

Digital storytelling for reflection in undergraduate medical education: a pilot study

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WHAT IS ALREADY KNOWN IN THIS AREA

- Reflection is essential for lifelong learning and professional practice but often there is low engagement by undergraduate medical students.
- Digital storytelling has been used to engage and stimulate reflection for reflective learning in a variety of contexts but there is little research in undergraduate medical education.

WHAT THIS WORK ADDS

- Digital storytelling can effectively engage undergraduate medical students in reflection.
- The process of creating a digital story can stimulate students to carefully consider and reflect upon why they collect, select and present the various photographs.

SUGGESTIONS FOR FUTURE RESEARCH

- An evaluation of the use of digital storytelling for reflection is recommended in a larger sample of learners in different contexts, including undergraduate and postgraduate.
- Comparison of reflective learning between digital storytelling and text-based reflective writing is recommended.

Keywords: e-learning, personal and professional development, reflection, undergraduate medical education

BACKGROUND

Reflection is widely considered to be essential for lifelong learning and professional practice but it is a nebulous concept with a variety of intended outcomes. A recent review of the use of reflection in medical education considered that it was a process in which greater understanding of self and situations is created to inform future action.¹ This process requires an initial phase of 'noticing' when the learner begins to realise that there is a discrepancy between their current actions (based on beliefs and values) and the actions required for effective resolution of the situation that they face. Subsequent phases include making sense of the situation and applying the new understanding to both present and future situations. An essential

aspect of reflection is 'noticing' and this is particularly powerful when there is a 'disorientating dilemma' in which fundamental personal belief and value systems are challenged.²

An important aspect of reflection is the identification of these 'disorientating dilemmas' by the learner but many learners find this difficult to achieve since it requires the development of heightened awareness of both thoughts and emotions.³ The use of visual images and photographs can allow these personal aspects to be more easily accessed by the learner compared with the use of written text.^{4,5}

The personal experience of the authors has been that some first-year undergraduate medical students do not readily engage in reflection. One of the reasons identified in a study at another medical school was that the approach to reflec-

tion did not match the learning preferences of the students.⁶ The present undergraduate student generation have grown up in a world in which technology has become an integral part of their lives and it has been suggested that there are fundamental differences in the way that they learn, with a preference for creative activities with multimedia, especially visual and audio.⁷ The authors have identified a similar pattern in the use of technology and the learning preferences of first- and second-year undergraduate medical students at their medical school.^{8,9}

The authors recently reviewed the use of new technologies and multimedia to facilitate reflection.¹⁰ One widely used approach to facilitate reflection in children and young persons is digital storytelling.¹¹ This approach uses a variety of electronic multimedia, including video, photographs and sound, to present a reflective narrative without the use of written text. Research with undergraduate students in several disciplines has noted that digital storytelling can effectively engage learners in reflection and the creative aspect of obtaining, selecting and presenting the media as a story also appeared to facilitate their reflective learning by increasing their ability in 'noticing'.^{12,13}

Our hypothesis was that digital storytelling had the potential to offer an innovative approach to engage first-year undergraduate medical students in reflection. The aim of this pilot study was to test our hypothesis.

METHOD

Twelve first-year undergraduate medical students volunteered to use digital storytelling for a reflective learning exercise on a personal and professional development module in October 2007. The aim of this module was to encourage students to reflect on their experience of first meeting a patient. All students visited a patient in their home and were expected to identify their thoughts and feelings of what it was like to communicate with a patient whom they had not met before but also to consider the perceived thoughts and feelings of the patient. All students gave signed informed consent to participate in the pilot study and participate in the focus group interview.

The students were given general advice on how to create their digital story. All students were encouraged to use their own mobile camera phone to collect images as and when they wanted to capture a particular thought or feeling. No patient-identifying photographs were taken and the students were made aware of the ethical aspects of their work. PowerPoint was used by the students to create their digital story since this presentation software was familiar to all the students and was widely available on the institutional computer system. The digital story was created using only the collected mobile phone

photographs and the sequence of photographs provided the overall structure to the narrative. All students presented their individual digital stories to the other study participants and during the presentation they described their reflections with the aid of the photographs.

All of the students agreed to participate in a focus group interview with one of the authors (CW). The interview followed a theme list (based on the hypothesis being tested) but participant-led discussion also occurred as new themes emerged.¹⁴ The interview was audio-taped and the transcript was analysed independently by both authors. A constant comparative method was used by each author in which emerging codes were compared with the transcript to produce a series of coherent themes with illustrative comments.¹⁵ The main themes, with illustrative comments, were identified by joint discussion between both authors.

RESULTS

Three main themes were identified: engagement in the process, facilitation of reflection by the creation of the digital story and facilitation of reflection by the presentation of the digital story.

Students appeared to enthusiastically engage in the process of producing their digital story, especially enjoying the opportunity to be creative. This was in contrast to other aspects of their undergraduate course.

'You can be creative with it. You approach it in a different way than the normal science part of it.' (Student A)

'It was a good difference to writing essays all the time or standing in front of a word presentation. With pictures it's a different way of getting involved.' (Student C)

'Am not saying it wasn't time consuming because it wasn't easy but it was at a nice level where you would sit down and want to do it. And you were quite happy that you'd got a nice presentation out of it.' (Student H)

The creation of the digital story required both the selection of suitable images during the visit and the collation of these images for the PowerPoint presentation. This process appeared to stimulate reflection.

'When I was putting mine together I took photographs from around the area. Rather than just writing a quick essay I actually thought about what I wanted the picture to actually say.' (Student C)

'And when something happens in passing and when you start to choose the pictures you

realise that that actually had an effect on me, that actually meant something – so little things like that which you may not write in essay but when you spend 5 minutes finding the pictures and looking back at what happened it makes you think about it a lot more.’ (Student F)

Presentation of the digital stories to the group was found to be useful. This prompted further reflection, both by the individual on their own presentation but also, viewing the presentations of other students prompted self-reflection.

‘And the second part where you are actually looking for the pictures you are thinking about how you felt exactly and then comparing it to the picture and thinking – that matches, that doesn’t and things like that – so there’s that type of reflection and even while you’re presenting it you’re still reflecting.’ (Student E)

‘It was definitely more interesting. To be honest, when I watch a presentation I don’t actually look at the slides, I just listen to the person and that’s it really, but with pictures I really looked at the picture compared to what they were saying and I think oh yeah that’s supposed to be like empathy that makes sense/and you actually listen a bit more and it’s more entertaining.’ (Student J)

DISCUSSION

We appeared to have effectively engaged a group of first-year undergraduate medical students in reflection by the use of digital storytelling. The process of creating the digital story stimulated the students to carefully consider and reflect upon why they had collected, selected and presented the various photographs. We believe that individual students experienced several ‘disorientating dilemmas’ in the creation and also the presentation of their digital stories. The students had to make a series of choices that were dependent on them reflecting upon the situation that they had experienced and their individual reactions to this experience. These dilemmas are an essential component of transformative reflective learning in which new perspectives are developed and subsequently used to inform future action.²

There are several limitations to this pilot study. The sample size was small and the participants were self-selected first-year undergraduate students. No technical issues with the creation of the digital stories were identified by the students and no students disliked the process. This lack of adverse comments is likely to be related to the self-selection of participants. The preference for using technology in learning is not universal in first-year undergraduate medical students and may be less in older students and postgraduates.¹⁶ The data from the focus group were not

independently analysed by an outside researcher and respondent feedback was not performed but the data were independently analysed by the two authors and discussed until consensus was reached. The impact of digital storytelling on reflective learning was not evaluated since neither levels of reflection nor plans for future action were assessed.

The authors recognise that this is a small pilot study but it has encouraged us to more widely introduce the use of digital storytelling to engage students and facilitate reflection in the undergraduate medical curriculum.^{17,18} There are further important research questions that need to be answered. We suggest further studies with a larger sample of learners in different contexts, including clarification of whether the findings are similar with older undergraduate medical students and for qualified doctors. Comparison of reflective learning between digital storytelling and text-based reflective writing is essential, especially since university education has tended to emphasise the importance of text-based literacy, often regarding other forms, such as multimedia, as being inferior.¹⁹ This research will require assessment of the impact of reflection on reflective learning, especially to identify change in future action.²⁰ The use of multiple media (images, words and music) increases the meaning-making potential of any narrative and further research on the depth of reflective learning by the use of various combinations of multimedia would be helpful to inform future developments.²¹

CONCLUSION

Digital storytelling appeared to effectively engage first-year undergraduate medical students in reflection. All stages of the digital storytelling process, from initial collection and selection of the photographs to the final presentation of the story, appeared to stimulate deeper, and more meaningful, reflection. The authors propose that digital storytelling provides an innovative and useful approach for the development of reflection and reflective learning in medical education. Further research is recommended to inform future teaching and learning practice.

Ethical approval

The research was approved by the Medical Education Research Ethics Committee of the Schools of Medicine and Dentistry at the University of Leeds.

Conflicts of interest

None.

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Further reading and resources

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