

“You’ve got a Friend in Me” A Case for using Entertainment Education and Gamification Elements in Children’s Physical Activity Sessions: Creating an Immersive Environment to Increase Engagement.

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Abstract

Engaging children in physical activity is a pertinent research area. The health benefits of physical activity are well known, however it is consistently reported that many children are failing to accumulate the recommended hours. The media may have a role to play in physical activity promotion, however this is a relatively under explored area. This research aims to explore one potential use of the media by investigating children’s preferences for characters, specifically Disney characters, which are present in the media that they are frequently exposed to. Focus groups were conducted, with 27 children (20 girls, 7 boys) aged between seven and ten. In the focus groups children were asked to draw their favourite Disney character and then discuss in the group the reasoning behind the chosen characters. The results were discussed in relation to two areas of research, entertainment education and gamification and how all of this can be incorporated into a physical activity setting. The main findings from the study suggest that if you can create an immersive environment, by incorporating elements such as characters/preferred characteristics of a character which have been identified by this research, you may be able to promote physical activity to children.

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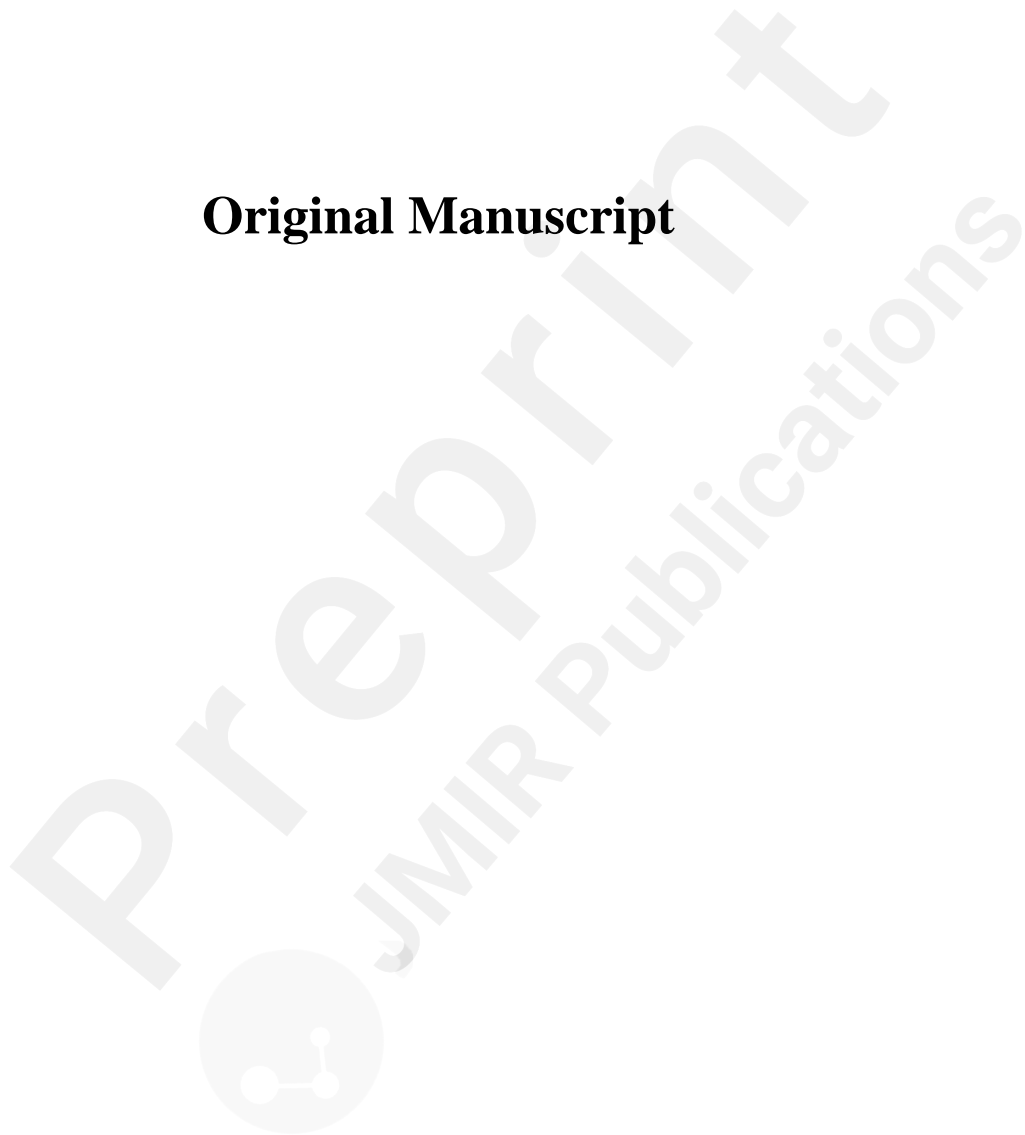
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“You’ve got a Friend in Me” A Case for using Entertainment Education and Gamification Elements in Children’s Physical Activity Sessions: Creating an Immersive Environment to Increase Engagement.

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Abstract

Engaging children in physical activity is a pertinent research area. The health benefits of physical activity are well known, however it is consistently reported that many children are failing to accumulate the recommended hours. The media may have a role to play in physical activity promotion, however this is a relatively under explored area. This research aims to explore one potential use of the media by investigating children’s preferences for characters, specifically Disney characters, which are present in the media that they are frequently exposed to. Focus groups were conducted, with 27 children (20 girls, 7 boys) aged between seven and ten. In the focus groups children were asked to draw their favourite Disney character and then discuss in the group the reasoning behind the chosen characters. The results were discussed in relation to two areas of research, entertainment education and gamification and how all of this can be incorporated into a physical activity setting. The main findings from the study suggest that if you can create an immersive environment, by incorporating elements such as characters/preferred characteristics of a character which have been identified by this research, you may be able to promote physical activity to children.

Keywords: Physical Activity; Children; Engagement; Entertainment education; Gamification, Focus Groups, Disney; Characters.

1. Introduction

Physical activity is associated with physiological, developmental, cognitive and social health benefits in young people [1-3]. Physical activity behaviours develop in childhood and track through to adulthood [4] therefore if health behaviours are established at an early stage of life they are likely to persist into adulthood [5] and promote the formation of lifelong active habits [6]. Public health concerns regarding the lack of physical activity and amount of sedentary time in young people have been well documented and linked to lifestyle changes for instance access to television and other technology [7]. Despite global development in physical activity and sedentary behaviour policy [8] it has been estimated that approximately 80% of young people worldwide do not meet the recommended amount of physical activity [9] and there is a trend of lower levels of physical activity being reported at all ages [10]. Murray et al. (2019) identified this as a gap between what we advise and what we actually do; clearly approaches to addressing this gap are required [11].

Individuals are more likely to be motivated to engage in activities that they enjoy [5] and Hedonic theory suggests the affective response to a given behaviour becomes a determinate for future behaviour [12]. Hedonic theory relies on the inclination of people to maximise pleasure and minimise displeasure and states that people are more motivated to engage in behaviours that bring them pleasure [12]. In adults optimising affective responses to physical activity is likely to play a significant role in adherence [14] whereas in children the motivators to engage often differ from those of adults and have been less systematically explored [15]. Media may have a key role to play in physical activity promotion [7], yet it has been relatively under explored as a positive influence.

Entertainment education uses prosocial messages embedded into popular entertainment media content [16], which can be health or educational orientated, with the goal of positively influencing awareness, knowledge, attitude and/or behaviours [16]. Entertainment education principles may impact on children's affective response to physical activity, for instance the identification that a child has with the character is an emotional and cognitive process whereby the child takes on the characters role within a narrative [16]. The child is engrossed in this new narrative and forgets the reality surrounding them and take on the perspective of the character [17]. After being exposed through media to a character for a long period of time children can feel that they know the character, sometimes as well as they know their own friends [18]; they form para-social relationships. The evidence surrounding para-social relationships suggests that it provides social and emotional fulfilment for children and motivates the continued exposure to them [18]. From a media perspective a child may wish to watch more of their favourite character in their TV show, but if the character was embedded into physical activity sessions the child may wish to engage more in these sessions. It has been shown that children, as well as adults, form these relationships with fictional characters, seek guidance from them, and see them as a friend [16].

Many entertainment education approaches also use a narrative structure for these characters, leading them through a story, this results in children feeling "swept up" in the narrative and having an interest in following the events as they unfold in the story [16]. Leading the child through a story, using a narrative and characters are also elements of gamification, another promising approach to elicit health behaviour change [19]. Gamification involves using game thinking and game mechanics to engage users and solve problems [20], for example points, achievements, and levels to track progress [21]. Badges are of importance as people have a strong urge to collect things and to be rewarded for actions [21]. One approach is through the use of conflicts and challenges i.e. problems faced by the players. Similarly, to the entertainment education research, gamification involves game fiction with adventures and monsters [22]. Gamification is primarily related to online games, this is where currently the majority of the research lies, however it is clear to see the transfer of ideas and methods from the *online* world to the *physical* one has the potential to bring multiple benefits.

Personal preference is important in both entertainment education and gamification, what appeals to one child may not appeal to another. Bartle (1996) stated that there are four types of characters that children take on the role of, either a killer, achiever, socialiser, or explorer [23]. Bedwell et al (2012) also suggested it was important that each player had an element of control,

allowing the player to customize makes it more meaningful and raises engagement [24, 21]. This links into the idea of wishful identification, whereby a child wants to be like the character and looks up to that character, again showing the influence that these characters can have over a child and their actions [16]. Despite the individualistic nature of character preference there are likely to be some common and underlying themes as to why children prefer certain characters to others. For example, Hoffner (1996) found that boys selected same sex characters in all cases, and that girls did the same in half of the cases [18]. Little is known regarding the underlying characteristics and attributes that characters need to possess to be “liked”. The characteristics of these characters and the narratives from which they reside could provide some critical knowledge to researchers attempting to use these characters and related theories in the promotion of physical activity in children.

One group of characters that are well known and popular with children are those characters created by Disney. Adults and children alike are often enthralled by the power of Disney, as the worlds it creates facilitate an escape from everyday reality [25]. The Disney brand is often used in an advertising or marketing settings due to the pre-existing emotions that children have towards these characters [26], marketers hope that the feelings associated with the characters will be transferred to the advertised product. Disney characters are an important part of children’s culture and have the potential to shape values, attitudes, behaviour and to encourage new ways of thinking about issues [25]. Due to the popularity of Disney, and influence of its characters on children Public Health England sought a collaboration with Disney to help engage children in physical activity. Sport England (2019) researched the influence that these characters may have on children’s engagement and found that when asked 64% of children surveyed said that they would be inspired to be more physically active if they saw their favourite Disney character being active [27]. Therefore, it seems that Disney characters are uniquely placed to be used in the promotion of physical activity in children. The aim of this research was to explore children’s favourite Disney characters but also the reasons for their preferences. The Disney character findings will be used along with the entertainment education and gamification research to provide some suggestions for future research aiming to engage children using characters in physical activity sessions.

2. Materials and Methods

2.1 Study design

A mixed methods study design was chosen for this research. Qualitative data was collected using focus groups and analysed using thematic analysis, during the focus groups quantitative data was also collected, which related to numerical scores given to each character.

2.2 Subjects

Twenty-seven participants (20 girls, 7 boys) took part in the study, all between the ages of seven to ten years. Two separate schools, in two different parts of Hampshire, England were used for this study to help limit geographical bias. Twelve of the children included in the study were from a school in northern Hampshire, and 15 were from a school in Southern Hampshire. Written parental consent to participate was obtained and children gave verbal assent.

2.3 Protocol

Focus groups were used to gather the required information rather than individual interviews as children tend to feel more comfortable in a group setting with their peers around them [28]. There were between four and six children in each group (six groups in total) which has been proposed as the optimal number of participants per group in this age group [29]. The length of the focus groups was between 25 to 45 minutes, and all were no longer than 45 minutes as this can lead to a decrease in the quality of answers [29]. The focus groups were conducted in the schools’ libraries, but on the floor, with the children and researcher all sitting in a circle, this intended to help with the group cohesion [29]. At the start of the session the researcher explained the reasoning behind the session, and then gave each child some paper and colouring pencils. They were instructed to draw their favourite Disney characters and write a few words as

to why they liked them. Previous research suggested that breaking up focus groups with younger children by using pen and pencil exercises helps the shy children participate more [29] and promotes enjoyment [28]. As the children were drawing the researcher would ask questions about these characters to all the children. Using these child-friendly methods it was hoped that the children would feel more comfortable in the groups, allow developmentally appropriate ways of expressing their views, develop trust between the researcher and children allowing more genuine answers, and lead to an enjoyable experience [28]. After the drawing and discussions around characters each child was then instructed to score all of the characters drawn in that session with one of three stickers. The red stickers were for characters that they didn't like very much, the orange were characters that they liked but were not their favourite, and the green were for characters that they really liked and they considered one of their favourites. If they did not know a character, then they did not give that character a sticker. The stickers were used to promote the child friendly atmosphere as well as allowing for some quantitative data to be collected. Figure 1 below illustrate some of the drawings that were done in the sessions.

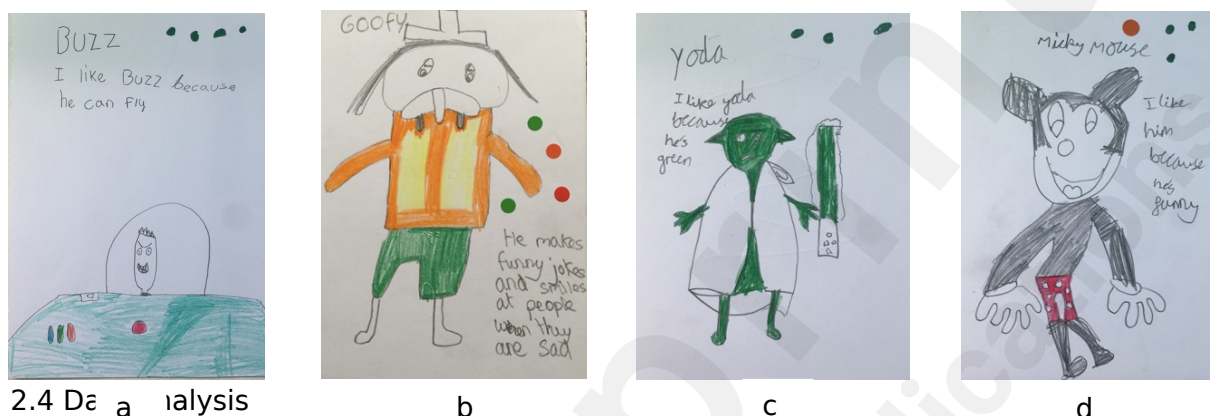


Figure 1 shows examples of drawings from four focus groups (a) 8-year-old, (b) Goofy, (c) Yoda, and (d) Mickey Mouse. The focus groups were audio recorded and post-session transcripts were written up verbatim with the children's names substituted for "child 1" "child 2" etc. for confidentiality. Thematic analysis was chosen as it allows for the identification of patterns of meaning across a data set and enables description of the meaning and importance of them [30]. It has been reported that focus groups are a good source of data for thematic analysis, and that a minimum of six groups are recommended [30]. For the thematic analysis this started with familiarization of the data, before progressing to the theme development and the inclusion of sub themes, before the writing up phase where the results were reported and conclusions drawn [30-31]. This was an inductive process as not based around any presumptions or theories given the lack of prior information on characteristics which appeal to children.

The coloured stickers that the children gave each character were analysed through a points system (no sticker 0 points recorded, red sticker -1 point recorded, orange sticker 0 points recorded, green sticker +1 point recorded). If the character came up more than once in that focus group, then for that group the score was multiplied by the frequency of drawings. It was thought that the fact a child chose to draw a character held more weight than merely the sticker alone so this was done to reflect greater weighting to a character when they were drawn by more than one child in a given focus group. So, for example, Mickey received 31 scores in total, including one drawing for groups 1,2, and 5, and then three drawings from group 3, so the score from the third group was multiplied by three. If a character's total score was higher than 1.0 it was deemed a high score, if it was between 0.0-0.9 it was a medium score, and anything below this was a low score.

3. Results

3.1 Frequency of characters

Table 1 shows the frequency of characters mentioned in the focus groups. A character was included if it was mentioned, regardless of the number of times it came up. This was to analyse whether there were any recurring characters that were popular. No characters were mentioned

in all six focus groups, however both Mickey and Dumbo were reported in five, Olaf came up in four, then there were four characters that were reported in three different focus groups, and 16 that were mentioned in two groups. The remaining 42 characters were only mentioned once.

Table 1: Frequency of Characters Mentioned in Focus Groups - number of groups

| Frequency | Characters |
|-----------|--|
| 1 | Sven, Mr Knowsmore (Mr. K), Lady, Obi Wan Kenobi, Crush, Vanellope, Tinkerbelle, Peter Pan, Hector, Donald, Yasmine, Rapunzel, Lilo, Evie, Moana, Luke Skywalker, Buzz, Mr. Incredible (Mr. I), Sully, Sebastian, Spiderman, Magic Carpet (carpet), Abu, Finn, Darth Vader, Prince Ali, Goofy, Jafar, Lightning McQueen, Pluto, Aurora, Scrooge McDuck, Yoda, Genie, Maleficent, Bo Peep, R2D2, Violet, Cinderella, Remy, Uma and Chilly |
| 2 | Pumbaa, Elsa, Timone, Woody, Forky, Mike Wazowski, Mal, Gaston, Ana, Simba, Mulan, Mr. Fredrickson (Mr. F) Merida, Joy, Belle, and Stitch |
| 3 | Dory, Arlo, Winnie the Pooh, Nemo and Ariel |
| 4 | Olaf |
| 5 | Mickey and Dumbo |

3.2 Characters Scores

The highest scoring character was Mickey with an average score of 4.1, followed by Olaf with 2.5. In total there were 17 characters who scored high (Mickey 4.1, Olaf 2.5, Jasmine 2.0, Elsa 2.0, Bell 2.0, Arlo 1.8, Mal 1.5, Pumbaa 1.3, Simba 1.3, Pooh 1.1, Timone 1.0, Abo 1.0, Hector 1.0, Yoda 1.0, Luke 1.0, Buzz, 1.0 and Remy 1.0). 23 characters scored medium (Dory 0.9, Stitch 0.8, Merida 0.8, Minnie 0.8, Lilo 0.7, Sully 0.7, Nemo 0.6, Spiderman .05, Mr Fredrickson 0.5, Bo Peep 0.5, Mr Incredible 0.5, Chilly 0.4, Donald 0.4, Lightning McQueen 0.4, Joy 0.3, Dumbo 0.3, Magic carpet 0.3, Goofy 0.3, Evie 0.3, Lady 0.2, Mr Knowsmore 0.0, Uma 0.0 and Finn 0.0). Finally, there were three characters that scored low (Pluto -0.2, Obi Wan -0.3 and Ariel -1.3).

3.3 Thematic Analysis

Figure 2 illustrates the thematic analysis for the focus group data. Overall there were five themes chosen, with a further 16 sub-themes. The numbers indicate the number of comments that were made in that theme or sub-theme. Personal attributes were the most common theme, receiving 137 comments. The most frequently mentioned attribute was the character being funny (71 comments), then being adventurous and brave received 12 comments each, with happy and weird/creepy receiving 10 comments each. The second highest scoring theme was the character having a specific ability or a skill, this was commented on 63 times. The most common sub-theme was music/singing (27 comments), a common comment in the focus groups was that the children loved their singing or loved their songs. The second most frequently reported ability or skill was travelling through the air such as flying or swinging (i.e. like Spiderman) (24). A specific action received a frequency score of 46, with the two most common here being either helping someone out (18 comments) or creating/ sustaining a friendship (16 comments). Children often commented that they liked one character because they were friends with another, or that they liked that character because they helped another character out. Physical characteristics were reported on 56 times; 36 of these referred to the characters looks, either to do with specifics including their ears or tails, or that they were regarded as looking cute or cool. Ten comments were made in relation to the character's voices, and the type of character was commented on nine times, these included being a dog (the most frequent type), mermaid, cowboy or clown fish. The final theme was to do with sentiment (30 comments), this covered any comments relating to characters that were considered original (reported 9 times), any times where a child compared a character to themselves and reported a similarity (6 comments) and anything that was mentioned in relation to a link to their childhood in terms of a toy or a book (15 comments).

Focus Group Thematic Analysis

| | | | | |
|--|--|---|--|--|
| <p>Looks (36) Cute (4) Cool (6) Nerdy (2) Ears (5) Pretty (2) Fluffy (1) Colour (3) Clothes (7) Tail (3) Smile (4) Hair (2)</p> <p>Laugh (1)</p> <p>Voice (10)</p> <p>Type (9) Clown fish (1) Cowboy (1) Dog (4) Mermaid (3)</p> | <p>Positive (119) Funny (71) Adventurous (12) Knowledgeable (7) Happy (10) Brave (12) Determination (3) Sneaky (2) Caring (1) Hopeful (1)</p> <p>Negative (18) Weird/creepy (10) Moody (1) Babyish (1) Annoying (1) Vicious (1) Boring (4)</p> | <p>Positive (38) Help someone (18) Friendship (creating or sustaining) (16) Good sister (4)</p> <p>Negative (8) Getting lost (3) Getting hurt (1) Having a small part (4)</p> | <p>Music/singing (27)</p> <p>Magic powers (4)</p> <p>Athletic (7) Sports (1) Speed (2) Strength (4)</p> <p>Flying/swinging (24)</p> <p>Fighting (1)</p> | <p>Similarities (6)</p> <p>Original character (9)</p> <p>Link to childhood (15) Watched (11) Toy/book (4)</p> |
|--|--|---|--|--|

Figure 2: Thematic analysis of focus group data

The focus group data identified important reasons why children prefer certain characters, and what they value as important characteristics. In the following section the results will be discussed in the context of entertainment education and gamification and how these could be used in a physical activity environment to increase engagement.

Characters having a personal attribute, the most common being funny, was the most common feature identified by the children. They liked characters that make them laugh and led to enjoyable emotions. Many characters, who are known for being funny, and mentioned in the focus groups as funny characters received high and medium scores from the children (High = Olaf, Timone, Pumbaa, Medium = Dory, Donald and Goofy). Children commented on how they liked Dory's "funny singing", and also Mickey's "funny laugh", and Mickey was one of the most commonly reported characters in the groups. This links with Hedonic theory which states that a person will be more likely to engage in actions that bring them pleasure [12]. If a funny character is incorporated into the physical activity sessions then the children will likely laugh, have an enjoyable time, and experience positive emotions which may result in them being more likely to engage in physical activity again in the future. Negative emotional memories of engagement in physical activity during childhood predict adult physical activity behaviours [32], and even small amendments to delivery can positively influence affect [33]. It seems plausible that physical activity interventions utilising characters that elicit enjoyable emotions could lead to increased physical activity engagement.

The sentiment theme from the focus groups revealed children chose characters that were like themselves. Children made comments such as "I like her because she has the same colour hair as me" in relation to Belle, and that they liked Winnie the Pooh "because he likes honey just like me". This supports research regarding wishful identification; the child wants to be like the character and emulate that figure they look up to [16]. If the child sees similarities between themselves and the character they like it is possible the child will have a desire to behave in similar way to that character [18]. Therefore, if their favourite character is being physically active then that child would also like to be physically active. This aligns to the findings from the Sport England survey on the effect of Disney characters in which 65% of children reported they would be more likely to engage in physical activity if they saw their favourite Disney character

doing so [27]. A part the relationship between characters and children relates to how children look to these characters for advice and guidance, so these characters are perfectly placed to do so [16]. In a physical activity setting this can be done through giving instructions about how to complete an activity, or advice on how to get better at an activity. Receiving this information from a character will increase the likelihood of it being accepted; people are influenced by who delivers a message [26].

Ability/skill was another theme identified and children commented 24 times they liked the ability that the characters had to fly or swing. For example; "I like how they fly the house", referring to Mr Fredrickson and Russel in the film *Up!*, "I like it because he can fly" referring to *Dumbo*, "I like Buzz because he can fly" referring to Buzz Lightyear, and finally "I like when he swings" in reference to *Spiderman*. *Dumbo* also was one of the highest scoring characters for frequency, being reported in five focus groups, each time being mentioned because of his ability to fly. Characters who could fly also scored either high or medium (High = Buzz, Medium = *Spiderman*, Mr Fredrickson, *Dumbo* and the magic carpet). Obviously, it is not possible to make children fly physically, but they can fly using their imagination. It is very easy to ask children to stick out their arms like wings and pretend to fly like their favourite character. Indeed, children across cultures readily engage in such imaginative play [34]. This is an example of how you can use a narrative to engage a child in a story line and get them to perform tasks that, if framed otherwise, may not lead them to engaging in the activity. Imagination can free children to "glimpse what might be, to form notions of what should be and what is not yet" [35] and has been argued that creative play and imagination are interrelated and complete each other, and when completed together they support learning [36]. As well as wanting to be similar to the character, children can also take on the role of the character, forgetting about their own reality and taking on the perspective of the character [17]. One element of this involves the child taking on the character's goals as their own. This, combined with a narrative, can be useful in a physical activity setting. Narratives enable some transportation, immersion, and engagement in a "story" and often children can feel swept up into this narrative in entertainment education settings [16]. In a physical activity environment, the narrative and characters can be manipulated to help the engagement in the activity. The character may be in some danger and need to "escape" by running away, or they could be issued a challenge to throw a ball as far as they can. These physical activities can be woven into a story, needing to be completed by the character and as such the child; resulting in them engaging in the activity.

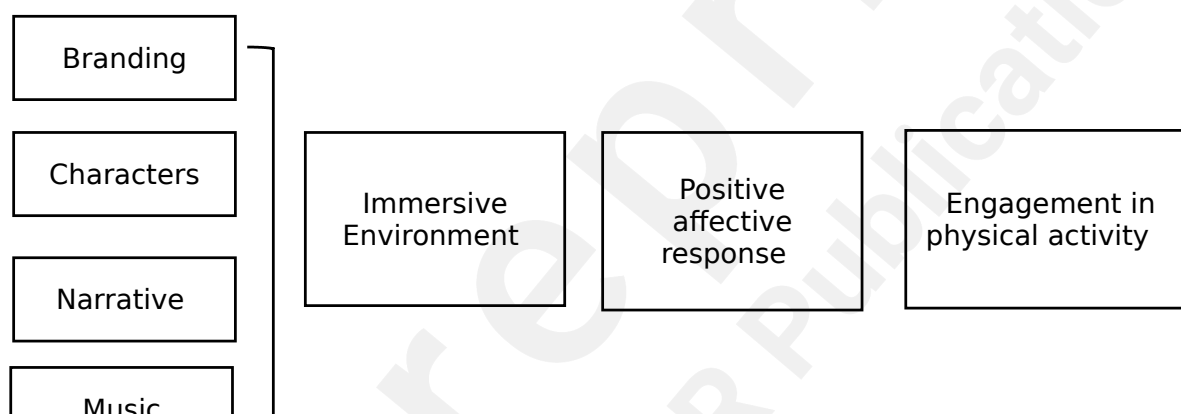
The characteristics discussed thus far also link with the research around gamification and the use of game elements. The focus groups suggested being adventurous as a key attribute of their favourite character, as well as being brave and determined. In a school environment a child may need to complete a series of physical activities, whilst being assessed by a teacher; instead of these being posed as "tasks" and "assessments" they can be "adventures" where the child needs to escape the "monsters" [22]. Other elements of the focus groups results could be easily encompassed by manipulating the narrative of physical activities. Children commented on how they liked characters that helped someone out which fits with research suggesting children participating in teams rather than as an individual's enhances motivation for physical education sessions [19]. In a physical activity environment, children could be paired up as two characters who are friends, set a challenge, and go on an adventure together. Many of the abilities and skills reported by the children, for example speed and strength, are specific sport/physical activity related skills that could easily be incorporated into a session. For speed the children commented on how the character *Lightning McQueen* was fast and that was why they liked him, for strength this was given as a reason why they liked *Mr Incredible*. Both *Lightning McQueen* and *Mr Incredible* received medium scores from the children. These two characters could be used in a narrative, with the children taking on the role of the character, to engage in speed and strength based physical activity. This approach has already been utilised by *Change4Life* in some of the 10-minute shake ups, "*Lightning McQueens track race*" and "*Mr Incredibles big jump*" which include elements of speed and strength related to their respective characters. This can also be seen in another *Change4Life* programme in the "*Train like a Jedi*" which supports children to master six skills: technique, strength, stamina, speed, agility, and mastery. This included a video in which popular *Star Wars* characters appear to help teach the children a sequence of moves designed to increase their heart rates and benefit their health [37]. An evaluation of the impact of the *Change4Life* 10-minute shake ups has not yet been completed

and as such would be a worthwhile future direction for research.

Finally, the use of music and/or songs, was reported 27 times in the focus groups with children commenting on how they liked the singing. On a number of occasions children started to sing their favourite songs in the focus groups by high scoring characters, particularly “Hakuna Matatta” which is sung by Timone, Pumbaa and Simba or songs from Frozen including “Into the unknown” and “let it go”, which are sung by Elsa. It has been reported that music can help with motivation, control arousal, reduce feelings of exertion and improve mood; all contributing to increase exercise adherence [38]. Specifically within children Vazou et al., (2018) reported that a “novel” PE class which included using upbeat engaging music and videos led to higher enjoyment and need satisfaction compared to a “traditional” PE class [33]. The results from the focus groups, and the previous research support the use of music in physical activity sessions and therefore it should be promoted in the pursuit of increased engagement of children in physical activity, however more research is needed to ascertain the specific motivational qualities of the music that appeal to children.

4.1 Conceptual framework

Based on the results from the thematic analysis, and critical analysis in relation to the underpinning concepts of entertainment education and gamification, the following conceptual framework and recommendations for future research are presented for any future research aiming to increase children’s engagement in physical activity through the use of characters:



The four elements branding, characters, a narrative and music all help to create the immersive environment. As stated earlier children often have pre-existing relationships with brands which this brand could results

Figure 3: A conceptual framework for a immersive environment good example of this is using the Disney, Pixar and Disney characters which was explored in this research, however it is worth noting that these are not the only characters that can be used. The characters themselves can help due to the parasocial relationships that may already have been formed between the children and these characters, by targeting those characters with the specific characteristics identified by this research the benefits of using characters may be enhanced. As long as children have been exposed to these characters beforehand, then a parasocial relationships can be formed. These characters can also be woven into a narrative whereby the child can escape reality and take on the role of the character, performing tasks and challenges. Finally by using music this can help firstly with the immersion, for example if the setting for the session is magical castle, there can be music that helps create this atmosphere. Additionally it can also act as a form of motivation as research supports the notion that music can lead to enhanced motivation for physical activity. As the conceptual framework shows, these elements can be combined to create that immersive environment, and this is hoped to lead to positive affective responses and thus engagement in physical activity.

5. Conclusions

Both entertainment education and gamification offer research that supports the use of characters, and the narrative that they are involved in, and clearly demonstrate the extent that

they can be used to engage children in physical activity. This research has provided some data from children on the precise characteristics that children find so appealing about these characters and offers some suggestions that future research should consider implementing when attempting to use characters to promote physical activity in children. Engaging children in physical activity in an enjoyable manner is key to developing long term behaviours. Popular characters provide a unique way to engage children in physical activity and it is suggested that their use should be implemented more in interventions aimed to increase physical activity levels in children. Future research should look at each of the elements identified in the conceptual framework individually to ascertain clearly how to best use them in a physical activity setting, and also investigate the whole immersive environment holistically and how this can influence affect in children.

Conflicts of Interest: The authors declare no conflict of interest

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