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Introduction

Posters at medical congresses are a well-accepted means of communicating information. However, a conventional printed poster offers limited opportunities to interact with data and concepts. To explore novel approaches to engage audiences, PAREXEL, in collaboration with authors of an international survey and AstraZeneca, has developed an interactive poster (iPoster™).

Background

- PAREXEL based the concept for the iPoster™ on the principle that learning is not just transmitted, but is achieved by continual engagement through interaction.
- Neuro-linguistic programming (NLP) provides a framework on which to base an effective learning experience. It was developed in the USA in the 1970s, initially as a method to identify effective aspects of communication, but has subsequently gained popularity as a means of personal development.¹
- NLP is based on the supposed connection between personal experience (neuro), language (linguistic) and patterns of behaviour (programming). Its proponents consider that it has value for teaching and learning. Effective learning is promoted by an experience that affects each of the three NLP domains.
- Individuals have different learning styles that have to be taken into account for successful communication:
 - Visual: learn by looking and watching
 - Auditory: learn by listening and speaking
 - Kinaesthetic: learn by experiencing and doing.
- People have the capability to use all three styles to learn, but predominantly employ one. It is well established that people retain 10% of what they see, just 40% of what they see and hear, and 90% of what they hear, see and do.
- Combining the tenets of NLP and the appreciation of different learning styles, PAREXEL developed an iPoster™ to give users an auditory, visual and kinaesthetic experience.

The technological foundations of the iPoster™

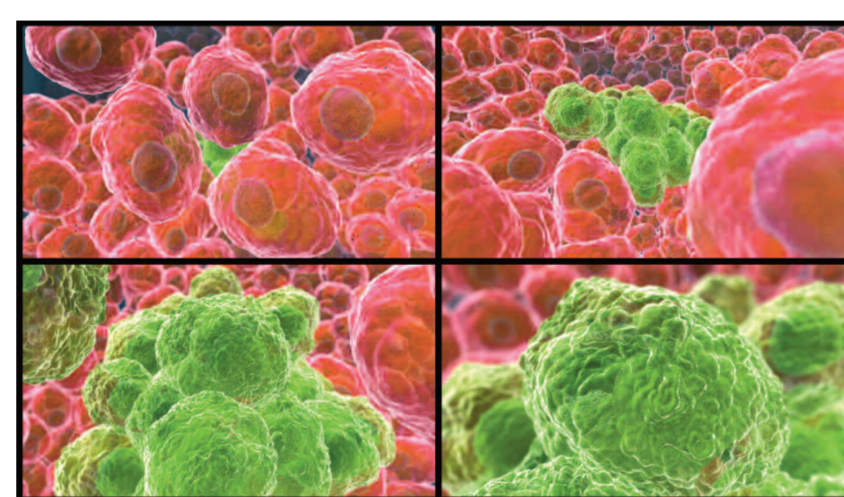
The development of the iPoster™ was under-pinned by educational technologies that are increasingly used in schools, such as interactive whiteboards. An interactive whiteboard is a large, touch-sensitive board which is connected to a digital projector and keyboard. They are reported to be popular with both teachers and pupils and increase participation in lessons from a whole class perspective.²

- Interactive, touchscreen technology is a feature of many handheld electronic devices and is becoming widespread in commercial and promotional settings. Physicians are exposed to the technology in congresses through its use at exhibition booths. There is a growing trend to provide patient education interactively. There is, however, little if any use of interactive technology to deliver educational and scientific content in the poster sessions at congresses.
- A typical scientific poster contains lots of very small text to convey the large amount of data contained within. The iPoster™ technology can show a large amount of data on a single screen, but by incorporating a zoom-in/-out functionality the content is easier to read.



Aspects of the poster content that enhance the iPoster™ include video interviews with lead authors or key contributors and mode-of-action animations.

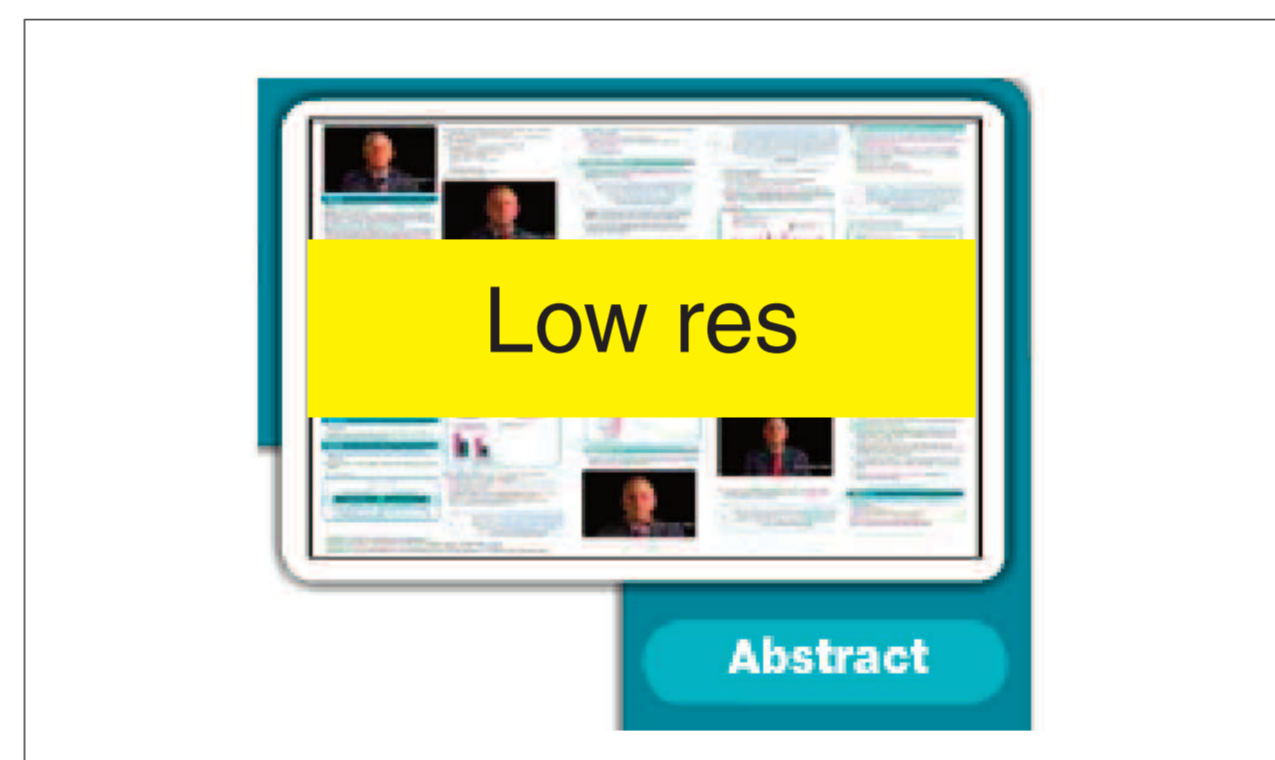
The main driver behind the development of an iPoster™ is the content 'interactivity'. The goal is to deliver an experience beyond that achieved by two-dimensional print.



Data charts and graphs may be animated, and narration can be added to bring the key messages to the fore. The iPoster™ is based on proprietary technology, which allows it to be delivered to desktops and via the internet as well as shown at congresses.

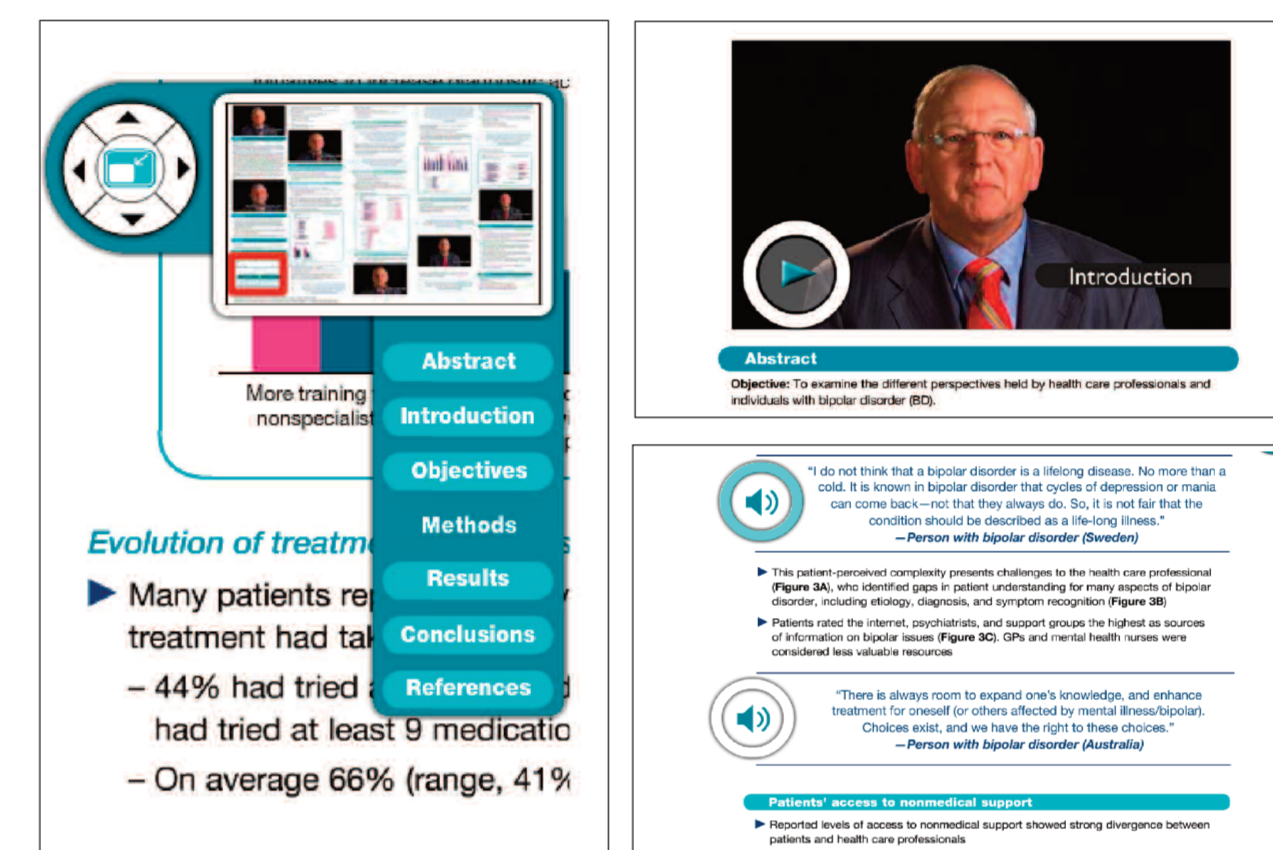
An iPoster™ example

- The iPoster™ reported findings of a major international survey of experiences of 643 health-care professionals and 2688 patients with bipolar disorder, their carers and patient advocacy groups.³ The content was developed by Professor Michael Berk, Professor Guy M Goodwin, Dr Alexandra Wyke and Dr John Tiller.



- The iPoster™ was shown at the 4th Biennial Conference of the International Society for Bipolar Disorders (ISBD), São Paulo, Brazil, 19 March 2010.³ A dedicated area in the congress hall was set aside for the iPoster™ and physicians were directed to it from the printed poster which was displayed in the Poster Hall.
- The survey questions were broadly divided into the following topics:
 - Accurate diagnosis and appropriate treatment
 - Patients' access to information
 - Patients' access to non-medical support
 - Quality of life
 - Doctor-patient relationships
 - Public attitudes toward bipolar disorder.
- The size and scale of the survey meant that it provided a rich source of information about the experiences of patients, carers and health-care professionals.
- The wealth of quantitative and qualitative data is presented in graphic form to convey the key findings.
- Verbatim interviews with patients provide the opportunity to communicate the personal experiences of living with bipolar disorder in sound bites.
- Comment and context is provided by the survey authors.

Example content from the iPoster™



Above left: The touchscreen technology allows viewers to move around the poster and to zoom in to an area of interest by touching it. A navigation guide shows which part of the poster is being viewed.

Above top right: Clicking on a picture of the author, Dr Tiller, plays a video clip in which he explains a finding from the survey.

Above bottom right: Clicking on the icon by the blue text plays an audio clip of a patient's comment, voiced by an actor.

Experience with the iPoster™

- The iPoster™ was well received by the survey groups and the poster authors.
- Judging by feedback at the ISBD Congress 2010, the iPoster™ successfully engaged the audience and impressed attendees. Comments included that 'its format would be useful for more complex data dissemination, involving Kaplan-Meier curves, and mode-of-action footage'. One delegate said 'this is fabulous, it really brings the science to life'.
- Dr Tiller, who presented the iPoster™ at the ISBD, said 'The interaction and engagement greatly enhanced the learning experience, with active engagement as doctors explored the elements of the poster. he whole experience was enhanced, as is a normal poster, by one of the authors being present to explain and discuss the poster in more depth.'

'This technology in my opinion is a great advance, with the potential to add to the whole learning knowledge and skills base of doctors exploring the interactive poster. It also has the potential in clinics and doctors' surgeries as a valuable patient and carer educational aid.'

Conclusions

- iPoster™ presentations represent an alternative to the more conventional printed posters, with the potential for enhanced learning.
- This technology may ultimately change the way in which poster sessions are convened, and moderated.
- Next phase is to validate the concept.

Acknowledgements

- We would like to acknowledge the contribution of the ISBD poster authors for their commitment to the development of the poster and iPoster™ and for their data.
- We would also like to recognize the skills of PAREXEL Digital Media Department in constructing the iPoster™.

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