

Citation for published version:

Julia Petty, and Richard Treves, 'Development of a digital storytelling resource to support children's nursing students in neonatal care', *Nursing Children and Young People*, Vol. 29 (2): 32-37, March 2017.

DOI:

<https://doi.org/10.7748/ncyp.2017.e857>

Document Version:

This is the Accepted Manuscript version.

The version in the University of Hertfordshire Research Archive may differ from the final published version.

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Learning through the eyes of peers: The co-production of a digital storytelling resource in neonatal care by children's nursing students.

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Introduction

This paper discusses the creation and evaluation of a digital storytelling resource within the field of neonatal care. It was developed from the narratives of six undergraduate children's nursing students who had undergone a practice placement on a neonatal unit. The paper discusses the co-production of the resource and its evaluation in relation to the learning contribution for children's nursing students at the University of Hertfordshire. Findings from the analysis of the evaluation allow best practises to be suggested as to how storytelling based on one's own peer experiences is a valuable and insightful approach to learning about a different speciality such as neonatal care and how the resource could be instrumental in preparing children's nursing students for a practice placement in such a new area.

Background

Within healthcare education, it is well documented that storytelling is particularly appropriate for student learning about patients (Greenhalgh and Hurwitz, 1998; Gidman, 2013). As a learning strategy, storytelling can encourage students to explore others' emotions and experiences; and can heighten their ability to communicate thoughts and feelings (Hardy and Haigh, 2011) and empathise with them. In this paper we explore the recording of student stories by a lecturer which were then used as a teaching resource with other student nurses. By this, stories inform the listener or observer about experience through narrative, a term used interchangeably with story referring to a spoken or written account of connected events (Kim, 2015). Storytelling offers a humanistic approach to learning that enables health professionals to understand individualised experience and this is seen as a more compassionate and valuable strategy within health education to develop person-centred skills in clinical settings (Wright et al, 2014).

Within nursing, there is an emerging body of literature to support the value of storytelling for teaching and learning (Charon, 2005; DasGupta, 2007; Christiansen, 2011) which has particularly emerged from the adult field. Moreover, in recent years the literature has highlighted the emergence and value of online, technology enabled learning (Petty, 2013, 2014) and research has demonstrated the benefits of *digital* storytelling as an increasingly popular platform to present patient narratives (Hardy and Sumner, 2008; Price, 2015). Examples of digital storytelling in the adult field include Healthtalk online (<http://www.healthtalk.org/>) and Patient Voices (<http://patientvoices.org>). Within children's nursing however, limited research has been undertaken into the value of narrative and this is especially true for the neonatal specialty.

Neonatal care is a distinct area of children's nursing and the 'journey' of neonate and family through the neonatal unit is one that offers opportunities for learning for both students or health professionals working in this specialised field. Traditionally, education has focused on technological skills necessary to care for vulnerable neonates and their families. Less attention has been centred on the emotional side of care and an understanding of patient or rather in the context of neonatal care, *parent* experience, which a storytelling approach to teaching and learning can capture. Furthermore, while there is much to learn from parents' experiences about neonatal care (Brodsky et al, 2103; Russell et al, 2014; Dellenmark-Blom & Wigert, 2014; Green et al, 2015), students can learn about emotional care from neonatal staff and their peers. When children's nurses work on a neonatal unit for a placement it can be useful pedagogically to structure their learning with reference to the neonate's journey through the unit. This covers not just the skills that they need to gain but also helps them make sense of the emotions and events that parents and neonates are experiencing. The student's own learning journey therefore has strong links to the neonatal journey from admission to discharge. Studies that have focused on narratives and/or stories from student nurses have found that there is much to be learnt from them, which in turn can inform future teaching and learning practice and educate others (Chesser-Smyth, 2005; Orland-Barak and Wilhelem, 2005; DiVito-Thomas, 2005; Schwartz and Abbott; 2007; Melincavage; 2011; Henderson et al, 2012; Jonsen et al, 2013). Indeed, educators can utilise student experiences to ensure these are used to teach other learners therefore, *co-producing* learning experiences. This concept will be discussed further later.

Story creation

With this above rationale in mind, a teaching and learning intervention was planned and implemented that centred on the creation of stories collected from the narratives of student nurses. This was done by interviewing the students individually and recording the audio of the interview. The audio was then edited and produced as a multimedia resource featuring audio, images and self-assessment questions.

The project builds on the experience of a research study undertaken by the author (Petty, 2016). This study collected narratives from student nurses who had worked in a neonatal unit for a clinical placement, by interviewing them about their experiences of the field from the start of their placement until completion nine to eleven weeks later. The research question for the study was: ‘What can be learnt about the neonatal care experience from the stories of student nurses?’

From the raw narratives recorded in the previous study, stories were created using ‘core story creation’, a process that involves the principles of emplotment based on the work of Emden (1998) and used in subsequent work by Kelly and Howie (2007). In this type of narrative inquiry, the data collected consists of actions, events and happenings in the form of a plot. The subsequent data analysis involves the synthesis and configuration of these three topics to produce or *construct* stories. To place this within a theoretical perspective, the latter is akin to what Bruner (1991) terms ‘*story making*’, in other words, narrative ‘*structuring*’ similar to what Polkinghorne (1995) termed as narrative configuration. Rationale for the use of this strategy centres on its links with the constructivist theoretical approach whereby the reconfiguration of raw narrative leads to a coherent whole, ‘*constructed*’ from individual experience (Bruner, 1991; Polkinghorne, 1995; Kim, 2015). Subsequent narrative analysis of the created stories revealed key, common themes offering rich data that had the potential to be shared with peers as a way to learn about this specialty (Figure 1).

Figure 1

Themes with selected example of sub-themes

- **The nature of neonatal care:** the levels of dependency and the transitions between levels
- **The neonate's experience:** Emotional and physical wellbeing
- **The parent's experience:** Emotional wellbeing, the need for control and empowerment, information and involvement in care
- **The neonatal environment:** Noise and light levels, incubator care, environmental barriers and the importance of developmental care
- **The learning experience:** the emotions and learning needs of students including support from mentors and consistency in communication
- **Topics for learning:** for example, the neonatal transition through the unit ('journey'), understanding and empathising with the parent's experience &/or emotions, the importance of developing relationships with and communicating with parents

In order to communicate this content to students, a digital resource was developed by the co-authors.

Resource development

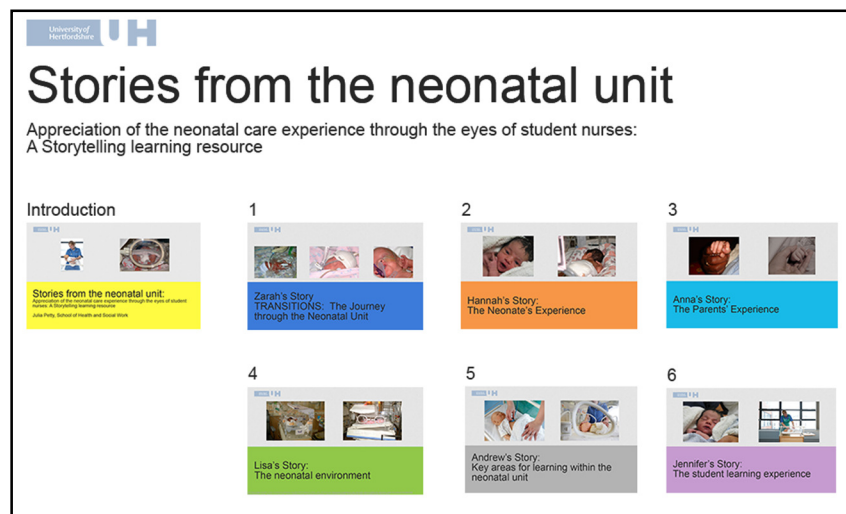
The project comprised various phases, which included story boarding the content and after rewriting and iteration, the full resource was produced. Use of online, multi-media resources is reported as having key benefits to both student engagement and interaction in relation to teaching key nursing subjects as illustrated in previous work (Petty, 2013, 2014). For phase one, in addition to the audio visual presentation of the stories, numerous self-assessment questions were also devised. These were added to pose open, audio questions to the students who were invited to consider a response before being presented with 'these were our thoughts' type feedback from the lecturer. This structure strikes a balance between open learning structures such as problem based learning (e.g. Wood, 2006) and the didactic method which is generally associated with traditional delivery methods. The approach chosen is supported by the criticism of discovery learning by Mayer (2004), who advocates guiding students but also encouraging activity based learning. To achieve this the interviewee narratives were processed

and curated by the subject expert (JP) but the teaching invited students using the resources to explore their own thoughts and feelings by responding to the self-assessment questions.

The resource development also involved sending the transcripts and the stories to the students themselves to verify and comment on, in order to make any necessary changes or additions in line with the principles of co-production. A key part of the development was ensuring 'co-construction' so it is important to consider what this means in the educational context of this paper. Co-production refers to the contribution of service users to the provision of services (Realpe and Wallace, 2010), and, in both the UK and overseas, there is growing interest in applying co-production to services such as social care and health, where the emphasis is concerned with a service to an individual or at an organisational or community level. This is based upon effective information exchange and shared decision making that respond to individual service users' needs (Coulter and Ellins, 2006). Co-production has also been seen as a process to engage consumers in designing and marketing *products* (Batalden et al, 2006). Therefore, in the context of the current paper and the co-production of a teaching resource, it is the student nurses themselves who are the *users*. User involvement is at an individual rather than organisational level and of a product rather than a service. In addition, the other element of co-production was collaboration between the two co-authors, combining both the writing of the actual content and the integration of this content into a digital platform.

After the stories were verified and agreed and any changes made from the participant feedback, the second stage of the resource development involved putting it together as an online package. Six story boards (sketch plans of what will be created) were prepared using PowerPoint. These included: extracts of 1st person text quotations from the participants' narratives; illustrative images; an audio narrative of the participants stories in JP's voice; and self-assessment questions. The resource was created using Captivate, software that allows the blending of the various elements and easy creation of self-assessment questions. The materials were output as HTML5 and published on the web with links provided from Hertfordshire University's VLE: Studynet. The home page of the resource and an example story is shown in Figure 2a & b.

Figure 2: Storytelling resource



a-Home page of the resource

<http://www.health.herts.ac.uk/elearning/petty/neonate/nav/>



b-Example of one story

Resource evaluation

A group of thirty-two children's nursing students have undergone an evaluation of the resource to appraise the perceived effectiveness and value of digital storytelling for learning. The evaluation was undertaken as a focus group session using a brief questionnaire along with a Likert, closed question electronic voting system (EVS) questionnaire consisting of the following questions:

- Q1-To what extent do you think listening to these stories may be useful for learning?

- Q2-To what extent do you think listening to these stories may be useful in preparing you for a practice placement in the area?
- Q3-To what extent do you think this digital storytelling resource could enhance or support other learning (e.g. from practice or in the classroom)?

The Likert responses were:

- A. Very useful
- B. Of some use
- C. Do not know
- D. Limited use
- E. Of no use at all

The students were also asked to add additional open answer comments in text form to qualify their response. Two other open questions asked them about their opinions in relation to the field of children's nursing and the value of storytelling from one's own peers.

- Q4-What aspects of caring for children do you think you may learn from this storytelling approach?
- Q5-What can you learn from your own peers' stories?

Findings

Overall, the evaluation results showed a positive response to the resource with students expressing many benefits along with some constructive points for development. Question 1-3 Likert scale are depicted graphically in Figures 3a, b and c. A selection of open responses and comments for questions 1-5 can be seen in Figure 4.

Figures 3a, b and c

Figure 3a: Q1-To what extent do you think listening to these stories may be useful for learning?

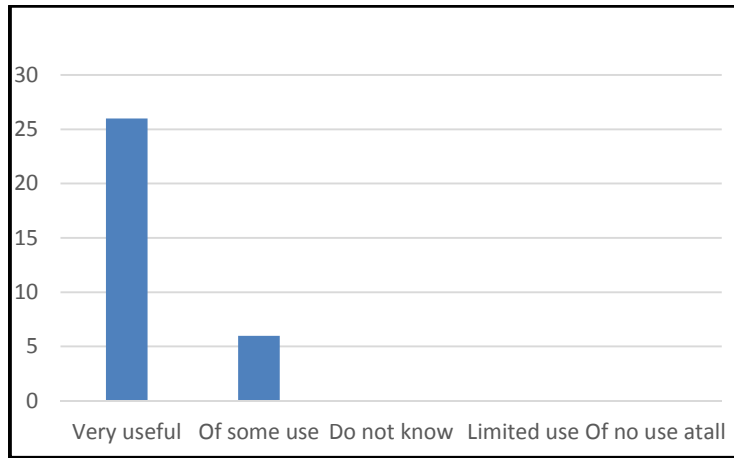


Figure 3b: Q2-To what extent do you think listening to these stories may be useful in preparing you for a practice placement in the area?

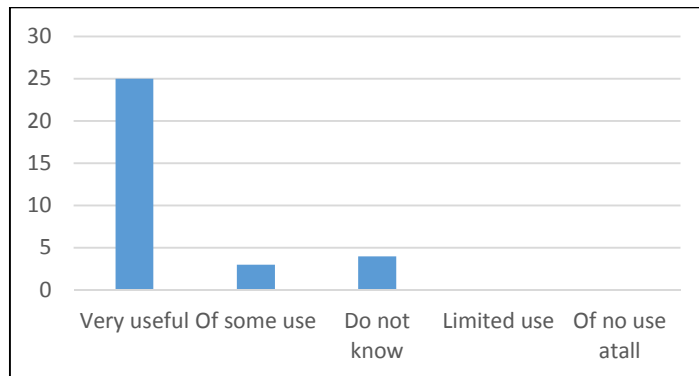


Figure 3c: Q3-To what extent do you think this digital storytelling resource could enhance or support other learning (e.g. from practice or in the classroom)?

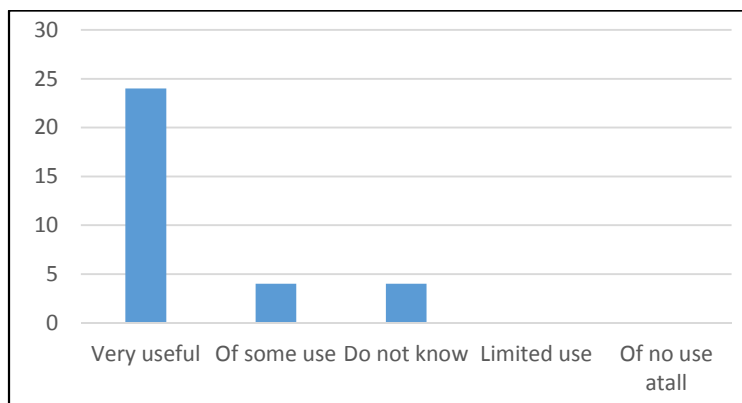


Figure 4: Selected open responses

1-To what extent do you think listening to these stories may be useful for learning?"

"Learning from other's experiences is more memorable"
"To gain a true and real life perspective into the neonate's and families experiences"

2-To what extent do you think listening to these stories may be useful in preparing you for a practice placement in the area?

"Having this type and the right information can prepare you for a new area"
"Giving examples of things to expect allows you to feel at ease when entering a new environment"

3-To what extent do you think this digital storytelling resource could enhance or support other learning (e.g. from practice or in the classroom)?

"It is engaging to listen to personal experiences" ... "easy to use and navigate, points for reflection - these are really useful to get you thinking"
"Blended learning is brilliant for helping to re-inforce learning in class and practice"
"It would be useful for some but not others- we all learn in different ways"

4-What aspects of caring for children do you think you may learn from this storytelling approach?

"The emotional aspects of caring such as forming a professional relationship / therapeutic relationship with families"
"Being able to empathise with parents and families"
"Valuing feelings and perspectives of neonate and families; real life understanding"

5-What can you learn from your own peers' stories?

"It gives you an idea / insight of what to expect in practise looking at the different perspectives of student nurses"
"Only some experiences are transferable- not everyone's experiences are going to be similar"
"It gives another students point of view which you can relate to more"
"Listening to other students may make you more comfortable going into the unit."

Implications for Practice

In summary, the findings of this project illustrated the potential benefits of storytelling as a novel approach to learning for trainee nurses, particularly helping them learn about the emotions involved. In addition, the technique appeared to give some of the benefits of peer based learning without the need to manage group work (Boud et al, 2014; Ramm et al, 2015). Most students voiced that learning from one's own peers in this context was useful although some did comment that this depends on the individual student. Co-producing of the resource with students themselves was also found to be of value for those who participated in the original stories who found that their involvement facilitated reflection.

Students also voiced the importance of preparation for practice in a new and specialised area of nursing and the role that such a resource could play in this preparation. Being prepared for practice is an issue that commonly arises in the author's own place of work with many students raising the need to be adequately primed for different, unfamiliar clinical areas. Having a resource that can be viewed prior to a placement speciality could be used to raise familiarity and dispel some of the anxiety associated with going to a new and unknown area of practice.

Turning to consider the technical platform, the feedback from the students was that they thought the technique could be reused in other nursing situations. Since the development was conservative in approach, with a technical sophistication below much of the multimedia most students of this age group experience on a daily basis on social media, this is considered a strong endorsement of the power of audio narrative. Student responses often suggested that the resource needed to be integrated with other teaching techniques e.g. both digital and text in combination. Other work has acknowledged that digital tools should not replace traditional methods but used alongside each other to enrich and optimise learning (Ileya et al, 2011). Expanding on this concept, a number of approaches are being considered for the future development of the resource. These are: integrating the materials into a flipped learning delivery which has been shown to have benefits (MacDonald and Smith, 2013; Bergmann and Sams, 2014); collecting student responses to the open questions for collation and discussion with their course lecturer and integrating learning analytics into the resource. The flipped learning would see students using the resource as self-study prior to coming to class to discuss, with an emphasis on considering the emotions involved in neonatal practice. Linked to this

flipped learning idea, collecting the open questions would be done by embedding some sort of electronic survey into the resource. The open questions could then be studied by the lecturer and used as a basis for further class discussion. The last idea is to integrate learning analytics within the resource. This will also give an opportunity to discuss the learning with groups of, or individual, students. It would also allow the authoring team to examine the bulk use of the material in order to improve it, e.g. maybe remove a section that students did not use much.

A point that also requires consideration is the actual tool itself. Feedback from some participants as seen in Figure 4 raised important issues. A few participants did not favour digital learning and these may have been individuals who are more comfortable and familiar with traditional, text based formats or do not have a learning style suited to digital learning. The content development approach could be improved in terms of ease of use and sustainability: Captivate is considered unsuitable for non-technical staff to use, this creates an issue should the learning technologist leave his/her post for future maintenance of the materials because they may become difficult to edit. A preferable approach may be to use Office Mix: an 'add-on' to PowerPoint that is highly usable and therefore appropriate for academic staff to use. This software was not available at the time of the development of the resource.

The findings of this preliminary evaluation pave the way for future work. Ongoing evaluation following further dissemination to more student groups is vital to gain wider opinion and gauge the need to make any adaptations to the resource, if applicable. Evaluation will continue at a later date once the students have had more time to use the resource in full. Dissemination of the resource will also take place to other, future groups of children's nursing student as part of the pre-registration curriculum. In addition, in clinical practice the resource is being used with new staff as preparation for working in the neonatal unit. Finally, the use of digital storytelling in this area of practice could also be applied to other specialisms of children's nursing opening up discussions around further work in digital storytelling development.

Conclusion

In this paper a teaching intervention has been described in which children's nurse students' stories about their experiences were converted into an electronic, audio resource. The feedback both from students using the resource and those involved in co-production was

overwhelmingly positive. Digital storytelling has not been widely used as a teaching strategy with students in the areas of children's or neonatal nursing. However, both digital learning and storytelling as teaching and learning strategies are emerging as useful and increasingly popular in other fields. In addition to the broad success of the project, important messages from the feedback appeared to be that: the resource was especially successful at helping students prepare for the emotions involved in completing a placement in a neonatal unit and that the media used appeared to present the material that allowed students to relate to their peers and learn through them and their experiences. Further research is now planned applying the above principles discussed in the present project. This will explore the narratives from parents of neonates admitted to the neonatal unit at birth and how these can be employed for teaching and learning in neonatal care for both children's nursing students and other health professionals working in this specialised field.

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