPCs that can adapt to individual user profiles.

## 7. Effectiveness Supported by Cognitive Frameworks Proven in Make-Believe Play

The portrayal of NPC'c significantly impacts the learner's engagement, much like how children benefit from engaging with personas and illusions of reality in make-believe play. Just as in games where relatable and believable NPCs enhance the immersive experience, children engaging in make-believe adopt different personas, which fosters their linguistic and social development. Both scenarios emphasise the importance of creating characters, whether in education or play allowing for emotional, cognitive, and behavioural connections, enriching the learners experience through the exploration of diverse language and social cues.

Cognitive processes and knowledge structures of SEN learners should be taken into consideration when developing NPCs incorporating a user-centred design. Traditional NPC persona development focus on demographic and behavioural data, but I argue that including cognitive aspects—such as how users process information and their existing knowledge can lead to effective and attuned educational tools (Lanius et al., 2020).

There is a need for creating personas that reflect the cognitive and knowledge-related characteristics of SEN learners. This involves gathering data not only on user behaviours and demographics but also on how users learn, their cognitive challenges, and the prior knowledge they bring to the learning process (Marsden et al.,2017). For each segment, personas should be created with detailed attributes reflecting their knowledge levels, cognitive characteristics, and learning behaviours. These personas could include demographic information, goals, challenges, and specific cognitive traits, such as how they process information or their preferred learning methods. The personas could be iterated and refined based on feedback and user research. This ensures that the personas accurately represent the target users' cognitive and knowledge-related characteristics and needs (Anvari et al., 2019). Developers cannot run the risk of overlooking the distinct needs of various subgroups within this population. The cognitive and learning challenges faced by individuals with dyslexia, differ significantly from those experienced by individuals on the autism spectrum, who may present with unique sensory processing and social communication difficulties. Similarly, learners with ADHD struggle with sustained attention and require tools that promote engagement and focus, whereas those with intellectual disabilities may benefit from strategies that support cognitive development at a different pace and level of complexity. Without recognizing this diversity, NPC designs would fall short of addressing the specific needs of different SEN learners, thereby limiting their educational efficacy. Developers could design multiple NPC personas, each tailored to specific cognitive profiles within the SEN population. NPCs designed for learners with autism might include features that accommodate sensory sensitivities and support social communication skills, while NPCs designed for learners with ADHD might focus on strategies to sustain engagement, promote attention regulation, and mitigate distractibility. NPCs for learners with dyslexia could incorporate tools that address phonological processing and reading fluency, while those for learners with intellectual disabilities might focus on simplifying instructions and offering scaffolded learning experiences.

The benefits of engaging with personas and illusions of reality and learning communication and language through this method is also prominently observed in children's make-believe play as well. Therefore, engagement with NPCs designed on such cognitive frameworks would inevitably lead to the practice of understanding and predicting what others might think or feel. Children would learn to take perspectives crucial for effective communication development in children, helping in children tailoring their language and behaviour to the needs and expectations of others. They would learn about how each character would speak or respond; requiring them to use language in diverse ways, experimenting with different tones, vocabularies, and speech patterns, enriching their linguistic repertoire. Symbolic thinking has been linked to language development, where words themselves are symbols for objects, actions, or ideas just like the use of Makaton. By engaging in symbolic learning learners would practice and observe the use and understanding of metaphors and analogies, inevitably enhancing their ability to use language creatively and effectively.

Exposure to and use of words that are beyond their everyday vocabulary would benefit in comprehension and phonological development. When pretending to be a doctor or superhero with a NPC, they might use specialised terms or jargon, expanding their vocabulary in contextually meaningful ways like how MR. Tumble teaches the same (Severson and Woodard, 2018).

This inherently narrative style of learning, would require children to create, follow, and sometimes change stories. This practice would develop their ability to construct coherent narratives, an essential skill in both written and spoken communication. This creation of stories, understanding the sequence of events and using appropriate grammatical structures to convey them would help SEN learners better their communication skills. Learners would be able to grasp the rules of syntax and how different sentence structures could be used to express various ideas or emotions aiding in the development of pragmatic language skills, which are critical for effective communication in real-life social situations.

Would learn to interpret and respond to social cues, such as body language, tone of voice, and facial expressions improving their ability to understand and use these cues in actual conversations, enhancing their communicative competence (Bretherton, 1989).

SEN learners would develop a level of metacognition, were children would think about how they are using language. They would consciously decide to change how a character speaks or what they say to fit a particular

scenario. This reflection would help them become more aware of the nuances of language and how it can be adjusted to suit different contexts or audiences. As children become more aware of their own language use they would develop the ability to self-correct, leading to greater language proficiency and flexibility.

SEN learners would collaborate with other NPCs, requiring them to negotiate roles, rules, and scenarios. This collaborative process would provide rich opportunities for language practice, including negotiation, persuasion, and explanation. More knowledgeable peers or adults guide NPCs, could introducing new vocabulary and complex language structures like how Mr. Tumble does in his show. This scaffolding could help children internalise new language forms in a supportive environment. The NPC's could encourage children to use language in creative ways, such as inventing new words, phrases, or even languages to fit the fantasy worlds they create. This creativity in language use would help them develop linguistic flexibility and the ability to play with language structures. As SEN children start to imagine different scenarios, they could also explore how language changes depending on the context; helping them understand the situational nature of language and preparing them to use language appropriately in a wide range of real-world situations.

These recommendations are likely to be effective because the same cognitive frameworks have proven successful in make-believe play, which has demonstrated significant benefits for language and communication development. The established efficacy of these frameworks in fostering linguistic and social skills suggests that their application to NPC design in educational tools could similarly enhance learner outcomes.

## References


Anvari, F., Tran, H.M.T., Richards, D. and Hitchens, M. (2019). Towards a Method for Creating Personas with Knowledge and Cognitive Process for User Centered Design of a Learning Application.

Ariyurek, S., Surer, E. and Betin-Can, A. (2023). Playtesting: What is Beyond Personas

Bretherton, I. (1989). Pretense: The form and function of make-believe play.

Calvert, S.L. and Wilson, B.J. (eds.) (2008). The Handbook of Children, Media, and Development.

Chowanda, A., Flintham, M., Blanchfield, P., & Valstar, M. (n.d.). Playing with Social and Emotional Game Companions.

Crowe, K., McLeod, S., & Ching, T.Y.C. (2012). The Cultural and Linguistic Diversity of 3-Year-Old Children with Hearing Loss.

Dimock, E.C. Jr. (1991). On "Māyā".

Evmenova, A.S., & Behrmann, M.M. (2011). Research-Based Strategies for Teaching Content to Students with Intellectual Disabilities: Adapted Videos. Education and Training in Autism and Developmental Disabilities.

Gu, S., Kshirsagar, A., Du, Y., Chen, G., Peters, J., & Knoll, A. (2023). A Human-Centered Safe Robot Reinforcement Learning Framework with Interactive Behaviours.

Lanius, C., Weber, R., Spiegle, J., Robinson, J. and Potts, R. (2020). Drawing on Personas: How User Personas Affect Creativity

Marsden, N., Pröbster, M., Haque, M.E. and Hermann, J. (2017). Cognitive styles and personas: designing for users who are different from me.

Mistry, M., & Barnes, D. (2013). The use of Makaton for supporting talk, through play, for pupils who have English as an Additional Language (EAL) in the Foundation Stage

Namburi, S. & Hopkins, G. (2023). Meraki: Encouraging Language Learning in Real-World Simulations through AI Para-Social Relationship Building.

Oxford University Press (n.d.). One Consciousness, Many Mirrors: Mirror Models in Advaita Vedānta

Sheehy, K., & Duffy, H. (2009). Attitudes to Makaton in the ages on integration and inclusion.

Solity, J. (2006). An Overview of Behavioural Approaches to Teaching Children with Learning Difficulties and the National Curriculum

Subhangi Namburi (2020). Debunking "Boys Will Be Boys": A Systematic Mapping of the Internalisation of Social Experiences and Its Effects on the Make-Believe Play Patterns of Pre-School Children. Bachelor's dissertation, Symbiosis School for Liberal Arts, Pune

Subhangi Namburi (2024). Data inferred from watching Mr. Tumble Something Special, all episodes.

Walker, M. (1987). The Makaton Vocabulary—Uses and Effectiveness.