

The psychosocial impact of NHS Digital Badges on a school-aged cohort

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Abstract

Goal-oriented modalities of learning have long been used in educational settings to promote engagement and encourage a step-by-step approach to the acquisition of skills and knowledge. Historically, badges have been material, but in keeping with technological advancements there is a move towards encouraging greater digital engagement. Digital badges are today's version of the Scouts and Guides badge, a virtual non-material version, increasingly being utilized as a pedagogical resource in education and business settings. In 2015, National Health Service (NHS) England developed and launched its own digital badges aimed at supporting children and young people's education of health and well-being. This article presents findings from the first study to explore the psychosocial impact of NHS Digital Badges as perceived by primary school-aged children and their teachers. We conducted a small-scale evaluation involving children aged 8–10 ($n = 57$) and their teachers ($n = 2$), from a primary academy (school) in the north of England using NHS Digital Badges in their curriculum. Overwhelmingly, children and teachers reflected on the badges positively, as tools that have the capacity to build perseverance, develop emotional awareness, build relationships and enhance skill and knowledge acquisition. Some participants, though, raised vulnerability and safeguarding issues, and we explore the implications of these for future practice.

Keywords

Children's participation, education, evaluation, information technology

Introduction

Digital badges are today's version of the Scouts and Guides badge, a virtual non-material version, increasingly emerging as a pedagogical resource in education and business settings (Aberdour,

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2016; Jovanovic and Devedzic, 2015). Gibson et al. (2015) suggest that Digital Badges provide three key benefits: they incentivize learners to engage in positive behaviours, identify progress and symbolize achievement. Digital badges are marketed as an enjoyable, task-oriented mode of learning, providing a source of motivation for learners to work towards and meet educational outcomes, and acquire related badges, step by step (Abramovich et al., 2013; Gibson et al., 2015). However, research findings on the effects of badges on motivation are mixed. Abramovich et al. (2013) explored the utility of badges in education; findings indicated that the effects varied depending on the abilities of learners and the types of badges.

In 2015, National Health Service (NHS) England developed and launched its own digital badges aimed at supporting children and young people's education around health and well-being. These NHS Digital Badges were developed in partnership with *Makewav.es* – an organization providing online social learning platforms for schools and third sector agencies. *Makewav.es* currently holds a library of 14 NHS Digital Badges and 20 Public Health England (PHE) badges, some of which promote national PHE campaigns – such as *Change4Life*. NHS and PHE badges are designed to increase children and young people's awareness of health services and to promote engagement in their own and other's health and fitness.

Each NHS Digital Badge accompanies a brief summary explaining the badge mission and the work required to obtain it. Summaries are general and relatively open to subjective interpretation. It is left to the discretion of individual facilitators (typically teachers or group leaders), who are internal to each organization, to determine validation and quality control processes. Facilitators determine the constituents required to achieve a particular badge, verify children's work and issue badges accordingly. The flexible validation processes mean that NHS badges can be used with children and young people of different age groups and abilities and in a diverse range of contexts.

While there has been research investigating digital badges in education, business and healthcare settings (see Aberdour, 2016; Abramovich et al., 2013; Gibson et al., 2015; Jovanovic and Devedzic, 2015), no published literature was identified exploring the psychosocial impact of NHS Digital Badges. The Institute of Health and Wellbeing (within the Faculty of Health and Society), University of Northampton (TUoN), was commissioned by NHS England to evaluate the impact of NHS Digital Badges on children. The aims of the evaluation were:

1. To explore children and young people's experiences of engaging in, and completing, digital badges
2. To investigate the psychosocial effects of participating in/completing digital badges with peers and teachers.

This article presents the first findings of the psychosocial impact of NHS Digital Badges as perceived by children and their teachers. A separate paper will present a detailed report of the methods used and their potential to become a template for future participatory research with children and young people in educational settings.

Methods

A pluralist qualitative participatory approach was used (Frost, 2011; Frost and Nolas, 2011; Greene and Hogan, 2005; Veale, 2005), involving a combination of co-production workshops and creative methods with children, and semi-structured individual interviews with teachers. This project was underpinned by participatory principles and, as such, in order to conduct our research with, rather

than on, children (Barker and Weller, 2003), the methods aimed to subvert existing adult–child and researcher–participant power relations. Working with children in this way located them as agentic and competent co-producers (Bandura, 2001), with the capacity to exercise a level of control over the research process. By positioning children as central in the decision-making process, the aim was to disrupt normalized adult–child power imbalances and, along with them, notions that adults hold superior knowledge of children’s experience. There was a high level of engagement from children who informed the data collection methods implemented in creative workshops. Children’s involvement in co-production, together with our findings from data collection activities, has informed the development of a pragmatic methodology. Researchers intend to publish this methodology as a ‘toolkit’ of creative methods, with a view to providing a template for future work with children and young people in educational settings.

Research setting

A primary academy (school) in the north of England was selected for its high level of engagement with NHS Digital Badges. The Academy is part of a Multi-Academy Trust and has over 200 pupils on its roll. The Makewav.es portal and Digital Badges were introduced to the academy’s curriculum in 2015.

Participants

Two classes from two year groups were identified by the head of computing as suitable research collaborators due to their previous engagement with Digital Badges: one Year 4 class ($n = 30$) of 8- to 9-year-olds and the other, Year 5 class ($n = 27$) of 9- to 10-year-olds. In total, the Year 4 class had completed three NHS Digital Badges and the Year 5 class had completed four. In addition, two teachers, who had played a key role in the delivery of Digital Badges in the Academy, were interviewed.

Ethical considerations

The project was designed by authors, who secured ethical approval from the research ethics committee in the School of Health at TUoN. Data were collected by JA together with a research assistant. All members of the team had received enhanced screening by the United Kingdom’s Disclosure and Barring Service. All data are stored in accordance with university guidelines, in line with the UK Data Protection Act (1998) and the Freedom of Information Act (2000).

Access to the Academy was secured from the head teacher who sent Participant Information Sheets (PIS) to parents and teachers. The PIS provided parents and carers with an opportunity to opt their children out of the evaluation and an opportunity for teachers to opt out. In total, three parents/carers chose to opt their children out of the research as they did not wish them to be video recorded. The Academy organized alternative activities for these children while the workshops were in progress.

Following ethical approval and parental agreement, researchers made two visits to the school, one to gain informed consent from pupils and to engage them in co-production, and the other to collect data through creative workshops and interviews. Prior to consent, researchers informed children and their teachers about the nature and purpose of the evaluation, what participation would involve and their rights. Researchers were particularly careful to emphasize the voluntary nature of the project to the children.

Procedure

The aims of the project were translated into the following short series of questions designed to enable children to share their experiences of the NHS Digital Badges in flexible and age-appropriate ways through creative activities:

- What did you like or dislike about doing the NHS Digital Badges?
- How did you feel when you had completed your badge?
- What did you learn about each other when you were doing the NHS Digital Badges?
- How has sharing your experiences through doing the NHS Digital Badges affected your relationships with each other and with your teachers?
- In what ways, if any, are the badges useful in your life in or out of school now and in the future?

Co-production workshops with children

After obtaining consent, we ran a co-production workshop with each class to enable children to inform data collection techniques to be implemented in creative workshops. A series of creative methods were proposed and the children were given space to consider and discuss the methods. In order to make the final selection, children completed ballot papers identifying the creative methods they wanted to include. Those receiving the majority vote were selected.

Creative methods workshops with children

Interactive creative workshops, lasting approximately 90 minutes, were conducted with each class. They involved graphic, textual and verbal elicitation methods, and for each workshop, we adopted a rotation system, which enabled children to work in small groups on each of the five selected activities for a maximum of 20 minutes.

Interviews with teachers

Two teachers in the school had prior experience of NHS Digital Badges and they were invited to participate in an individual semi-structured interview. Interviews focused on teachers' experiences of using the badges as a pedagogical tool, their perceptions of their pupils' engagement and the perceived psychosocial impact on their pupils. Interviews lasted between 30 and 60 minutes and were audio recorded. Recordings were transcribed word for word and anonymized – any identifying information was obscured or omitted. Similarly, any written information provided by children was transcribed word for word and anonymized.

Analysis

Creative workshops and interviews were video and/or audio recorded and then transcribed verbatim. Textual data generated from the creative activities with children and the interviews with teachers were thematically analysed (Braun and Clarke, 2006). Themes identified are presented in Table 1. All data extracts shown here have been anonymized and names have been replaced with pseudonyms. Where children's textual data contain spelling or grammatical errors, but can be read phonetically, it is presented verbatim in the quotes below. In the data extracts, 'I' indicates the interviewer.

Table 1. Key themes generated from children and teachers' data.

Theme	Subthemes
Learning about self and others	Developing empathy, supporting friendship
Building relationships	
Feeling vulnerable, feeling exposed	
Building perseverance and determination	

Learning about self and others

NHS Digital Badges appeared to support children's awareness and understandings of themselves and their peers. Some children referred to developing an understanding of their peers' lives outside of the school context. This helped children to see how they are both similar and different to others which, in turn, appeared to engender a respectful appreciation of others and deeper connections between classmates:

You could talk about yourself. You can watch other people and learn more about them and how they live.

The data set suggested that the badges facilitated children's understanding of their similarities with others, while simultaneously supporting an appreciation of uniqueness and difference ('No-one is normal'). Children's statements also indicate that they were learning about the complexities, discrepancies and tensions of an individual's internal world and their actions and behaviours in the material, physical world:

Even though people are angry they are nice as well on the inside it doesn't matter what they're like on the outside it's on the inside.

Sharing their stories with others led to the identification of shared experiences which in turn supported the development of new friendships:

- I: Okay, so tell us what your drawing is of.
 Child 1: It is of me and Kim because through the NHS Story badge she realised that I was getting bullied, whereas outside of school, she was getting bullied.
 I: So you had something in common [...]?
 Child 1: Yeah.
 I: So you've both been bullied. What did that do for your relationship?
 Child 1: Erm, well she never actually realised I were (being bullied), in the class or in the school, so really it made her understand that I am. So we went into acquaintances, and now we're friends.
 I: So are you closer now?
 Child 1 and 3: [Simultaneously] Yeah.

The two children above, in fulfilment of the 'My Story' badge, wrote about their lives and presented it to their classmates. This process facilitated a mutual understanding and appreciation of the other's experiences, providing a foundation for their friendship. Other children expressed a similar

sense of having developed greater insight following participation into the NHS badges. Understanding that ‘it’s not just me’ seemed to be particularly powerful for some children, reducing feelings of isolation and loneliness, and instigating a sense of connection and affinity with others.

Interestingly, some children referred to the process (and not just the outcome) of goal-oriented learning that the badges seek to instigate:

Every time you take a step forward to more parts of you.

This child’s quote, particularly mature in its outlook, suggests that the process enables greater self-awareness through learning about different aspects of herself and her capabilities. In this sense, she implicitly framed the badges as a vehicle for self-discovery and a mechanism for personal growth and development. Another child mirrored this sense of personal growth and self-development:

We can better our selves and help each other while doing it.

For this child, engagement in the badges also appeared to enable peer support. In a similar vein, during a ‘draw-and-tell’ activity, one child suggested that the NHS badges provided a space to inform others about his life. He suggested that this shifted people’s perception of him from a ‘bad’ to a ‘good’ person, repositioning him as someone who would make a good friend:

I: So they learnt that you’re a good person?

Child 1: [nods head].

I: Why is that important? . . . Is it useful, is it important?

Child 2: Yeah, because if people think that you’re not a good person, they won’t want to be your friend.

Some children suggested that the process of sharing their stories with others had elicited positive feelings:

I felt better inside.

I felt really happy that I shared my thoughts with other people.

In this theme, learning about self and others is presented in a positive frame. Children reported that learning about others had supported the development of new friendships and/or had further cemented existing relationships. They also reflected on the positive consequences of sharing information about their lives with their peers.

Building relationships

Building upon existing friendships or forming new ones was framed as an entirely positive consequence of children’s engagement in NHS Digital Badges. For example, a number of children talked about feeling closer to others or having improved friendships, as illustrated here:

Brought people closer

bond more

We learnt about each other and helped by using Teamwork to get the badge!

Other children talked about feeling more supported by others and having deeper, more meaningful friendships:

I can now talk to people and [...] have friends that I know are there for me.

This particular child considers their friendship group and support network to have improved, with trustworthy and reliable friends. Echoing this child, one of the teachers interviewed also suggested that working towards NHS badges had a positive impact on pupils' communication skills:

Teacher 1: ... they work together, they talk about things, so it definitely builds on their communication skills and in turn they listen to each other. So you know, speaking and listening skills, they are really, [...] you know, put to the test [...].

Another teacher suggested that digital badges were introduced into the school curriculum with the sole intention of enhancing working relationships between pupils:

Teacher 2: ... we use the Makewav.es [platform] for all our stuff because it's got the commenting side of things, so they're able to look at each other's work. And this is initially why we brought it in because sort of 'Jimmy' at one side of the classroom doesn't necessarily see what 'Harry' at the other side of classroom is doing and they don't talk about stuff sometimes, they don't share work, and this was, I mean it was a great way in really.

This teacher suggests that the academy began using digital badges as a pedagogical tool to develop more integrated relationships and communication between pupils, and move away from small groups and isolated cliques. In this respect, the badges are used to instigate a restructuring and reframing of peer groups, to reduce the risk of isolation and marginalization, by ensuring that children get to know each other and have opportunities to work together collaboratively.

Developing empathy, supporting friendship

Children and teachers illustrated how the NHS digital badges had engendered and enabled an expression of empathy:

Child 2: I was gonna draw about my story, but I drew about my friend - Jeff. I was crying because his story was so sad.

I: His story was sad?

Child 2: Yeah, [...] he was really so sad, he's still sad now, but he still sees his father. [...] Well it made me more closer to him and feel more comfortable. And I helped him with things.

This particular child suggests how learning about Jeff's experiences of parental separation had touched him, induced empathic feelings of sadness and instigated the provision of social support. He considers hearing Jeff's biographical story to have been pivotal in the development of their friendship. Many children echoed this sentiment that hearing their peers' difficult life stories had instilled a sense of empathic understanding and had instigated them to be supportive and

protective. Children talked about the adversities others ‘had been through’ and overcome, with respect and, in some cases, awe, representing them as strong and courageous. Teachers also reflected on the sense of respect and understanding that the badges helped to generate:

Teacher 1: Kind of understanding that people have different views and having that mutual understanding and respect for each other, people have got different ideas and that’s OK, so yeah, I think it does have a high impact and I think it’s been lovely to have.

Teacher 2: I’ve used the My Story badge with Year 4 [...] They had some amazing stories to tell which we found was [...] a great way of them sharing their experiences and sort of helping other children really with the view that, ‘oh it’s not just me who’s, my parents have split up and I’m having to choose or we’re having to move house because of’ [...] So they were very open with the sort of, the challenges which they’d faced. [...] And sort of they were able to empathise with each other which was just amazing.

In their quotes, teachers imply that for their pupils, the process of writing their life stories provides an opportunity to reflect on and articulate their own individual experiences, to identify others who might have had similar experiences, and to receive greater and more meaningful social support from others based on respect. They frame this as an entirely positive experience, and while most children mirrored this positive positioning, not all did. For some, the experience was considered as one which actively made them feel exposed and vulnerable.

Feeling exposed, feeling vulnerable

This theme represents some of the children’s comments regarding engaging in, and completing, NHS badges that denoted feelings of vulnerability. Some children reported that sharing their life story with the class led to them being laughed at:

People can comment on your work and laugh at you.

I like other people’s stories because it was nice and [but it was] inbarisin for me because people started laphin at me.

It felt worst because everyone laughed at my opinion.

Maybe your story was embarrassing so it made your relationships worst.

Sharing personal stories led to embarrassment for some children and positioned them as potential targets for bullying. While some talked about the benefits of voicing their difficult backgrounds (illustrated in previous themes) in helping to elicit social support from others, it appears, from the last quote above, that some life stories of disadvantage and hardship might be more acceptable than others. In facilitating activities around the NHS My Story Badge, teachers need to be aware of the potential for children (especially those with complex histories) to be the subject of mockery and bullying following the sharing of their story. While the My Story Badge presents a valuable learning opportunity for children, it is important that certain stories and difficult histories are not occluded or obscured and are given the same respect and value as others. The children’s comments (above) illustrate the importance of supporting children through every stage of the process of working towards and completing the NHS badges. This is especially the case with badges that require children to share personal histories – this requires careful and sensitive management by teachers facilitating the digital badges process.

During the creative workshop, one child seemed slightly removed from the rest of the group, sitting quietly at his table. During the ‘draw-and-tell’ activity, he spoke to the researcher, their interaction is included below:

- Child 2: They [class] don’t sh, show interest about me.
 Researcher: Why?
 Child 2: They just call me ‘annoying’.
 Researcher: They call you ‘annoying’? What does that feel like?
 Child 2: It just upsets me.
 Researcher: It upsets you [. . .] Did you have to tell your story as part of the My Story Badge?
 Child 2: [speaks quietly] It’s like bullies can always learn to change.
 Researcher: So you mean they can become friendly? . . . Has that happened to you, have any bullies become friendly?
 Child 2: No . . . All I’ve got is three year 3 mates (younger children).

This child presents a complex picture, a situation in which he has shared his story with his peers, but remains feeling taunted and marginalized. The suggestion that bullies can change does not reside in a belief he holds for himself but, perhaps, echoes ideas taught to him. Another child articulated a very similar sentiment suggesting that ‘Even bullies can be friends’ and that ‘People can change’. The suggestion that ‘bullies can be friends’ provides children with a positive message of redemption and hope, but the implicit message for victims is that they should leave the metaphorical door open for bullies. To ensure that children are provided with appropriate support around their disclosures, facilitators of NHS Digital Badges should ensure that they provide confidential mechanisms for reporting bullying.

Some children felt that the badges paved the way for comparisons to be made between peers – ‘I learnt about other peoples ability to do things’, an experience in keeping with Gibson et al.’s (2015) suggestion that digital badges can provide a means of competition, enabling individuals to compete with themselves and their peers. However, comparisons may not always be favourable – ‘People can do stuff I can’t’. As pupils are able to see one another’s work (in the form of text or video) and badges earned, it automatically positions badges as symbols of achievement and success, open to the public gaze. While this may function as a positive source of competition for some, it is clearly framed by the child above as negative, generating uncomfortable feelings of inadequacy. We suggest that teachers should be aware of, and work to counter, the negative effects of competition induced by badges and the potential for demotivation (Abramovich et al., 2013).

Some children reported fear and anxiety associated with striving to achieve badges:

I felt scared because I didn’t no what to do and I didn’t no if I was going to do it.

For others, reflecting on their current circumstances or histories triggered painful memories or uncomfortable feelings:

I felt worried because I was writing about young voices, at that time my mum had hurt her back so she couldn’t drive, sit down without a special cushin or have much fun!

This child alludes to concerns about sharing his mother’s experiences of ill health. One of the potential problems of digital badges is that articulating their own biographies will inevitably involve talking or writing about others, and this form of sharing might result in them breaching

privacy and confidentiality in classroom and online forums. Raising concerns of this nature, one child said ‘That people can watch and learn about you so they can follow you’. Worried about the dangers of the online world, this child demonstrates an awareness of their potential vulnerability and the risks of being monitored or watched by others online.

This theme illustrates how important it is that children feel supported by their teachers throughout the entire process of engaging in and completing NHS Digital Badges. Emotional support should be made available to children during and after the process, especially where badges require them to share their life stories with their peers. Facilitators should be available to carefully manage children’s anxieties and the potential consequences (for individuals and their peers) of disclosures of difficult histories.

Building perseverance and determination

Digital Badges require individuals to strive towards fulfilling particular requirements, as such they engender and encourage ‘mastery-oriented’ patterns of motivation and achievement as well as what Dweck (2010) termed the ‘growth mindset’ (see also, Yeager and Dweck, 2012). Many of the children we spoke to valued and were highly motivated by the goal-oriented mechanism of learning that NHS Digital Badges offered them. They referred to feelings of pride, elicited by overcoming challenges and fears in order to earn badges:

I felt proud because it was one of the first badges I had completed using makewav.es.

I felt fab because I completed it! I felt like a star that shines bright.

I felt happy because it is hard to complete and I achieved something.

One of the teachers reported an increased sense of perseverance and determination in pupils following their engagement in NHS Digital Badges:

Teacher 1: They know that they want to achieve the badges, they’re motivated [. . .] when you give them a little bit more freedom and a little bit more enjoyment really in what they’re doing. So I would definitely say that, you know, they come out with a real spark and just building that resilience which in turn has helped us in class, you know, for them to become, you have to persevere with something and have a goal and work towards it.

In a similar vein, one child talked about the benefits of working to their full potential:

I learnt that if you try your best you can get loads of kind comments.

The data set indicated that children valued the ways that badges helped them to be persistent in the face of adversity. Working through difficulties evoked positive feelings of pride, a sense of achievement, social recognition and material (or virtual) rewards. This theme illustrates that engagement in Digital Badges, as perceived by children and their teachers, supported children’s self-esteem, functioned as a source of motivation and provided a goal for continued perseverance.

Discussion

This was the first study to explore the psychosocial impact of NHS Digital Badges as perceived by children and their teachers. Data indicated that, overwhelmingly, children and teachers reflected on

their involvement with NHS Digital Badges positively. They represented them as devices that had the potential to build perseverance, develop empathy and emotional awareness, build relationships and enhance acquisition of skills and knowledge.

It was clear from the children that the badges were at times a source of healthy competition and at others the instigator of feelings of inadequacy. By their very nature, once earned, badges become a public display of success and achievement. In this respect, they had the potential to have an adverse effect, inducing feelings of failure in those who might not have achieved a badge or who take longer to achieve than others. One of the benefits of the flexible quality control process of digital badges more generally is that children, regardless of ability, can work towards and achieve the same badges as their peers. In spite of this though, the public nature of sharing with classmates and teachers in person and in an online forum is likely to lead to children making comparisons with others. We recommend that support is available to children to ensure that engagement in these kinds of processes does not alienate or impede children less able. Furthermore, some children we spoke to suggested that participating in badges that required them to talk about their lives made them feel 'exposed' and vulnerable to mockery and bullying. It is, therefore, important that teachers manage children's engagement with digital badges carefully and sensitively, offering support at all stages of the process.

Limitations of the study largely revolve around its small scale. Our evaluation involved children from one academy and interviews with a very small sample of teachers. Low teacher involvement is a result of the embryonic stage of Digital Badges within the academy. Only a few of the teachers were familiar with them as they were in the early stages of being introduced into subject areas outside of information and communication technology (ICT). As Digital Badges increasingly become embedded into schools and into subjects beyond ICT, there will be opportunities to evaluate the impact on children on a larger scale. Another limitation of our evaluation, again, relating to scale, is that resources did not extend to investigating parental perceptions of the impact of NHS Digital Badges on their children's lives outside of school. This avenue could elicit data concerning the perceived impact on children and other family members, on sibling relationships and on maintenance and/or breaches of families' privacy. This article reports the first study of the psychosocial impact of NHS Digital Badges, providing a pilot for future evaluations in this area.

Conclusion

The findings indicate that NHS Digital Badges are a valuable health-related pedagogical tool for use with children, with scope to be implemented more broadly in educational contexts and to be applied in other health-related domains. However, as we have highlighted, there are potential vulnerability and safeguarding implications which would require careful negotiation and mitigation in future practice. Implications largely revolve around the public nature of children's biographical/familial stories, the risk of inducing feelings of inadequacy or exposing children to ridicule or bullying. We suggest that these three key areas, in particular, are given consideration by practitioners in future work involving NHS Digital Badges.

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