

How can iPad apps enrich postgraduate psychology research?

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In this short Opinion piece, I outline how iPad apps can facilitate theory development, data collection, data representation and dissemination of postgraduate psychology research. I reflect on how apps supported my own postgraduate research practice and how one particular app – Our Story – enriched the individual stages of my research enquiry. I argue that iPad apps are part of an emerging metaphor according to which postgraduate psychology is a dynamic and iterative research process, rather than a linear static model.

iPad apps

DESPITE a relatively short presence on the market, iPads have gained widespread attention in several fields, including psychology. Several researchers have noted iPads' distinct potential to enrich the research process (e.g. Press, 2011). Nguyen et al. (2014) systematically investigated research evidence on using iPads in higher education sector and concluded that for researchers, iPads offer benefits associated with electronic information dissemination, academic administration and professional development support. These benefits are relevant for researchers at any stage of their career, including postgraduates. However, beyond informed commentary shared through academic blogging (e.g. <http://nnoakes.wikispaces.com/Using+the+iPad+to+Support+Academic+Research>), there is little known about how postgraduate researchers might use iPads in their work. I provide some examples for how apps might enrich various stages of the research process. I focus on iPad apps but many of the benefits I describe are applicable to other comparable tablet apps.

First, iPad mindmapping apps have a great potential to help researchers with the formulation of research questions and study design. iPad apps like iThoughts allow users to note down ideas, the relationship between them, *and* to flexibly search within and across maps and edit specific ideas (delete or highlight them). In addition, users can

import and export maps; and use several topic attributes which are not available in other comparable software. For example, ideas in the iThoughts mindmap can be drawn by finger or using pre-established shapes (e.g. oval, line, etc.), they can be distinguished by colour, tasks or timeline (e.g. start/due date, progress) and duration and resources necessary. This flexible approach makes idea visualisation easier; it facilitates collaboration, and supports a focused integrated thinking process.

Second, apps can facilitate data collection, including that on the history and pattern of use of individual users without the need for an intrusive mechanism. Currently, researchers who develop their own apps can embed some simple data collection mechanisms into the apps they use for research (Ferguson, Sheehy & Clough, 2014). For example, an iPad app for promoting numeracy skills has been created at the University of Gothenburg (Barendregt et al., 2012) which can record number of successful and failed answers but also more general patterns of use (e.g. location of tapping) and thus evidence more effectively and objectively individual usage and the process of change over time. Furthermore, by seamlessly integrating iterative processes into their design, iPad apps offer multiple opportunities to capture data as a user interacts with the device (e.g. the video Cantasia software). In addition, with inbuilt survey

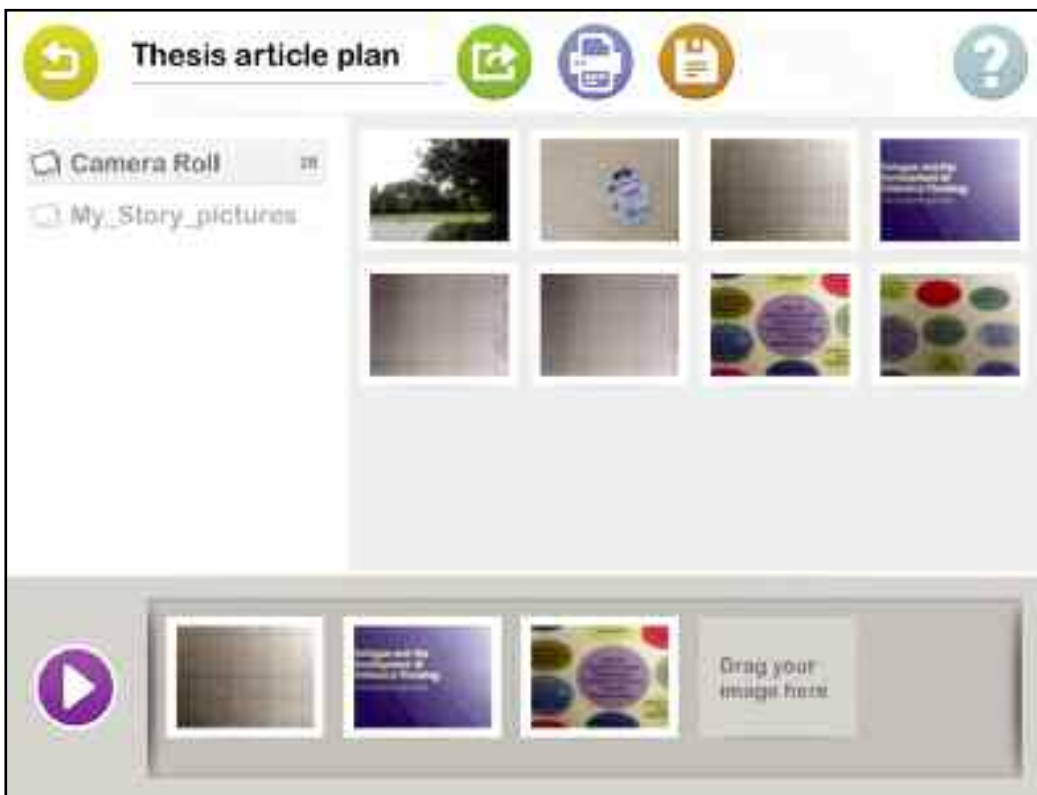
features, apps can solicit user-feedback from global, varied and unpredictable audiences. These affordances are noteworthy for the study of several processes studied in psychology (e.g. reading habits, perception).

Third, apps which were designed or co-designed by researchers can provide a broader continuum of public engagement than conventional means. This is because apps can translate research findings into a tangible, widely accessible tool, and as such evidence impact in terms of specific activities, individualised to the users and their contexts. This potential has begun to be widely realised in other research areas. For instance, an app to measure pulse oximetry (Phone Oximeter™) has been developed at the University of British Columbia or the Shark Net app™ developed at Stanford

University helps the public to track white sharks and know their location in real time and in relation to their position.

In my own research, I have used one particular iPad/smartphone app called Our Story which was developed as part of my postgraduate work. Our Story (<http://www.open.ac.uk/creet/main/projects/our-story>) was designed to enable collaborative production of personalised stories at home and classrooms and to better understand the processes that enhance the development of traditional and digital literacy skills in young children. The app has a simple, child-friendly user-interface, with a gallery of pictures on the top and a filmstrip on the bottom, where pictures can be dragged and put in a chronological order. Pictures can be annotated with text or can be accompanied

Figure1: User-interface of the Our Story app (iPad app version 1.2).



by audio recordings. The app is open-ended, with no restrictions for users' content, so that each story is personalised to the user.

I have discussed the research underlying the app development (Kucirkova, 2013) and the opportunities the app afforded for collaborative and participatory research with teachers and children elsewhere (Kucirkova, 2014a, 2014b). In this piece, I focus on the ways in which the app facilitated several processes of my postgraduate work.

For data collection, Our Story facilitated the organisation of audio, images and text material in a chronological order. The film-strip feature was particularly helpful for organising individual steps of the research project, including definition of a problem, development of the research design and collating written as well as pictorial and audio materials. The potential of the app to support a simple organisation of research process has been recently extended in another design upgrade to the app, aimed to support children's research inquiries (Our Story3). In the final stages of my PhD, I used Our Story to put together a multimedia story which explains the main findings of my postgraduate research through a narrated picture sequence. This video story has become part of a university initiative to encourage postgraduate students to innovatively share their postgraduate research (<https://www.youtube.com/watch?v=LORiNIIAUKY>).

Overall, Our Story facilitated a much wider dissemination of my research than what would be possible with traditional means. Given that the app is available as a free public download on the global App and Googlemarket store, it enabled our team to reach varied audiences across the world from various milieus and fields. Practitioners from early years, special needs as well as primary schools used the app to encourage children in personal story-telling and thousands of teachers and parents from the UK as well as the US, Australia or Japan downloaded the app to create personalised stories with their children. In using the app, they

directly engaged with the research idea of personalised digital stories and could verify its impact on the children's, or their own, digital literacy skills.

As for the impact of this work, teachers from local schools in the UK, as well as Spain and the US contributed their insights to the research process and some of their ideas were translated into further design of the app. The possibility for app updates allowed for gradual improvements, which fitted well the dynamic process of research activity. Moreover, other research teams have used the app in various other projects, for example, McPake & Stephen (2014) applied the app in two Gaelic-medium nurseries and found that the app has potential to support the development of children's Gaelic language and early literacy skills. Cremin et al. (2014) used Our Story to elicit children's personal accounts of their story-making experiences in schools. In these projects, the app has become part of a community of people who have found common ground through a shared interest and shared product ownership. I am currently scoping work to elucidate how local communities can nurture children's holistic development at the intersection of personal and social experiences, mediated by personalised technologies such as Our Story.

In a broader sense, these benefits are aligned with an emerging metaphor of postgraduate research, which places emphasis on innovative ways for sharing and producing research.

Metaphors for psychology PhD

One dominant metaphor of a psychology postgraduate research is that of a static building which is built in several stages, with each stage requiring a distinct set of skills and knowledge. There are several stages characterising this process, but most evolve through the cycle of literature review, study design, data collection, data analysis and findings dissemination (cf Sherratt et al., 2000). Depending on the design and chosen research method, there may be variation in

order for individual projects but to achieve a PhD qualification, researchers need to follow these formal steps. The final product of such a process is a Phd thesis which is characterised by a common layout of three main parts: 1, there is a support base, analogous to the literature review and theoretical framework which hold the entire body of work afloat; 2, the main section which presents the research findings and the ways in which they were obtained; and 3, the roof, aka the Discussion section, which clearly marks where the work finishes and where it could be extended.

This metaphor reflects the standard report structure in psychology and related science disciplines, and its mastery is often taken as an important indicator of research skills. However, there is a broadening consensus that 'the standardisation of research and publications into formulaic patterns' might constrain innovative approaches and the social relevance of researchers' work (Alvesson & Gabriel, 2013, p.245). A growing number of academics (e.g. Richtel, 2012) have voiced concerns over the value of this form of communicating research and its reach outside the academic world. Recently, the idea to reinvigorate academic research and make it more accessible to diverse publics has become part of a broader strategy involving a number of research councils, including Research Councils UK (<http://www.rcuk.ac.uk/Publications/researchers/grc/>).

The use of new technologies has been central to these efforts, with several postgraduates leveraging the affordances of web 2.0 technologies, notably social media channels. In psychology and related disciplines, postgraduates have also engaged in innovative Phd representations. For example, international competitions such as 'Dance your Phd' (<http://gonzolabs.org/dance/>) which encourage students to interpret their Phd in a video form have enjoyed great popularity in the past seven years. Some postgraduates have used animated video stories to represent their postgraduate work and shared these

online on Youtube or Vimeo channels (e.g. Becky Parry <http://vimeo.com/69974898>). These efforts exemplify the potential of new technologies to innovatively represent and globally disseminate postgraduate work, and to enrich the traditional model of research representation. They also signal the need to extend the traditional 'building metaphor of Phd research' to that of a living community.

Living community metaphor

Conceptualising postgraduate work as a living community who transform a piece of research (or a static building) into a truly alive community might better illustrate the iterative process of developing new understandings. Thinking of postgraduate research in terms of communities acknowledges the increasingly participatory, inter-disciplinary and inter-organisational collaborative nature of research and the potential for research to influence eclectic, multinational and global audiences (Silbereisen, Ritchie & Pandey, 2014). These communities, together with the postgraduate researcher, sustain the work beyond thesis or journal publications and extend it to online and/or offline discussions and relationships. Postgraduate researchers who situate their work within such participatory networks often adopt new technologies to enrich the research process. Drawing on my own Phd experience, I recommend to extend these efforts to iPad apps, as another fruitful way of aligning one's work with the living community metaphor.

Conclusion

Despite the widely acknowledged potential of technological advances to enrich psychology postgraduate work, the traditional Phd thesis is remarkably old-fashioned: a structured piece of writing deposited in the University Library written for a specialised academic audience. I reflected on my own postgraduate research with the Our Story app and outlined how psychology postgraduates might benefit from including the use of iPad apps in their

work. I argued that apps may offer an opportune technological solution for enriching postgraduates research and could be important building stones for innovative research, sustained by a living community. This could contribute to developing alternative means for implementing accumulated knowledge of the psychology research discipline.

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