

Sustaining relationships in an interdisciplinary team-based project that transforms curriculum: the Human Patient Simulation Project @ SFSU

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Abstract

Getting appointed to a college based curriculum development project depends on how close or “embedded” the librarian is to the department. The medical librarian literature has come to define the concept of embedded librarianship as placing the librarian within the teaching faculty domain, teaching faculty’s “natural habitat”. This placement results in closer coordination and collaboration with subject based teaching faculty. The roles and responsibilities of key personnel of a team-based project that changes established curricula will be discussed, as well as how each role adds to the overall success of the project. Educational assets available to students and faculty will be discussed, along with how to align course outcomes with professional standards, while the logistics of curriculum design and its implications will be illustrated, all through the lens of the human patient simulation project. Critical processes for creating a successful project include planning, design, implementation, and evaluation.

Institutional and Programmatic Background

The 2012 description of San Francisco State University (SFSU) is much like it appears in Verhey (1999): an urban, four year general education university with a high level of student and faculty diversity. A major difference is the growth in student enrollment, from 14,933 FTE in 1999 to 29,541 FTE in 2012. The SFSU School of Nursing (SoN) offers a baccalaureate and master’s to approximately 450 undergraduate and graduate students. In late 2008 a committee was formed within the SoN to plan and integrate informatics and human patient simulation (HPS) into the nursing curriculum.

Informatics in nursing literature has been defined as the effective use of technology to access databases and the health literature to increase patient safety and health outcomes (Benner, Sutphen, Leonard, Day, & Shulman, 2010). A HPS system is made up of a mannequin, a mock healthcare environment and computer hardware and software. Components of the software include an assortment of virtual patients with pre-programmed scenarios. A scenario consists of pre-planned, nursing care instructional session. The outcome of this type of nursing instruction is experiential learning where nursing students can experience real-world, problem-based healthcare situations in a safe, non-threatening environment (Murphy, Hartigan, Walshe, Flynn, & O’Brien, 2011).

In 2003 the Institute of Medicine (IOM) published *Health professions education : A bridge to quality* (2003), where:

All health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches and informatics. (IOM, 2003, p.3)

Building off the IOM’s 2003 recommendations, the Robert Wood Johnson Foundation supported a group of nursing professionals that developed nursing competencies embedded in Quality, Safety and Education for Nurses (QSEN) in 2007 <<http://www.qsen.org/overview.php>>. A final QSEN report in 2009 specifically addressed incorporating the QSEN competencies into nursing education. The American Association of Colleges of Nursing (AACN), a nursing accreditation organization, built into the bachelors and masters in nursing accreditation essentials several recommendations from the IOM and QSEN. Stated within the accreditation essentials is the concept of scholarship and the use of evidence-based practice <<http://www.aacn.nche.edu/education-resources/essential-series>>. Evidence-based practice is grounded in the competencies of information literacy (IL) (IOM, 2003). In the library literature, accreditation works from the top down to include IL in academic programs (Bangert, 2007; McGuinness, 2007; Thompson, 2007).

Committee background

The Nursing Informatics and Simulation Committee (NISC) was instituted in late 2008 by the SoN Director to write grants, equip simulated healthcare environments and integrate informatics and simulation into the nursing curriculum. NISC was made up of tenure track and non-tenure track individuals from the SoN, a librarian, a faculty consultant and a health technologist. The formation of an interdisciplinary team was stipulated in part by the findings of the QSEN report, as well as the IOM 2003 recommendations. It was recognized that the nursing profession required participation and input from disciplines other than nursing to bring about improvements to patient safety and to increase health outcomes.

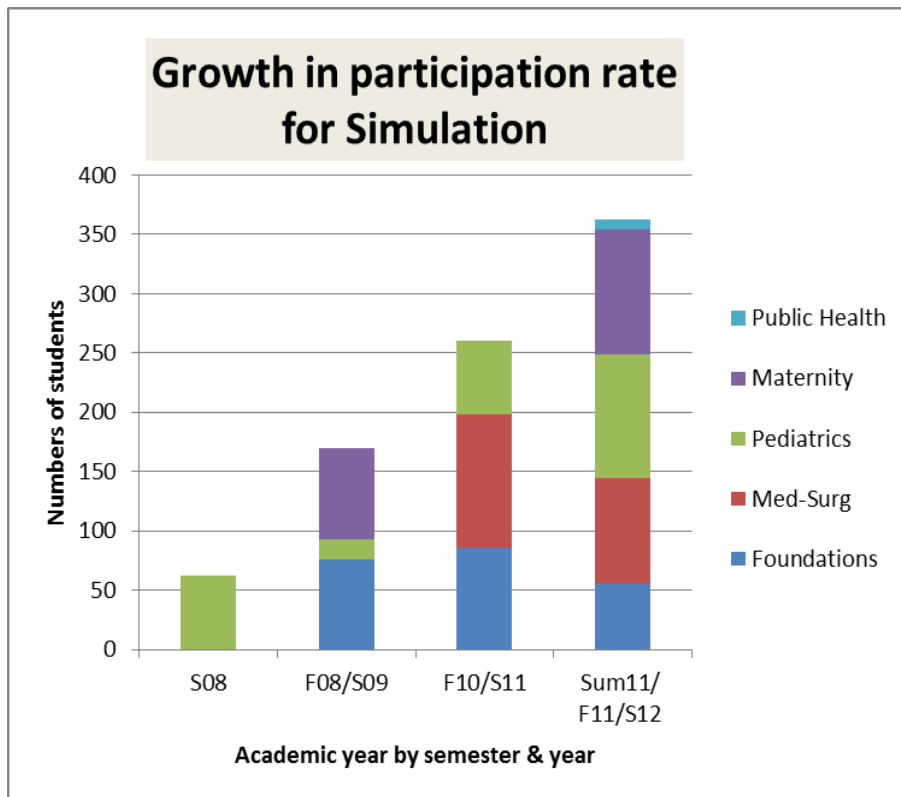


Figure 1. Growth in participation rate for simulation in the School of nursing from 2008 to 2012.

From late 2008 through 2012 the NISC was able to demonstrate solid accomplishments towards our goals (Figure 1). We grew the simulation program from a little over 50 students participating in pediatrics simulations in Spring 2008 to over 350 students in five different subject areas of simulation by spring of 2012. Through this clinical, simulated learning experience, nursing students had the ability to perform the full suite of nursing care processes using appropriate knowledge, technical skills, and critical thinking. We wrote two large grants, equipping four different simulation complexes from beds to syringes to mannequins. Aside from buying large quantities of materials to equip simulated clinical environments, the NISC also developed and integrated informatics and simulation into the nursing curriculum.

Contextual Learning

Contextual teaching and learning strives to give students an authentic experience where the subject matter relates to real-world situations. In nursing education, clinical settings were the only means of contextual learning: nursing students caring for patients in real-world healthcare settings. In today's healthcare climate, clinical settings are limited in number and quality for student learning (Benner, et al., 2010). HPS simulation can augment clinical learning to more fully educate nursing students. Problem-based learning, a technique of contextual teaching, was used to frame IL instruction for an authentic learning experience targeting the increased expectations of the profession for evidence-based nursing practice and informatics.

Simulation

Simulation in the healthcare setting uses experiential learning and problem-based learning to close the gap between what we want the students to be able to do and what they do (Murphy et al., 2011; Cheney, 2004). The student learning goals of teaching faculty and the simulation group did not necessarily correspond; hence teaching faculty had to be persuaded of the value of simulation. The student learning goals of the didactic teaching faculty were concerned with content not process, while the goals of the clinical faculty were, in many clinical settings, to only illustrate nursing process. The goal of NISC was to have nursing students experience the nursing process and to think critically about integrating knowledge and practice for safe and effective healthcare (Murphy et al., 2011).

Individuals within NISC received training in the methodologies of preparing scenarios, student assessment, and training with the computer hardware and software. NISC explored commercial sources for the physical outlays of the mock-hospital settings; developed grading rubrics; explored the literature of simulation, teaching and learning; and attended conferences to learn effective processes for pre- and post-briefing sessions for students that utilized reflective practices. Individuals within NISC developed and delivered HPS simulations to student and community groups, as well as held open houses for the institution and the healthcare community.

IL – A Component of Informatics

As noted in the introduction, outside forces in the nursing profession were exerting forces on nursing education to incorporate evidence-based practice. Leveraging this change, the health sciences librarian approached the SoN in 2008 on several fronts: establishing office hours in a space within the SoN, integrating IL assignments in the nursing foundations class, membership on SoN committees, and one-on-one faculty consultations. Increasing visibility was seen as increasing the library's commitment to SoN. As a consequence of this increased visibility, several changes occurred that benefited the nursing students.

In 2007, nursing faculty would request a standalone library session for any nursing class when the teaching faculty deemed it necessary. In 2008, SoN faculty and the health sciences librarian incorporated problem-based learning in a set of structured library assignments to support the major writing assignment of the first semester nursing class. Nursing students received additional training in higher-order search, retrieval and evaluation in the undergraduate nursing research class. Graduate nursing students also received additional library training based on research assignments. Outreach to SoN, office hours within the confines of the physical space of the SoN and the outside codification of the need to incorporate evidence-based practice into nursing education converged to increase student and faculty awareness and use of library resources to support the curriculum.

Table 1.SFX statistics for the top 10 databases as counted by 'clickthrough requests' for the years 2006-2011

Year SFX Rank	2006		2007		2008		2009		2010		2011	
	Source	Requests	Source	Requests	Source	Requests	Source	Requests	Source	Requests	Source	Requests
1	Academic Search Premier	26760	Academic Search Premier	23350	Academic Search Premier	43533	Academic Search Premier	58153	Academic Search Premier	52997	Google Scholar	59033
2	PsycINFO	21488	PsycINFO	18893	Google Scholar	35535	Google Scholar	54313	Google Scholar	49471	Academic Search Complete	42785
3	MLA	16172	Google Scholar	13647	PsycINFO	34338	PsycINFO	42012	PsycINFO	37638	bx Recommender	34799
4	CSA - ERIC	15093	Pubmed	11479	Pubmed	24008	Pubmed	28627	bx Recommender	33944	PsycINFO	30410
5	American Histroy & Life	10119	MLA	6985	Web of Science	10996	Web of Science	17584	Pubmed	18226	Pubmed	20234
6	PsycINFO	6727	ProQuest ¹	5566	ProQuest	9136	CINAHL Plus	14318	Web of Science	15390	CINAHL Plus	14201
7	Sociological Abstracts	6132	Web of Science	5535	MLA	8933	MLA	12522	CINAHL Plus	14895	Web of Science	12377
8	EBSCO-ERIC	6125	CSA - ERIC	5361	EBSCO - ERIC	7477	EBSCO - ERIC	9475	MLA	9769	EBSCO - ERIC	7526
9	EBSCO:ath	5945	EBSCO - ERIC	5231	CSA - ERIC	7372	ProQuest	8456	EBSCO - ERIC	8080	ProQuest	6081
10	Google Scholar	5740	*	*	CINAHL Plus	5096	CSA - ERIC	6452	Proquest	6430	MLA	5974

Circumstantial evidence to support the success of this type of IL integration vis-a-vis evidence-based practice in the nursing process can be seen in Table 1 which is from SFX report #2. These numbers represent “clickthroughs” for 2006 to 2011 in the top 10 library subscription databases. Clickthroughs are the number of times that the “Check for Full Text” button is used within each database. Note that in 2008, CINAHL is the tenth most used database as summarized by SFX clickthroughs. CINAHL is a mix of full-text articles and indexed citations; hence the use of SFX’s “Find Full Text” link. From 2009 to 2011, CINAHL maintains the 6th or 7th place within the top 10 databases from SFX. Given that there are approximately 400 students in the SoN compared to the entire SFSU student population of 29,000 FTEs, the standing of CINAHL, a specialized subject database, within the top 10 databases is amazing.

The successful transition from traditional forms of instruction to simulation as experiential learning and problem-based IL assignments was mediated by time -- time to come to acceptance of simulation as a viable teaching tool by teaching faculty, time to develop mutually agreed upon IL assignments, and time to implement the additional teaching of simulation (Pelikan, 2004). The committee’s activities of learning about simulation, producing scenarios for student learning, and IL implementation took place over a period of four years. This growth and learning was accomplished by a collaborative team.

Working Together

Collaboration

The following ideas on collaboration come from the library literature, but can be applied to individuals in the NISC. Raspa and Ward (2000) note five qualities for collaboration between academic professionals and teaching faculty to be successful: passion, persistence, playfulness, project, and promotion. While Cook (2000) only has three components: “achieve common goals”, well-designed structure, and a project that is mutually beneficial. The NISC collaboration exhibited components of each of Raspa & Ward’s and Cook’s elements of collaboration: passion for a common goal, persistence, well-designed structure and aspects of the collaboration that were mutually beneficial.

Trust and commitment may be the component that led to active and equal participation in the NISC collaborative project. Trust is a preliminary in the collaborative system that contributes to positive outcomes of a project (Phelps & Campbell, 2012). Relationship benefits, shared values and communication were the three highest contributors to commitment and trust (Phelps & Campbell, 2012). In collaborative relationships, trust and commitment promote cooperation between collaborators to maintain long-term relationships. Many of these collaborative success factors were experienced by members of the NISC.

Social Capital Theory

Social capital is a theory that can be used to encompass the work of Raspa & Ward (2000), Cook (2000), and Phelps & Campbell (2012). Social capital is “the sum of the actual and potential resources embedded within, available through, and derived from the network of relations possessed by an individual or social unit,” (as cited in Zheng, 2010, p.152). The resources of individuals within the group are the ties to each other and the networks that each brings to the relationship. In the business literature, one finds that social capital and innovation are being tied together to explain positive outcomes from change. Zheng (2010) examined and classified aspects of the social capital-innovation relationship in a review of 33 articles into three

generally agreed upon dimensions: structural, relational and cognitive. Each dimension has been shown to have positive effects on change adoption. Social capital can be used to address inequality of status (teaching faculty and non-teaching professionals), outsider/insider components, and the growth of trust and cohesion among members of NISC.

Structural components of social capital take into account the network size, tie strength, centrality, while the relational dimension depends on the trust and norms of the group. A shared vision is the centerpiece of the cognitive dimension. The NISC's charge of integrating informatics and simulation, our shared goal, and the business of equipping healthcare environments satisfied many components of the three dimensions of social capital. Our participation in academic conferences and trainings filled out other pieces of the three dimensions of social capital.

Specific to the integration of IL into a teaching department, Lampert (2005) identified several collaborative factors: flexibility, creativity, and active and equal participation by discipline faculty and librarians. The concept of flexibility and equal participation was foundational to NISC, in that those of us outside the nursing teaching faculty often had to find ways to bring the teaching faculty around to adopting experiential learning. The ERIAL ethnographic study identified various components of the librarian/student/faculty triad as integral to effective use of non-teaching faculty to enhance student learning. (See <http://www.academiccommons.org/commons/essay/erial-project>) A well-functioning triad depends on full knowledge of the roles each fulfills within a "students' academic world". The ERIAL study concluded that librarians, and by interpretation other non-teaching professional academics, are viewed as marginal to student learning. The NISC's focus on our goals and, specifically, our group dynamics, circumvented this notion of marginalization.

Risks and Benefits

The NISC committee was charged with implementing change in SoN. Change is inherently risky, but the risk was not evenly distributed within the committee. As an outsider, the health sciences librarian experienced less professional and personal pressure for the project to succeed than those within the SoN. The onus of instruction fell on the shoulders of those within the SoN, not on the faculty consultant, who was also outside of the SoN. This imbalance was felt in various parts of the project. For example, IL integration as a component of the overall informatics goal was delegated to the health sciences librarian to implement, while the curriculum mapping was led by the faculty consultant.

Risks and benefits can be categorized into three different, but sometimes overlapping areas: institutional, professional and personal. The largest personal risk is your time. But the investment of that time can also result in large personal benefits – friends and colleagues. Professionally, the benefits are also large if you are on the tenure track. A well-structured collaboration can produce publications, presentations and posters that in academia are the currency of advancement. Professionally, a good collaboration produces long-term program changes that meet the shared professional goals of the group and individual. Institutionally, there can be some perceived drawbacks to having individuals invest time in a collaborative effort.

Specific to libraries, institutional concerns about risk revolve around separating the librarian from the physical and virtual confines of the library organization. Closer collaboration of librarians within the teaching department can be perceived to distance the librarian from the library organization. Situating librarians where the users are, both physically or virtually, not only changes visibility but requires time and effort on the part of a librarian that maybe seen as

absenting oneself from the typical requirements of library work assignments (Kesselman & Watstien, 2009).

Some libraries have made the transition to develop “a cadre of subject-specialist librarians” in support of academic programs and that these “embedded” experts are in position to collaborate with teaching faculty across the “breadth and width of course offerings”, where the cost to the library may be difficult to defend (Massis, 2012, p. 91). Julien and Genuis (2011) identified library administration as a potential roadblock to deeper integration of subject-specialist librarians into teaching departments. Differences in librarians’ personal definitions of academic and professional roles can also result in friction within the library (Julien & Peoskie, 2009). Owusu-Ansah (2004) argues that politics and tradition – within the professoriate, the academy, the library and the institution affect the ability of librarians to integrate more fully with teaching faculty. Again, these library-centric observations maybe interpreted more broadly to include other professional, non-teaching academic personnel, such as a faculty consultant, as well.

Conclusions

A fundamental belief of nursing educators is the idea that nursing is an avocation and the preeminent goal is “building a better nurse” through the use of the best practices in education (Benner, et al., 2010). The concept of social capital illuminates the NISC collaboration and helps to explain the committee’s synergy, whereby an individual’s expertise was enhanced by others within the committee. Each member of the team had training in a particular subject; each with its own language; each with our own problem-solving expertise. The risk and benefits of championing innovation need to be taken into consideration as well as the structure of the program to implement the innovation. Not all collaborative efforts bear fruit; this was the health sciences librarian’s third attempt at such collaboration and the only resounding success.

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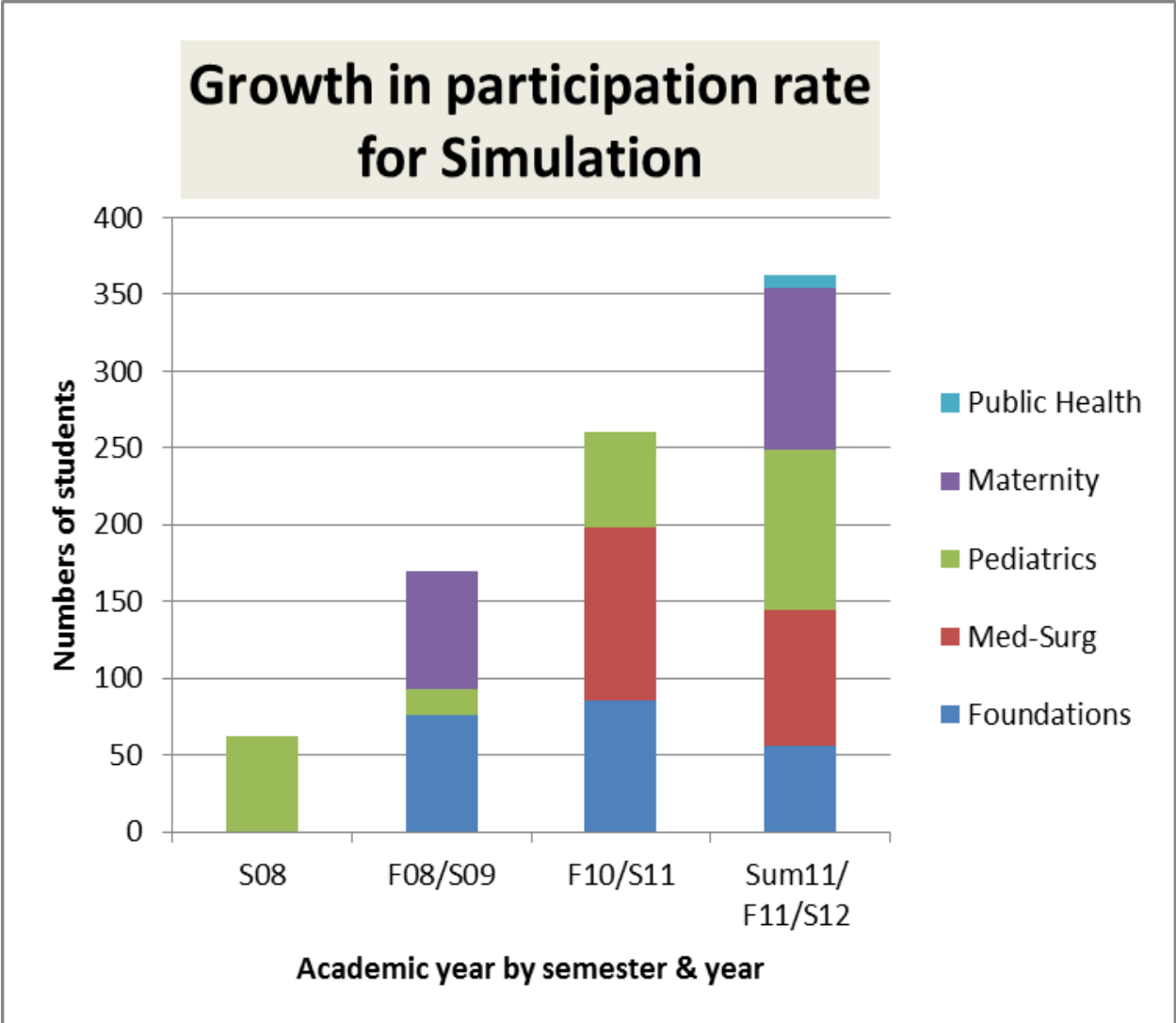


Figure 1. Growth in participation rate for simulation in the School of nursing from 2008 to 2012.