Interprofessional learning and virtual communities: An opportunity for the future

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As various agencies increasingly advocate interprofessional care (IPC), it is paramount that the educational implications of this approach are considered. Interprofessional learning (IPL) is necessary for IPC and this paper argues that an emerging educational model, narrative-based virtual communities (VCs), meets this goal. We therefore argue for the fusion of narrative pedagogy with the VC approach to further the IPL agenda. Using stories to teach is not new. Technological innovations now make the possibility of using narrative, a way to enable students to experience greater reality in complex situations. Recently, two multimedia VCs have been developed. Here, we review the use of "The Neighborhood" and "Stilwell", as IPL tools. Early evaluation of these communities has been very positive and they offer a unique and innovative approach to IPL in ways that immerse learners from many professions into the context of the lives of individuals requiring health and social care, and the people who provide that service. Thus, it is possible to more fully realize and teach about collaboration and partnerships among professionals and patients.

INTRODUCTION

Health care education is at a pivotal point as the demand for knowledge workers, creative thinkers and problem solvers becomes more acute. The public is expecting use of evidence to meet health care needs and demanding accountability from health care providers. Employers are requiring knowledge-ready workers to deal with the increasingly complex health issues of today.

In this landscape, the push toward fully utilizing all health care providers has given rise to an era where the creation of interprofessional (IP) approaches to care has been at the forefront. Given the complexity of knowledge acquisition and application, complicated social issues and a focus on health, none of the members of the team can claim omniscience. Strategies to manage care are as important as knowledge of disease. Given this new health care environment, education strategies that were effective in the past must be re-examined to prepare health care workers of the future.

Major changes have been urged by Sullivan and Rosin (2008) and Benner, Sutphen, Leonard, and Day (2010). Both publications call for educators to adapt their teaching to improve how new practitioners acquire knowledge, skill and judgment across a range of subjects to provide evidence-based safe care. These educators call for a shift in the focus of education away from the biological sciences and disease. Instead, Benner et al. (2010, p. 89) and others recommend more focus on

. an emphasis on teaching for a sense of salience (recognition of priorities)-situated cognition (consideration of the impact of context) and action in particular clinical situations;
. integrative teaching in all settings;
. an emphasis on clinical reasoning and multiple ways of thinking, including critical thinking.

These ideas are shared by those advocating interprofessional learning (IPL). Integration of theory and practice, recognition of other professionals' knowledge and skills, and the need for learners to progress from knowledge acquisition to deep understanding of teamwork are all hallmarks of effective learning. While the provision of interprofessional care (IPC) rests upon the foundations of IPL, the provision of IPL presents many challenges. In this paper, we will briefly review the factors which promote IPL and show how narrative pedagogy, combined with a virtual community (VC) model, can provide effective solutions to these educational challenges.

INTERPROFESSIONAL LEARNING

The interest in IPC has led to the development of IPL as an increasingly structured approach. Recent international publications seek to promote IPL and collaboration (CIHC, 2010; WHO, 2010). Consensus has developed on a definition of IPL: "Occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care" (CAIPE, 2002). IPL strategies are increasingly research based as an emerging body of evidence now leads educators to firm theoretical foundations for practice.

Several key factors have been found to promote IPL most effectively. Charles et al. (2010) emphasize the role of professional socialization and show how this negatively impacts communication across professions. In their model, transformational learning and the idea that attitudes and beliefs will be changed by challenges to existing biases are core. Yet, merely exposing students to new concepts is insufficient. Continued exposure to, and subsequent immersion in, IP thinking, using an incremental approach to change, is required if new ways of thinking are to be adopted. To complement this work, IP competencies have been developed in Canada and these include IP communication, patient/client/family/community-centered care, role clarification, team functioning, collaborative leadership and IP conflict resolution (CIHC, 2010). Using this framework and the six IPL competency domains, a guide for curriculum development has been produced (HealthForceOntario, 2009). In this document, educational strategies are linked to each level within the framework. For example, clinical placements and team case conferences are associated with the mastery of IP competencies in care. Throughout these activities, the theme of using simulation to enhance IPL is evident as case studies, standardized patients, role play and simulation laboratory work are all listed. The next phase of developing IPL is to evaluate their utility and to test the value of simulation as a teaching tool for IPL.

SIMULATION

Simulation is not a new strategy to teach safety and task training (Issenberg, Mcgaghie, Petrusa, Gordon, & Scales, 2005). It has been used extensively in the airline industry to promote the management of emergency situations as well as routine procedures such as takeoff and landing. This work also demonstrated the effectiveness of simulation in a developing teamwork.

The patient safety movement has contributed to the recognition of simulation in health care education as an essential approach to learning. Early simulation focused on task training (e.g. heads for intubation). More recently, a broader understanding of simulation has encompassed task trainers, full body simulators (mannequins), table top exercises, team cases with or without use of simulators and simulated (standardized) patients (Cameron et al., 2009; Campbell, Themessl-Huber, Mole, & Scarlett, 2007; Campion-Smith et al., 2011; Kenaszchuk, MacMillan, van Soeren, & Reeves, 2011; Schmitz, Chipman, Luxenberg, & Beilman, 2008). These have been found to be effective tools to promote IPL in short-term evaluations.

Limitations with simulation

All of these strategies are useful but have limitations. Practising skills constitutes a key rationale for simulation together with the opportunity for students' discussion with teachers and reflection. Simulation allows safe practice of difficult skills without harm to anyone involved. One limitation is the fidelity of the situation. Making simulation mimic reality increases learning, creating realistic scenarios is therefore highly desirable. Some simulations are expensive: use of simulated (standardized) patients requires actors and usually one-to-one facilitation. Full body mannequins require laboratory space plus technical and instructor support. Another consideration is the one dimensional (1D), disconnected nature of these strategies. Typically, they are focused on a single incident or isolated problem. There is no opportunity to see the patient/family as a complex social entity. This is a major deficiency as individuals' health problems are usually part of a complex social narrative.

Recently, technology and gaming have led to educators exploring the use of virtual worlds for learning. These new simulation strategies include sites such as Second Life. In these environments avatars are used to mimic reality. The question of whether they can play a role in IPL is only beginning to be considered. In view of these limitations, we propose a new approach featuring virtual simulation fused with narrative pedagogy and will discuss in the next section.

VCs as simulations

AVC has been defined by Giddens, Fogg, and Carlsen-Sabelli (2010a) as, " . . . an online teaching application featuring a fictional community with multiple intersecting and unfolding character stories". It therefore, acts as a virtual simulation of a community as it tells the story of a fictional group of people living closely together. Of fundamental importance is that this is a real-world environment with characters portrayed by actors and the story narrated by means of video, audio, images and written materials. The location uses real places within the virtual environment. The community is housed on an Internet platform and utilizes a multimedia approach to create a high fidelity, realistic portrayal of a diverse but representative group of residents. The individual stories of the characters are linked in a dynamic way with their environment. This platform allows learners to explore topics such as family relationships, social determinants of health and public health issues while creating a compelling narrative about individuals and their problems. In this way, a VC produces a realistic practicum

within which students can work together to tackle complex, real-world problems within and across professional groups.

The term VC can be confused with "virtual world". A virtual world is an "… interactive simulated environment that allows multiple users to participate simultaneously via an online interface" (Papp, 2010). In this shared virtual space, numerous people can simultaneously access a 2D or 3D representation of the real world on a computer in real time. Virtual worlds are computer gaming environments populated by avatars not real humans. Familiar examples are the computer games referred to earlier such as Second Life (Sanchez, 2009).

Computer gaming environments have attracted a great deal of educational interest (Devisch, 2008). However, it is doubtful that avatars and gaming will meet the needs of IPL. Devisch (2008) rejected the idea as games such as Second Life are unrealistic and fail to capture the true complexity of how communities function. This criticism goes to the heart of the matter. From a health and social care perspective, these games are flawed by their failure to meet the requirement of fidelity, as avatars are no substitute for human actors. A great deal of communication between humans is transient and non-verbal in its nature; avatars cannot capture the subtle changes of facial expression or body posture which are crucial clues in understanding our fellow humans. Human actors capture these behaviors on screen. Health care workers spend a lot of time humanizing health care for patients; it is therefore self-contradictory to advocate a dehumanized computer game as a means of promoting IPL. For these reasons, the virtual worlds approach is rejected in favor of the VC and its emphasis on realism. However, to be an effective educational tool, the VC needs a pedagogical stance and this has been provided by Diekelmann (2001), narrative pedagogy.

NARRATIVE PEDAGOGY

In non-literate societies, narrative (fables and legends) was essential to teach the next generation about the accumulated knowledge and beliefs of a society. Over time, societies became literate and have recently invented electronic media, which also became narrative tools (film, video, radio, TV, Internet). Today narrative is everywhere and it still defines our culture and who we are. Given the importance of narrative to society, Hazel (2008) rightly questions how educators can ignore narrative.

Fortunately, narrative in education has not been ignored. Diekelmann (2001) developed the concept of narrative pedagogy, proposing that teaching should focus on interpreting the experiences of people and exploring their shared meanings and understandings. Narrative pedagogy is therefore concerned with understanding the lived experiences of participants (Diekelmann, 2003) and has been represented as a product of the convergence of feminist, post modern and critical pedagogies (Ironside, 2006). Story telling has a unique way of revealing insights into the reality of others (Kawashima, 2005), which enables teachers to prepare students for interactions with clients and other professionals in difficult and stressful situations.

Health and social care professionals often encounter uncertain and ambiguous situations. An ability to consider a wide range of perspectives and options in these situations is essential (Gazarian, 2010; Schekel & Ironside, 2006). For Diekelmann (2003) this is the essence of narrative pedagogy. It allows students to work with real stories to arrive at a shared understanding of their meaning for individuals and what the experiences felt like for the participants. This leads to challenging conventional wisdom, exposing assumptions and analyzing the multiple perspectives that are at play in any story.

Narrative pedagogy therefore gives students a new toolkit to use alongside the more familiar conventional pedagogy which teaches facts, knowledge and competencies. It therefore is congruent with the identified need to rebalance the curriculum with more emphasis on the process of using knowledge and skills which was identified by Benner et al. (2010). That process is heavily context dependent as practitioners have to take into account a whole range of social and environmental factors in their decision-making and relationship building.

But narrative pedagogy also needs a narrative, which is not the same as a story. In everyday usage these words are synonymous; however, there is a difference. A story is a sequence of events which is now being recounted. The narrative is the way the story is told (Woodhouse, 2007) and so the context is crucial in narrative. By manipulating the context, we can alter the narrative and hence the way the story is perceived and understood. Context therefore has a potentially decisive role in the way the story is understood and the meanings that people attach to it. For example, Stilwell features video of a mother ringing for an ambulance, her 2-year old is lying at the bottom of stairs badly injured, she says the child fell downstairs. The context as revealed by multiple media in Stilwell is of a single parent, unable to cope, deeply in debt and drinking heavily, losing control. That changes

the understanding of the story, a different understanding now features the strong possibility of child neglect or even abuse and parental violence. Thus, the artificiality of a computer gaming environment is rejected in favor of a real world, high fidelity, multimedia representation.

COMBINING NARRATIVE PEDAGOGY AND VC

We now have the two elements necessary for constructing this new approach to IPL, a VC to supply the narrative and context which is then engaged by narrative pedagogy to create a learning environment ideal for IPL. A multimedia VC creates a realistic virtual simulation of a typical community and the problems of its individual residents. This is available online to inform either face-to-face or distance learning. Critical to the success of this tool is the capacity of the educator to utilize the principles of narrative pedagogy to facilitate learning.

Reflection reminds us that understanding multiple points of view, crucial for IPL, lies at the heart of narrative pedagogy. The VC can therefore be used to understand the perspectives of the key actors in the story, especially the client, and also the different professions who may make unintended or unrecognized contributions to the person's "story."

Creating VCs

Giddens (2007) was the first person to bring together narrative and a VC when she created "The Neighborhood". Giddens achieved this by creating a typical neighborhood of a fictional American town and highlighted the lives of 11 families from diverse backgrounds and the personnel who cared for them. Critical incident videos reveal key moments in the lives of the characters. This is supported by a narrative written as of a diary. Copies of the local newspaper, case notes and a statistical profile of "The Neighborhood" created a realistic context for the stories.

Giddens' approach linked narrative pedagogy, case studies and virtual simulation to create a multimedia VC. It linked concepts and principles into the real world of everyday health care, aiming to bridge the "theory-practice" gap. The Neighborhood's novel approach and narrative pedagogy foundations immediately made it suitable for IPL, especially as differing points of view are an integral part of the learning experience.

At the same time as Giddens was launching "The Neighborhood" in the USA, a similar development took place in the UK, called "Stilwell" (Giddens & Walsh, 2010). Stilwell was developed out of recognition that case studies were isolated from their context and lacked dynamic qualities; they therefore needed linking with each other and their context. Stilwell and The Neighborhood also have unique features reflecting the differing health care systems of their authors' countries.

Like The Neighborhood, Stilwell is a multimedia VC underpinned by narrative pedagogy. It relates the story of the lives of residents of three very different roads in Stilwell, a district of the town of Brigstow (Walsh, 2011). Both are real places but the names are fictional. Like The Neighborhood, the front page of the local paper gives contextual depth and currency to events.

Unlike The Neighborhood, which began life as a tool for nursing education, Stilwell was created as an IPL environment and is used not only by the students of health and social care but also by the criminal justice system (e.g. police). Challenging and emotionally charged areas requiring IP work such as child sex abuse and child protection, drug misuse, self harm and prostitution are covered, as well as more conventional health problems. The Neighborhood and Stilwell can take students into areas where they would normally not have access but may suddenly find themselves, when qualified, with no prior experience or guidance. Stilwell has an editorial policy of being explicit and realistic in order to prepare students for the unpleasant reality of practice (Walsh & Crumbie, 2011). This echoes the use by Smith and Carter (2010) of virtual simulation in police training to ensure the safety of students.

The following resources are used in Stilwell to relate the stories:
. Medical and social histories of residents.
. Maps, descriptions and statistical profiles.
. Professionally produced and acted critical incident videos involving residents.
. Podcasts of audio diaries by characters/care staff.
. Blogs kept by residents and staff.
. Front page of the local newspaper.

The Stilwell VC has been replicated in Canada (see: www.stilwellontario.ca). Once again there is a fictional VC based on a real location with the same narrative devices that are used in Stilwell. One of the key purposes of Stilwell, Ontario, was improving IPC between the critical care and emergency services.

Evaluation of both The Neighborhood and Stilwell has been very encouraging with high levels of students' satisfaction, utilization and engagement. Key themes to emerge include the realism of the content, effectiveness in preparing students for challenging situations and the ability of the VCs to portray alternative perspectives (Giddens et al., 2010a; Giddens, Shuster, & Roehrig, 2010b; Walsh & Crumbie, 2011). The fusion of narrative pedagogy and simulation within the VC concept have been demonstrated as feasible with promising evaluations.

DISCUSSION

The use of VC addresses many of the elements considered important for the development of IPL (e.g. Reeves, Goldman, & Oandasan, 2007). Within the VC, characters and situations demonstrate real events creating higher fidelity simulations. The situations are relevant to the learners' practice, the issues focus on problems that allow teams to discuss solutions and the online platform allows for multiple students to access the information synchronously and asynchronously.

Evaluation of The Neighborhood and Stilwell shows that students find it a realistic environment (Giddens et al 2010a; Giddens Shuster and Roehrig 2010b; Walsh & Crumbie, 2011). Students are unable to be exposed to high risk, violent or emotionally charged situations as part of their education for reasons of safety and/or opportunity. It provides an opportunity to discuss options to manage the emotions and practicalities of these events. When used in the IPL context, students learn skills and see value and opportunity created by working with a team.

The creation of realistic and complex stories within the VC allows students to see the relevance of IPC. Here, the educator using the VC must be clear about what aspects of the entire site are needed for the specific outcomes desired. Early evaluation of Stilwell, UK, highlighted the need to link the content to specific online tasks and course assessments. There is a risk, with so much detail on a site, that students skip material they do not consider immediately relevant to their learning. This is true for any learning management system and indicates the need for a VC story to be carefully targeted on the desired learning outcomes and students' assignments, to ensure students see its relevance.

The VC is congruent with another key requirement of IPL, which is a focus on specific issues, creating situational relevance for team learning (Oandasan & Reeves, 2005; Reeves et al., 2007). The VC concept arose from problem-based learning (PBL) and from the criticism that PBL becomes too pre-occupied with the problem at the expense of the person (Smith et al., 2007). In the VC, students work on complex patient problems which are now set in a realistic social and interpersonal context, rather than remaining as isolated problems, thus extending and enriching the concept of PBL.

There is little definitive evidence as to whether IPL is best situated, pre-licensure or post-licensure (Oandasan & Reeves, 2005; Reeves et al., 2007). The use of a VC is equally suitable in either case. Because the VC is a platform upon which learners explore real-life issues, it is not directed to one level of learner, but rather can be adapted for pre- and postlicensure learners. The complexity of the events within the environment is such that multiple threads or approaches can arise from the situations. For example, if the character is experiencing a loss, the learners could explore support systems, discuss ways to talking to the person or what different team members contribute. This can all be achieved using a single multi-dimensional scene.

Logistical and organizational problems are frequently highlighted (Reeves et al., 2007) as IPL can generate large cohorts (Hammick, Freeth, Koppel, Reeves, & Barr, 2007) causing problems for classrooms and the costs of producing materials. There is, however, a solution which is to introduce online learning (Luke et al., 2009). The development of trust, respect and co-operative attitudes in online communities is necessary, and a well-structured VC is capable of achieving these goals as students work together on a task asynchronously, utilizing the resources that are readily available. Narrative pedagogy focuses on seeing alternative points of view and this characteristic can be highlighted by the skilful use of blogs and podcasts in which different professional characters write about the same incident or record their feelings as an audio file. Work such as this needs skilful facilitation to avoid conflict and stereotypes re-emerging in an online group. However, there is evidence in our

evaluation suggesting that students finding the content in the VC facilitate seeing things from other professional perspectives (Walsh & Crumbie, 2011).

Accessible clinical practice is another issue addressed by VC. Authors such as Richardson et al. (2010) strongly advocate the practice of IPL in the community, giving students "hands-on" experiential real-world learning of IP care. This is a logical aspect of IPL; however, there are multiple practical problems in obtaining and supervising such placements. A VC offers a way of relieving pressure on IPL placements as students can go a long way toward meeting their experiential learning objectives within a realistic VC.

Facilitation of PBL is an important skill that teachers have to learn (Serjeant, Hill, & Breau, 2010). This is particularly important given the constructivist nature of IPL. In other words, students learn by interacting with each other and building their own understanding. The multiple perspectives offered by a narrative pedagogy-based VC enhance this process but additionally, the VC offers an excellent learning opportunity for inexperienced teachers. The VC is an excellent staff development medium as inexperienced teachers can work their way through stories with the assistance of experienced colleagues, in order to gain the necessary skills in IPL facilitation.

Realism comes at a price and Luke et al. (2009) have referred to the costs of IPL, especially in the current economic climate. The creation of realistic resources within the VC is expensive but they constitute re-usable learning objects used for a range of different purposes at no extra cost. Once created, a VC may be used by multiple institutions, greatly reducing the cost.

CONCLUDING COMMENTS

IPC is increasingly being recognized as essential in today's changing environment and therefore IPL has moved up the educational agenda in importance. As a result of a great deal of innovative work and evaluation of IPL, we are now in a position to identify key factors that promote success in IPL and also some of the main problems faced in IPL. Alongside the IPL movement, we have identified a radical and new approach to learning, the fusion of VCs with narrative pedagogy. The old tradition of story telling is thus reinvigorated to produce reflective, situated learning. Initial evaluations of this model are very positive, and discussion of the needs of IPL alongside what VCs have to offer suggests that they can make a major contribution to the IPL agenda. The model we have advocated in this paper, combining VCs with narrative pedagogy, can bring about a step change in the effectiveness of IPL and as a result, IPC. It also offers the exciting possibility of increasing service user participation in IPL and hence in care delivery. There are many opportunities for research into the most effective ways of developing this new model, especially if centers of excellence and innovation work collaboratively in a networked approach that mirrors the networked nature of the online environment itself.