The use of mobile applications in health visiting to support school readiness

Abstract

Starting school is a major milestone in a child's life affecting not only the child but his or her parents and siblings too. As health visitors, we are becoming more aware that a child who is 'ready for school' when he or she begins their school career is more likely to reach their full potential. This is not only in terms of academic achievement but, and just as importantly, their social and behavioural skills which impact later in adulthood (UNICEF 2012). Health visitor responsibilities include supporting parents to maximise their child's health and development from birth onwards (DH 2009); a complex and challenging remit for which we need to be continually developing engaging strategies and tools. This paper reviews the collaborative development of the School Readiness Mobile Application for Bridgewater Community Foundation NHS Trust following the prestigious Journal of Health Visiting Award for School Readiness in which the University of Chester were recognised as key collaborators in this innovative development. The discussion seeks to inspire health visiting colleagues to search for collaborative partners to address school readiness in an engaging way with parents. The demonstration app can be viewed at https://vimeo.com/145453382

Introduction

Developing a child's 'school readiness' is becoming recognised as a viable strategy for enhancing their full learning potential. This is especially significant for vulnerable and disadvantaged children. We know that the concept of 'school readiness' is complex (Tickell 2011, Allen 2011, UNICEF 2012, Department of Education 2014) and has been linked with an increase in social and behavioural skills in adulthood as well as improved academic achievements (UNICEF 2012). The achievement gap between the poorest children and those most advantaged is clearly visible by the age of five, with far too many children starting in education without key skills of communication, literacy or simple maths (Ofsted 2014).

From a global perspective there has been increasing attention focused on the complexities of 'school readiness' as a potential strategy for economic growth; human capital is considered highly significant in sustaining economic development (UNICEF 2012).

What do we mean by school readiness?

The simplistic term 'school readiness' features in many documents, reviews and strategies and can be widely interpreted (Ofsted 2014); due to the complexities of the concept of

school readiness there is no agreed national nor international definition (UNICEF 2012, Ofsted 2014). It is accepted however, that school readiness is not only referring to the child's attributes but also to the roles and responsibilities of those caring for the child in enabling and nurturing the child to access learning opportunities (DE 2014). The comprehensive document 'School Readiness: a conceptual framework' (UNICEF 2012) explores all aspects of school readiness and proposes three dimensions (Table 1) which sit within two identified characteristic features of school readiness, namely 'transition' and 'gaining competencies'.

Table 1

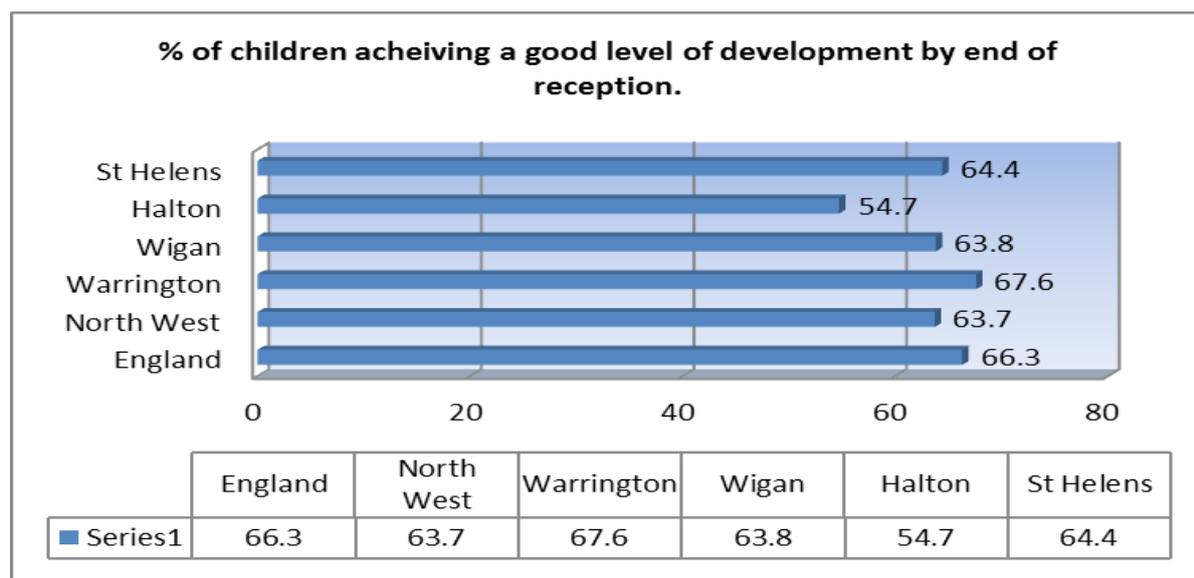| **Three dimensions of school readiness:** |
|---|
| **1. Ready children:** focusing on child's learning and development |
| **2. Ready schools:** focusing on school environment; practices which foster smooth transition into primary school, advance and promote learning for all children |
| **3. Ready families:** focusing on parental/caregiver attitudes and involvement in their child's early learning, development and transition to school |
| UNICEF 2012 |

These dimensions underpin the Ofsted Good Practice document (Ofsted 2014) which also draws on the significant work of Field (2010) with regard to how a child's home background can determine 'school readiness'. The child requires an enabling environment (DE 2014), one in which their learning experiences help them 'gain competencies' (UNICEF 2012). In addition, when the child is nurtured through positive relationships which build confidence and resilience they are more fully prepared for the 'transition' from home to school and their ability to cope in a busy classroom situation is increased (UNICEF2012).

With these dimensions in mind Bridgewater Community Foundation NHS Trust, which provides 0-19 Services in Warrington, Wigan, Ashton Leigh, St Helens and Halton, began exploring the challenges of addressing 'school readiness' in their locality. Data collated from children of reception age were below national average in all but one of the Trusts localities. See Table 2

Table 2

	% of children acheiving a good level of development by end of reception.

	England	North West	Warrington	Wigan	Halton	St Helens
Series1	66.3	63.7	67.6	63.8	54.7	64.4

Chart values: St Helens 64.4, Halton 54.7, Wigan 63.8, Warrington 67.6, North West 63.7, England 66.3

Sources; Child and Maternal Health Intelligence Network 2015, Department of Education 2015

After reviewing this evidence and the then current service provision, Bridgewater Trust identified the need to generate a collaborative approach to working across practice, education and corporate agencies in order to support the development of school readiness.

Within Bridgewater Health Visiting Team the use of social media to communicate with parents is well established. This innovation has been pioneered by the Clinical Systems and Performance Lead; a specialist health visitor with a passion for technology. The active Facebook page shares a wide range of relevant health messages and is managed by the Lead. A recent child safety campaign reached nearly 6,000 people (Wright and Lee 2015) therefore the opportunity to develop an intervention using technology such as a Mobile Application (app) appeared appropriate. The app was seen to be the tool of choice to promote school readiness 'universally' to all families however families designated 'universal plus' and as 'universal partnership' would receive more targeted focus.

Bridgewater Trust approached the University of Chester Public Health and Wellbeing Department within the Faculty of Health and Social Care to support the initiative. The University supported the development of the content of the app and commissioned Footsqueek, The Mobile App Company based in Chester, to support the technological development of the app- the magic bit! Footsqueek was established in 2011 and specialises

in the development of ICT solutions; websites, mobile applications or databases and even online voting systems and have a good record of success with NHS projects.

In order to understand the parents' perspective regarding school readiness in the Bridgewater footprints, the Facebook page hosted a questionnaire for parents to share their views on 'school readiness' utilising the free online SurveyMonkey software accessed via https://www.**surveymonkey**.co.**uk**/. Parents are an integral part of their child's school life and parental engagement with school is acknowledged as highly significant for success (Ofsted 2014). Therefore parents were asked to consider their priorities when preparing their children for school.

The questions to prompt this consideration were based on the four attributes that had been drafted by Champs, the Cheshire and Merseyside Collaborative presented in Table 3. The attributes were identified following an inter-disciplinary and interactive event in May 2015 which attracted colleagues across Cheshire and Merseyside who came together with the intent to agree attributes for school readiness as a basis for interventions aimed at preparing children for school in the region (Champs 2015). The survey had a reasonable response rate and some surprising results; some parents felt that being toilet trained before school was not a priority nor was the ability to drink from a cup rather than a bottle. Results were collated by Bridgewater and triangulated with the data from Health Visitors and Early Years Teachers in order to determine in which areas to focus when developing the app activities.

Table 3

The 'top 4 attributes' were;
Self- regulation /Self awareness; Is able to look after their own basic needs and can manage their emotions; *includes the ability to use bathroom, control temper, explain feelings*
Communication and Language; Be able to express self and be understood by everybody they interact with on a regular basis; *includes recognising their name, storytelling, rhymes*
Relationships and Social Interaction; Able to develop positive relationships with peers and adults and follow simple instructions and rules; *has confidence to make friends, share, care for others*
Parents/parental support.;Supportive of the importance of school readiness and working in partnership; *offer loving support to your child through talking with him/her,*

> *having fun, setting boundaries and encouraging and providing interactive play throughout the day you will be helping your child develop stronger 'school readiness' skills*

Adapted from Champs 2015

Designing and developing the app

The small project team comprised of the Clinical Systems and Performance Lead for Health Visiting, the University Senior Lecturer and the Managing Director of Footsqueek who met throughout the period of development. Initially it was thought that the app would only be available on iPhones with current versions of iOS and would be responsive to varied screen sizes utilising HTML 5. However as this was felt to be too exclusive it was subsequently decided to enable access to the app via a URL link from the Trust website. The Library Service have committed to provide support to parents that do not have access to supporting devices such as a PC or smart phone.   The other mode of access will be via a QR code which will be included on routine documentation sent to parents from both health visiting teams and Early Years Services.

The requirements of the project team were that the app was suitable for promotion to parents primarily by Health Visitors; it would include a quiz for parents and activities for children to complete. The activities were designed by the app developers in Footsqueek with feedback from parents via survey monkey regarding the appropriateness of the graphics. The purpose of each activity was to engage and motivate children to complete the tasks required in 'readiness for school' such as getting dressed, hand washing, feeding themselves, making friends and to stimulate discussion of social behaviours such as sharing and to enhance an understanding of emotions. It was felt to be important that each activity included a reward when completed; a certificate can be downloadable when all activities are completed. It was also decided that the app should have multiple profiles for siblings.

The search for relevant material to inform the content and design of the app was the remit of the Senior Lecturer; this involved a lengthy exploration of what technology was already available in this field but surprisingly this revealed rather a dearth of relevant material. A number of websites hosted by health organisations outside of the UK did provide inspiration for app games, additional pages of activities and web links. See www.readyatfive.org; www.healthnexus.ca and ww.beststart.org for examples. Nevertheless the literature search underpinned the selection of activities and provide the evidence base for the innovation.

Using the app

The app has been designed with the intention that parents work through it with their child in order to achieve maximum effect and benefit. The introductory pages briefly inform the parent or carer of the key themes or attributes that are helpful for their child's learning. The remit of the health and education professionals is to develop strong partnership with parents and carers, explaining how the app can support them to develop the home as a learning environment which in turn will help parents to increase their child's ability at school (Ofsted 2014). Bowman et al (2000) identified that children who are exposed to resources such as books, games, audio recordings and activities such as reading books, storytelling and verbal interaction not only show increased cognitive development but also increased social and physical development. Not only is the Bridgewater app a resource in itself but it has the potential of encouraging parents to develop further opportunities for home learning accessible via the additional activities tab on the home screen. These activities include suggestions such as simple cookery with the inclusion of an easy recipe, ideas for making greeting cards, enjoying a picnic and feeding the birds each with a brief introduction which highlights the relevance to school readiness.

The app is very much designed with children in mind, with each app activity being considered a game. It is not intended that children play the games alone but that each game stimulates parents to gain an appreciation of aspects of school readiness and the enthusiasm to support their child's learning. For example an activity identified as 'getting dressed' encourages the child to pick an outfit suitable for the weather. The parents work through the app activity with their child discussing how one would consider picking the most suitable outfit and getting dressed in a time limited situation perhaps selecting socks, shoes, coats appropriately. It is hoped that this will then inspire parents to develop this further by introducing this concept, plus the others exemplified in the app, into everyday life activities with further games and appropriate praise or rewards.

Feedback from first trials

Footsqueek have developed an interactive method for assessing the 'user-bility' of the app. A small number of parents, carers and children were given the app to 'play' with on a hand held device which was able to record the movement around the app and identify any difficulties the user came across. This data was supplemented by qualitative comment from each dyad. The positive comments related to the uncomplicated nature of the activities. The activities are relatively simple because achieving more simple tasks enables the child to go

on to develop more complex abilities (Bowman et al 2000). Traditionally, as Bowman et al (2000) discusses, preschool learning has centred around topics such counting, recognising colours, letters and words; maths, literacy and science which was appreciated by the users. Whilst children have a natural inclination to explore and learn within these areas it is important that we encourage holistic learning and incorporate the arts such as music, rhymes, craft activities, cooking which also give opportunities for developing language skills, reasoning and also social skills (Bowman et al 2000). Interestingly, it was the addition of music and sound effects that the users identified would enhance the app and engage the child more readily. This is now being addressed by Footsqueek as an additional small project to be completed before the official launch of the app this summer.

In addition to enhancing skills development and relationship building between child and parent the second intended outcome for the app is that the foundations for parent- school engagement are developed and that parents are enthused to engage with school to enhance their child's potential (Ofsted 2014, DE 2014). Bridgewater Trust will be working closely with Early Years Educators to monitor the potential effect of the app on this, as well as the child's attributes for school readiness. It is worth noting that despite this app being promoted by health visitors it is not designed to give advice or information about children's health topics. The aim is to signpost families who have concerns and stimulate awareness of the some of the key elements required for school readiness. To meet this need the details of the health visiting teams are available via the app and organisations such as BookStart, the Library Service and documents such as Birth to Five are also accessible via the app. It is possible to view a demonstration video that Footsqueek have developed for promotional purposes at
 https://vimeo.com/145453382

In conclusion

As we have highlighted school readiness is now a fundamental requirement to promote children's independence and improve their education and ultimately their improved health outcomes. Pre-school activities are essential to enhance a child's development and promote school readiness. Increasingly the use of technology for supporting and improving health outcomes is a key driver in health and social care. The app development team successfully collaborated to ensure that the app is compatible with all media platforms that parents are likely to utilise, has been developed for health professionals and parents to utilise with children and is fit for purpose for stakeholders, parents, carers and children alike.

The primary outcome of this innovative collaborative work is to increase the 'school readiness' attributes of children in the Bridgewater localities. It is hoped that the information and activities within the app will inspire parents to enhance their child's attributes ready for

school. As the app developers provide evaluation services in order to assess the 'workability' of the app and also the numbers of service users utilising the app Bridgewater Trust are confident of the longevity of the app and of the positive contribution it will make to families and their children.

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