Reflection or Critical Thinking? : A pedagogical revolution in North American health care education.

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Abstract

George Bernard Shaw's observation that the United States of America and Great Britain are "two nations divided by a common language" is as pertinent today as when it was made in1887. This juxtaposition has many other manifestations one of which is the delivery of health care education. It has been established in the United States of America that the preferred pedagogy is critical thinking, exponents of this educational module include Dr. Martin Luther King who suggested that, the function of education, therefore, is to teach one to think intensively and to think critically . . . The complete education gives one not only power of concentration but worthy objectives upon which to concentrate (King,1948). This is further supported by the Yale professor, William Sumner, who enthuses that education in the critical faculty is the only education of which it can be truly said that it makes good citizens (Sumner, 1943).

The English model is one of reflection. Dewey (1933), drew on the ideas of many earlier educators such as Plato, Aristotle, Confucius, Lao Tzu, Solomon, and Buddha (Houston, 1988), and is acknowledged as a key originator in the twentieth century of the concept of reflection. The University of Bedfordshire's preferred model the Perioperative Critical Care pathway is reflection-for-learning. The authors have developed a student centred model of reflection for use within this program. A research study was undertaken to evaluate the introduction of reflective evidence based pedagogy to a traditional critical thinking cohort of North American Surgical Technology students, the impact on the students, academic staff and the potentiality for the Surgical Technology profession forms the basis of this paper.

The study was undertaken at Baker College of Cadillac, which is part of the largest non-profit private college system in Michigan, United States, acknowledging more than 35,000 students on twelve campuses. Baker College grants certificates, associate's, bachelor's, and master's degrees in business, health sciences, education and human service (Baker College of Cadillac, 2008).

Surgical technology cohorts consist of a diverse range of adult students of vastly varying ages and learning styles. Students entering the program do so at various stages of life and many students often confide that they did not do well in high school and had never anticipated going to college in their lifetime.

Coming from a traditional teaching background, as described by Ammon-Gabberson (no date), my teaching style had been; *I taught as I had been taught*. Frey (no date) challenges that an instructor who wishes to improve and become a "master teacher" will reflect upon and analyze their work in the classroom. Simple lecturing was both professionally dissatisfying and suboptimal for the students. Analysis' undertaken of the recent graduates indicated that students followed hospital policies in a prescriptive manner demonstrating a theory practice divide.

The juxtaposition between learner-centred pedagogies and traditional methods of delivery became the focus of the study. Ammon-Gabberson (no date) states that children and adults

learn differently. Weimer (2002) explains that in some areas, a shift is occurring from teacher-centred teaching to learning-centred teaching due to a newer focus on learning.

Dow (2006) explains that in the areas of technology and science, education must be more concerned with interpretation and understanding and advocates identification of pedagogies which move away from the transmission of facts towards the development of autonomous learners. Frey (no date) urges surgical technology instructors to expand their methods, techniques and strategies of teaching and go beyond the typical methods commonly known as lecturing. Further, Laurillard (1998) stresses the importance of guiding the students in a structured way, so that 'learner control' does not mean 'unfocussed and inconclusive'. Proctor (1992) further outlines the three key elements of supervision, including normative elements (dealing with organisational responsibility and quality control), formative elements (concentrating on the development) and restorative elements (supporting well being).

As part of the student supervision encompassing all three elements, the surgical technologist must be able to embrace both current and new technologies in a rapidly evolving environment (Association of Surgical Technologists, no date). The surgical technologist must also promote a culture of patient safety with members of the surgical team in order to provide optimal patient care and a caring perioperative workplace environment as recommended by the Council on Surgical & Perioperative Safety (Association of periOperative Registered Nurses, 2003).

Surgical technologists must be, and to some extent are, critical thinkers, understanding why they do the things they do. However, critical thinking as a discrete process is itself limiting, restricting the development of the students' clinical practice. Surgical technologists must demonstrate the ability to create and implement an evidence-based practice. Sackett, et al. (1996) describes evidence-based practice as integrating individual clinical expertise with the best available external clinical evidence from systematic research. He warns that without current best practice, practice risks becoming rapidly out-of-date to the detriment of the patient. This would also require the surgical technologist to become a life-long learner, knowing how to effectively learn on their own accord.

In the delivery of surgical technology, Dr Michael Moore, Professor of Education at Penn State University, in his key note address at the AST Instructors Forum in San Antonio, Texas (2007) advocated that "you should be looking for minimal change for the maximum effectiveness". Campbell (2001) stresses that there is a major change in the role of the lecturer, and this is best achieved through peer support. Something that Macdonald (2006) suggests is that academic communities have much to learn from each other.

Dow (2006) consoles that the problem of translating educational theory into practice has been long recognised. Thus facilitating minimal change for maximum effectiveness, a new educational resource would encompass learning styles, retention of learning material, development of professional conduct, and development of life long learning culminating in the student becoming an evidence-based practitioner.

A colleague that lectures in Operating Department Practitioners (ODP) in the United Kingdom (U.K.) suggested using a method of reflection as used elsewhere. Larrivee (2006, p.2) intimates that the goal of reflective practice is to create deeper understanding and insight, forming the basis for not only considering alternatives, but also for taking action to continually improve practice throughout one's career. She continues to explain that becoming a reflective practitioner means perpetually growing and expanding, opening up to a greater range of possible choices and responses to various situations and that building the habit of reflective practice allows practitioners to remain fluid in the dynamic environment. Paul Resta (2007) a professor in Instructional Technology at The University of Texas stated we should not teach but that the student should undertake guided research, supported by students' own reflection.

There are many current models of reflection, but it was felt that none had the student and their learning as the focus. Reflection is part of the higher order cognition and requires the use of dialogue and language. So, by having the students making statements and counter statements, and challenging and defending the assumptions they make, the intention is to

develop this higher order thinking (McKendree et al, 1998). Reflection in education is not a new concept for Meiklejohn (1882) enthused, “learning is a social act.”

Boud (2000) and Yorke (2003) however, argued that one of the key purposes of higher education is to facilitate the autonomy of learners. In developing a model of reflection that addresses the students’ need for an educational resource, the aim was to have the student direct and focus on areas which they identify that they have a knowledge deficit.
There are an increasing number of models and types of reflection, Carper (1978) and Johns (1992) are examples of structured reflection, giving the practitioner direction through a series of thought provoking questions. These models are intended to follow a natural course of events. By having prescribed set steps, the process will be comprehensive and complete. Those that advocate for reflection do so in an evangelical manner, Jarvis (1992) preaches that reflective practice should be both enlightening and rewarding thus enabling the practitioner to grow and learn. It is refreshing when Newell (1992) cautions that reflection can also be both painful and arduous and recommends a balance of both good and bad experiences are in fact reflected upon. Palmer et al (1994) goes further and suggests that reflective practitioners should have expert guidance, defining a three stage approach; a model of reflection, a structured reflective diary (also known as a journal), and supervision.

The students undertaking the Diploma of Higher Education in Operating Department Practice within the University of Bedfordshire keep a reflective journal whilst in the clinical setting; the use of the reflective journal is not a new concept in health care education. As early as 1984 Benner was suggesting that exploring critical incidents from practice was a useful method of bridging the theory practice divide (Benner 1984).The autobiographical journal in conjunction with the student constructing a résumé can generate a greater awareness of personal values and the thought process influencing the students’ practice (Ross, 1990). This was reiterated by Andrews (1996) with the conclusion that one way of bridging the theory practice gap was via support and supervision through reflection throughout the practitioner’s career, thus advocating reflection as a life long learning tool. The student further receives ongoing supervision from their personal lecturer. Students have consistently demonstrated difficulty identifying a model of reflection that is appropriate for their use. Nursing models of reflection include reflecting upon the student patient interaction, however for these students assisting in surgery upon an anesthetised client, this is inappropriate.

Carper (1978) and Johns (1992) offer structured models of reflection and afford security in that structure. In one to one reflection, traditional structured reflective models can prove to be restrictive, reducing the students’ experiences to a mere series of questions and answers, with no real reflection having taken place (Palmer et al, 1994). A less restrictive approach to the use of reflective questions are hierarchical models such as Mezirow (1981) and Goodman (1984), they identify three levels of reflection from the inexperienced reflective practitioner, through the highly skilled, to the expert reflective practitioner. For the student Operating Department Practitioner, inexperienced in reflection, a series of questions and answers with no real reflection is often the product.

A third alternative is the iterative or cyclical models of reflection, of which Gibbs (1998) and Kolb (1984) are examples, and whilst they are heralded as being of use to the novice reflective practitioner, their critics emphasis that they have their own restrictiveness by virtue that the cycle is entered at the top and has no other entry point. This is counter argued that this gives the novice the support they require on their faltering steps towards reflective practice (Palmer et al, 1994).

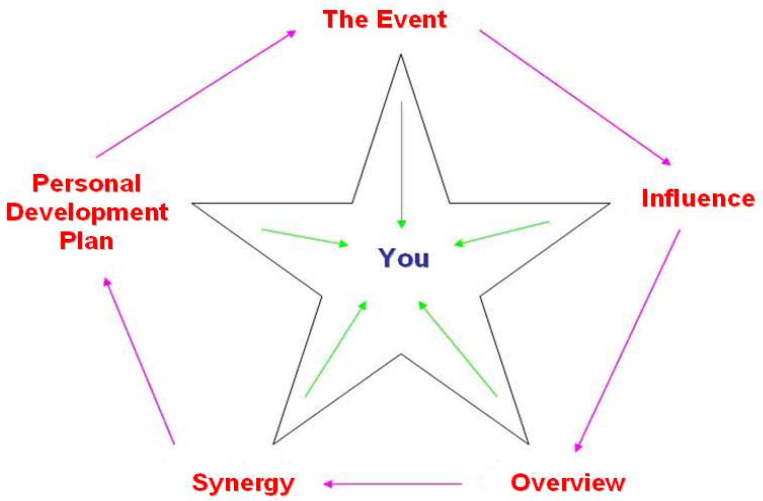
A model of reflection was required for the student Operating Department Practitioner; this model should introduce the student to the concepts of reflection and allow the student to reflect upon their educational experience as opposed to their interaction with the client. As no current model met these criteria it was decided to create a new model drawing from existing literature. It was decided that a cyclical model with its accepted limitation of the single entry point (Palmer et al, 1994) would in fact be beneficial for this student group with their novice entry point to reflection. The published nursing models of reflection favour *Reflection-in-action*, Schon describes this as where a professional thinks on his/her feet, finding a solution through framing and reframing, he further suggests that this is almost a sub-conscious

process creating a synergy of theory and practice. This synergy is as Schon identifies the abilities of an expert practitioner (Schon, 1983, 1987).

Schon introduces the concept of *Reflection-on-action* as a retrospective process whereby the student looks back at an incident and analyses what he/she can learn from it, through this process the student may decide to omit an action or conversely instigate a predetermined set of actions. This can be taken one stage further, *Reflection-for-Learning* whereby these actions are being influenced by evidence based practice and structured through the use of a personal development plan (Schon 1983, 1987).

In nursing models there is great emphasis placed upon feelings, and that much can be gained from how the practitioner's feelings influenced the care given (Benner 1984, Palmer et al, 1994). However, the introduction of reflection to a mature student can be fraught, and to compound this, making them face emotions can be counterproductive. It should be recognised that it was only in the 1990's through the advent of evidence based practice, that experienced/licensed health care professionals began to feel secure enough in this practice to critically analyse it (Darbyshire et al 1990, Darbyshire 1991, Leino-Kili 1990, MaCaughy 1991 MaCaughy 1992).

It was, therefore decided that emotive wording would not be used, to these ends the reflective cycle was constructed thusly. The new educational resource contains five elements, the event, the influence, the research overview, the synergy, and the personal development plan, of which revolve around the student's learning in a cyclical fashion. The student enters the cycle with the *event.* Students are asked to describe an episode that has impact on their educational experience and/or practice. Students are then asked to describe the event's *influence* upon their development as an operating department practitioner. In the *overview,* students are asked to research the topic and determine the best practice in relation to their event. For the *synergy,* students are asked to demonstrate the creation of new thinking that influences their development as a student operating department practitioner. Lastly, students are asked to describe a *personal development plan* in which the student describes their plan, including resources needed, to continue to learn about their topic in order to continue to develop as an operating department practitioner and encounter the same or similar event in the future. This brings the student back to the *event*.



As the student evolves as a reflective practitioner these facets of reflection are not only useful as discreet reflective tools, moreover as a totality it will facilitate the students move from a superficial reflective learner through the layer of the significant to the profound learner (Hatton & Smith, 1995. Hess, 1999. Jay & Johnson, 2002. Larrivee, 2004).

The application of the Reflection-for-Learning model of reflection has proven successful in the United Kingdom with students in similar learning and professional environments and affords the implementation of learner-centred teaching.

At the introduction of this new educational resource in Michigan, the students resisted the process in a variety of ways. Some responded with what Weimer (2002, p.154) aptly describes as the "overwhelming lack of enthusiasm", others took a half-hearted attempt at the assignment commenting that it was not a useful tool or that the lecturer did not know how to teach, still others refused to do the assignment accepting the reduction in course grade. Weimer (2002, p.149) forewarns that "student and faculty resistance is all but a guaranteed response to learner-centred teaching". Felder and Brent (1996) explain that "students whose teachers have been telling them everything they need to know from the first grade on don't necessarily appreciate having this support suddenly withdrawn". Weimer (2002, p.157) consoles, that it is not the teacher that must overcome the resistance to learner-centred teaching; it is the student that must overcome their own resistance to accepting the responsibility for their learning.

This lead to some issues, these were due in part to the expectation that students would make an extreme change to their learning strategies without the recognition that this has its own inherent complications? Palloff and Pratt (2001) argue that traditional models of learning may not have prepared the students for the autonomy and interdependence required to engage fully with these new learning styles. Ammon-Gabberson (no date) explains that because adults like to think of themselves as achievers, they often have difficulty in the role of an adult learner and encourages that after being reoriented to the learning process, adults can take responsibility for their own learning as they have done with other facets of their lives.

Surgical technology students expressed difficulty identifying an event that had an impact on their educational experience and/or practice. After more encouragement, students often chose interpersonal topics. Students then progressed and began to write about practice focused topics. Students' work demonstrated a lack of comprehension regarding the influence or impact of their identified knowledge deficit upon their learning, understanding, and functioning. The quest for research relevant to their event topic thoroughly challenged the students. Many expressed a conviction that research would not aid them in learning about the event they had chosen. Ample classroom discussion, with classroom demonstrations on research techniques, was required to assist students past this hurdle. The synthesis of new learning and development of new ways to approach a similar event was easily achievable by the student only if new knowledge was gained in their quest for relevant research. The development of a personal development plan often frustrated the students and some simply skipped this step. Students had great difficulty completing the reflective cycle due to lack of research and reluctance in creating a personal development plan. Resistant students insisted they had completed the cycle, yet their conclusions often stated a coping strategy void of any new learning or strategy for facing the same situation in the future.

The Reflection-for-Learning assignments continued into the next quarter when the students entered their clinical practice. As students took a more active role in the clinical setting, they found practice based events and the influence upon their learning more easily. Whilst the UK counterparts undertake a fifteen week model of research evaluation, the US students did not benefit from similar preparation and therefore research was still a challenge as students demonstrated inexperience with evaluating research methods, the relevance of the research, leading to the possibility of relying solely on research funded by the product manufacturers. Students also began to recognize that there may be areas where the proper research does not exist and analysed proper actions for a surgical technologist in such circumstances. Students began to demonstrate understanding of the synergy portion of the cycle, forming knowledgeable opinions in which they could debate and defend amongst other more experienced surgical team members.

The personal development plan was the last concept for the students to grasp. They had begun to take ownership in their learning process and demonstrated enthusiasm in the opportunity to direct their learning in areas in which they were interested and/or recognized a need to know more. They were progressing and beginning to recognize that they will need to continually evaluate the research on all aspects of their surgical technology practice in order to provide the highest quality patient care.

Students that have persisted in their reflection-in-learning assignments have demonstrated completion of the reflective cycle and growth as a practitioner. Weimer (2002, p.167) explains that students transform from dependant to independent learners gradually. These students have demonstrated a re-visitation of the original event with new insight and attainment of valuable skills and knowledge for use in the workplace. It is interesting to note that these same students have begun to identify established surgical technologists in the workplace that have not kept pace with the research and best practices and continue to practice in the same manner they were taught many years ago, still believing that they are providing the best patient care possible. As the students found the appropriate research, they discussed the true meaning of best practices and it became evident that they were developing into evidence-based practitioners. Due to the success of reflection within this program, the paramedic program plans to utilize the resource as well.

Larrivee (2004) relates that people view the development of reflective practice as the foundation for the highest professional competence and that the reflective practitioner comes to see themselves as change agents, capable of understanding not only what is, but also working to create what could be. This is verified by a student who enthuses about reflection and says; "*You are right! I understand that my writing style is not exactly congruent with your expectations and that is ok. I feel like I am coming along. I am recognizing things in the OR that make me think later and that is a big part of the game."*

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