TECHNOLOGY

Phil Topham, reflects on issues arising from developing a self-help mobile phone application for students

MAKING PEOPLE APPY :)

Over the last decade or so, in this journal and others, there have been a number of informative and questioning articles about online facilities for student support. I hope to add to that conversation by reflecting on the experience of developing a mobile phone application (app) for use by students. Developing the app has been an opportunity to consider how online self-help might be formulated and engaged with, and how online facilities interact, or overlap, with helping relationships.

The internet, smartphones, iPads and the like have enabled a cultural shift towards getting information and social contact when and where you want it, although I suggest that we have a range of relationships to online material. Out and about in Devon towns recently, I saw realtively few people with phones stuck to their ears, while I note that London leads the UK for book bloggers, at 30 per cent[1]; my 87-year-old mother is a frequent laptop user, running her residents' association database on Excel, while my own mobile phone lives mainly in its box, along with the slow cooker and other useful gadgets.

This university runs computer-confidence-building courses for students young and old, and anecdotal evidence from students suggests that, beyond laptops and mobile phones, they are not a homogeneous group in their use of online technology. In a recent study of postgraduate students' use of e-learning technology, the author concluded that 'they do not perceive themselves to be adept users of IT' and that their enhanced useability of IT indicates that 'what counts most is curiosity and motivation to address a particular need.'[2]

Right Figure 1 – Idea for the self-monitoring screen of an app. *(Reproduced with acknowledgements to Christopher Anstey, UWE.)*

An app for social anxiety

I am part of a research team that is developing a mobile phone application for students with social anxiety in learning situations such as seminars and presentations. This ad hoc group includes two psychologists (health and counselling), two computer scientists (specialising in web design and interaction design) and a student counsellor.

Social anxiety is a significant concern for about 10 per cent of students[3]. The research literature, including surveys here and at the University of Plymouth, indicates that it has an adverse impact on engagement with learning and on student wellbeing[4,5]. This journal, too, recently published an article on student social anxiety and options for intervention[6].

Social anxiety – a fictional vignette

Alistair is 22 and in his second year of studying chemistry. He lives in a shared house with four other male students. He is not unfriendly but appears rather reserved and tends to avoid the shared living spaces. He is a member of the university photography club, goes to the gym once a week but does not go out much to bars and parties with others in the house. When he does go out, he tends to get quite drunk and become more talkative. Most evenings he spends a couple of hours on the internet, often emailing his family and a couple of close friends at home.

Alistair is academically able but, ever since being bullied in primary school, has felt anxious and uncomfortable in educational settings. He is relaxed when working in the library or the laboratory but gets very anxious when he has to talk about his work with students and staff. He is inclined to rush and mumble his speech, which means that – because people are not sure that they have understood him – he attracts the attention that he is trying to avoid. Afterwards he feels angry with himself, avoids people for a couple of days and may get drunk alone in his room.

Alistair has never sought help for his social anxiety.

As people with social anxiety often feel embarrassed about seeking help in person, we saw online facilities as a way of offering support, and a mobile application as most flexible. We invited final year undergraduates to design an app as part of an assessed module, providing them with a briefing about social anxiety in learning, its impact and some fictional case histories. Our students were creative and realistic in their design proposals, the best appearing to empathise well with the disabling experience of social anxiety.

Help yourself

The idea of our app is rooted in the domain of self-help. Self-help interventions typically provide information about an area of concern (eg weight) and its impact on health; they may provide a tool for self-assessment and monitoring the concern (eg charts or diaries) and may provide general guidance on making changes in the area of concern (eg dieting, exercise). The benefits of self-help include increased awareness and control of one's health while making positive changes in daily lifestyle and personal patterns. For colleges and universities, the rationale for providing online self-help facilities include:

▶ Relieving pressure on face-to-face services

▶ Connecting the individual in a mass education system

▶ Accessibility and inclusivity

▶ Belief in value of autonomy

▶ Social acceptability of online use

▶ Some people are more comfortable online

▶ Facilitating specialist/professional contact

Self-help via bibliotherapy (reading!) has a respectable history going back to the 19th century and book-prescribing by GPs is not uncommon[7]. In predigital times, our counselling service had a collection of paper leaflets about common mental health concerns and student issues. The way in which we provided self-help was on the lines of 'You might like to read this and perhaps we can discuss it next time we meet'. (One popular leaflet was entitled 'Your brain starts dying at 22'; not quite physiologically correct, but aiming to reassure students that their concerns may reflect normal development. Years later, we heard that it was popular as a birthday card for friends reaching their 22nd birthday!)
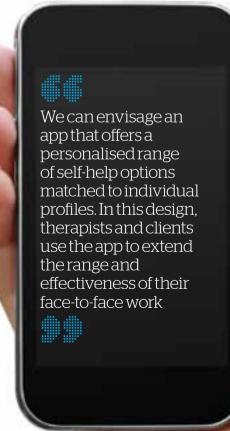
Student clients did find leaflets useful, and perhaps we liked to be offering something tangible, but they did not constitute a structured self-help process. It was also a period when the dominant therapy model was person-centred, with its assumption of healing and growth between sessions. With the shift to short-term work and cognitive behaviour therapy (CBT), there is an expectation of participation by the client ('homework') while away from the therapist.

Using social anxiety as an example, we can draft a model of self-help where clients progress from increasing awareness about their concerns towards sustainable change in those concerns.

Level 5:	Sustainable personal change.
Level 4:	Persistent engagement in targeted self-help.
	Ongoing monitoring and evaluation of impact.
	May include peer/professional support.
Level 3:	Trialling self-help options matched to personal profile.
	May include professional consultation.
Level 2:	Self-monitoring of profile to establish baseline impact and variations.
	Profiling by clinical features: emotional, physiological, cognitive, behavioural.
	Profiling by situation: lectures, seminars, presentations, group projects.
Level 1:	Self-identification guidance: *'Do I suffer from social anxiety and to what extent?'*
	Information about social anxiety, its impact, methods and sources of help.
	May include links to further information and support groups.

Online self-help

The basic elements of traditional self-help – information, self-assessment, guidance – transfer easily to websites and apps, and are widespread on health-related sites. A BBC report[8] noted that Google has 30,000 apps and suggested that global app downloads will reach 50 billion by 2012. While most apps are for recreational and educational use, the number of apps for health is growing. The theoretical basis of online help for mental health concerns is at an early stage, but CBT, with its semi-structured process of personal discovery and testing of cognitive-emotional structures, offers an approach that appears suited to online facilities. The clinical structure of our app was based on the affective, physiological, cognitive and behavioural features of social anxiety reported

> " We can envisage an app that offers a personalised range of self-help options matched to individual profiles. In this design, therapists and clients use the app to extend the range and effectiveness of their face-to-face work "

in student surveys. These are consistent with self-presentation and cognitive models of social anxiety[9,10] that underpin CBT for social anxiety.

Useability

On the strength of the student projects, we received funding to develop and test a working prototype, starting with its useability as a self-assessment tool. With a software designer on board, we held student workshops on the features of the app that would be helpful. We recruited participants through advertising on campus and within the counselling service; several had experience of social anxiety and wanted to help others. We noticed that current sufferers felt able to join our group workshops (they were given the option to be seen individually) although some did not turn up at all. Some students then trialled a basic version of the app on smartphones in their daily life, giving us feedback on its useability and suggestions for improvement.

One of the benefits of working in a multidisciplinary team is getting connected to new areas of knowledge: I have begun to learn about interaction design, the science of how people interact with machines and a subject that practitioners considering online facilities may wish to explore. I leave the concept of 'cognitive friction' to your imagination[11].

Therapeutic components of online self-help

Useability supports engagement; user engagement and persistence are central to therapy, to self-help programmes and to online facilities. An engaging mental health app will be accessible and relevant to the user's needs; it can also provide features that aim to motivate users and to programme self-help activities over time[12].

Two studies that contribute to our understanding of engagement processes are of interest. Clients' adherence to a self-help programme was enhanced by recording instances of gratitude more than by keeping a thoughts diary, suggesting that emotional factors may be important[13]; and creating moderate levels of uncertainty (as in online gaming) has been shown to enhance neural reward signals and engagement with learning processes[14].

There are other components of psychological change that may contribute to online self-help. The instillation of hope in the client is an initial benefit of therapeutic contact and a motivator for further engagement[15]; the credibility of the therapy is a predictor of therapy outcomes[16], while a sense of autonomy in the client enhances therapy outcomes and maintenance[17]. There are interesting challenges in exploring how these components may, or may not, map to the technical possibilities and useability of online devices.

Therapeutic relationships

Online self-help may involve relationships with a therapist, with an online device, and with peers. I chose the title of this article after I saw the word therapy (with two 'p's) used to describe the use of mobile phone apps in therapeutic practice. In America they are also called 'therapist extensions', perhaps not wishing to suggest that the therapist's role is at risk in an online future; to make clear that the app is the extension, not they an extension of the app.

From the pyramid model, above, we can envisage an app that offers a personalised range of self-help options matched to individual profiles. In this design, therapists and clients use the app to extend the range and effectiveness of their face-to-face work. For example, socially anxious clients tend to over-focus on their inner thoughts and reactions; in-session work can show a client how to be more flexible in their focusing and thus reduce a source of anxiety. A mobile app can support this adaptation by programming distractions, reminders and events to help users persist with practice in changing their attentional focus. Nonetheless, significant personal change (towards level five of the pyramid) may require therapeutic support and guidance, more so where concerns are entrenched and part of identity. The boundaries between what apps can do and what requires therapist support have yet to be determined; there is scope for innovation and research.

Face-to-face therapy starts with the development of a working relationship in which the support helps clients to meet the challenges of therapy. But what happens, psychologically, when you switch on your computer or mobile phone, when you access a website or an app? It is clear that people have strong, even dependent, relationships with their computers and phones[18], but it is not clear how those relationships are constituted or how they may facilitate engagement with self-help programmes.

A survey of clients' experience of psychotherapy[19] classified helpful events as task-based (new perspective, problem solution, problem clarification, focusing awareness) and interpersonal (understanding, client involvement, reassurance, personal contact). This categorisation suggests that an app, an inanimate piece of software, is more likely to facilitate task-based help. It certainly feels less likely that the helpful interpersonal elements would transfer to, or derive from, relationship with an app. Our emotional relationships with information technology and online devices have been explored since the 1960s and justify a separate paper[20]. Recent studies suggest that the emotional components of everyday mobile phone and web use are focused on people, not information[21]. Yet if the information is deeply personal and engaged with the support of a therapist, might that increase emotional connection with the app?

Although many students use social networking sites, our workshop participants, with self-declared experience of social anxiety, made it clear that they would not welcome a social networking feature on the app. While these responses are understandable, graduated exposure to feared situations are a useful part of anxiety management programmes. Many self-help sites, including Social Anxiety UK[22], have links to online and offline support groups and offer discussion boards and chat rooms. There is a fairly well evidenced assumption that social support is helpful in managing personal concerns. It may be that this becomes more attractive at a certain stage of self-help, just as people are more prepared to consider group work after a period of individual therapy. Thus there are conflicts between what users want and what may be clinically desirable which have to be negotiated in the design process.

Unfinished business

In this article I have scratched the surface to suggest that there are features of online self-help facilities – interaction design, software potential, psychological components of self-help and therapeutic relationships – which invite further exploration. There are several further issues which I have not mentioned at all: there is a need to consider the ethical implications of offering therapy by phone, the management of risk, the perceived security of personal devices and institutional servers holding personally sensitive information.

Although self-help for mental health concerns is well established in the NHS and other sectors, its evidence base remains somewhat uncertain[23,24]. Evaluation of our app to date has focused on its useability rather than its clinical efficacy. Useability supports client engagement but managers and funders will want to see evidence of clinical effectiveness from controlled trials. As yet, there is no measure of social anxiety in learning, which would be needed for such trials, although adaptation of current measures might be possible. If it is shown to be effective, the structure of an app for social anxiety should be transferable to other apps. With modifications to its content it could be used with other mental health concerns for which cognitive behaviour therapy is a recommended intervention.

The design process has stimulated team dialogue around integrating useability features with clinical structures. This continues as we work towards developing more sophisticated features of the app and as we engage student users with its therapeutic possibilities. I believe that our multidisciplinary mix of researchers, practitioners and students makes for a better, if slower outcome. We will keep you posted, on and offline.

I welcome comments on this article and contact with practitioners or researchers who would like to collaborate in the areas discussed here.

Phil Topham is a counselling psychologist and researcher at the University of the West of England, Bristol.

References:

1 Social Media Library. http://www.socialmedialibrary.co.uk/blog/2011/02/read-this-book-blogging-in-the-uk/; June 2011.

2 Masterman L. Thema: exploring the experiences of master's students in a digital age. JISC Learner Experiences of E-Learning programme. University of Oxford; 2009; p.62.

3 Russell GC, Shaw S. A study to investigate the prevalence of social anxiety in a sample of higher education students in the United Kingdom. J Ment Health. 2009;18(3): 198-206.

4 Russell GC. Student Social Anxiety: an exploratory web-survey. http://escalate.ac.uk/2159; 2008.

5 Topham PW. Feeling stupid: a survey of university students' experience of social anxiety in learning situations. Project report: University of The West of England, Bristol. https://eprints.uwe.ac.uk/164/; 2009.

6 O´Dochartaigh E. Taking social anxiety seriously. AUCC Journal. 2011; May: 2-6.

7 Frude N. A book prescription scheme in primary care. Clin Psychol Forum. 2004; 39: 11-14.

8 Mobile application sales to reach '$17.5bn by 2012'. Maggie Shiels. BBC Technology reporter, BBC News. Silicon Valley. http://news.bbc.co.uk/1/hi/technology/8571210.stm; 3 March 2010.

9 Schlenker BR, Leary MR. Social anxiety and self-presentation: a conceptualisation and model. Psychol Bull. 1982a; 92: 641-669.

10 Clark DM, Wells A. A cognitive model of social phobia. In: Heimberg R, Liebowitz M, Hope DA, Schneier FR (eds). Social phobia: diagnosis, assessment and treatment. New York: Guilford Press; 1995

11 Cooper A. The inmates are running the asylum: why high-tech products drive us crazy and how to restore the sanity. Sams-Pearson Education; 2004.

12 Suite101. CBT Applications: http://www.suite101.com/content/best-cbt-iphone-apps---cognitive-behavioural-therapy-applications-a335520; Jan 21, 2011.

13 Geraghty AWA, Wood AM, Hyland M. Attrition from self-directed interventions: investigating the relationship between psychological predictors, intervention content and drop-out from a body dissatisfaction intervention. Soc Sci Med. 2010; 71: 30-37.

14 Howard-Jones PA. From brain scan to lesson plan. The Psychologist. 2011; 24(2): 110-113.

15 Frank JD, Frank JB. Persuasion and Healing: a comparative study of psychotherapy (3rd ed). Baltimore: Johns Hopkins University Press; 1993.

16 Meyer B, Pilkonis PA, Krupnick JL, Egan MK, Simmens SJ, Sotsky SM. Treatment expectancies, patient alliance and outcome: further analyses from the National Institute of Mental Health Treatment of Depression Collaborative Research Program. J Cons Clin Psychol. 2001; 70(4): 1051-1055.

17 Ryan RM, Deci EL. A self-determination theory approach to psychotherapy: the motivational basis for effective change. Can. Psychol. 2008; 49(3):186-193.

18 Walsh a SP, White KM, Young RM. Over-connected? A qualitative exploration of the relationship between Australian youth and their mobile phones. J Adolesc. 2008; 31:77-92.

19 Elliott R. Helpful and nonhelpful events in brief counseling interviews: an empirical taxonomy. J Couns Psych. 1985; 32: 307-322.

20 Turkle S. The third culture. http://www.edge.org/3rd_culture/story/101.html. Webpage undated. Downloaded May 2011.

21 Vincent J. Emotional attachment and mobile phones. Knowl Technol Policy. 2006;19(1):39-44.

22 Social Anxiety UK. http://www.social-anxiety.org.uk/. Accessed May 2011.

23 Khan N, Bower P, Rogers A. Guided self-help in primary care mental health: meta-synthesis of qualitative studies of patient experience. Brit J Psych. 2007; 191:206-211.

24 National Institute for Mental Health in England. Self help interventions for mental health problems. Policy Research Programme Expert Briefing. London: Department of Health; 2003.