

NURSING AND CONSTRUCTIVISM: A NOVEL PEDIATRIC ICU NURSE ORIENTATION PROGRAM FOR NEWLY GRADUATED NURSES

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ABSTRACT

The orientation process for newly graduated registered nurses (RNs) is extremely important as these RNs work to put theoretical learning into the practice of nursing care. During orientation, a new nurse begins what can be a harrowing process starting on a continuum that progresses from novice to competent nursing professional. Movement along this continuum can seem more distressing for new RNs in the pediatric critical care setting as the natures of both pediatric and critical care nursing are taken into consideration. The purpose of this paper is to detail the new graduate orientation efforts undertaken by a Southwestern United States Level One trauma center pediatric intensive care unit (PICU). Employing key elements from Benner's Novice to Expert model, Fawcett's metaparadigm components, and constructivist learning principles, this PICU has structured a 17-week new graduate nurse orientation program. This orientation program has succeeded in "building" and nurturing newly graduated RNs who can not only care for critically ill children, but who also have the nursing knowledge foundation to teach other new nurses.

Keywords: Nursing, Constructivism, RNs, PICU

When a newly minted registered nurse (RN) enters the nursing workforce she or he has been exposed to countless facts, theories, processes, etc. related to the myriad nursing care of humans. This new nurse, who may have been a high-performing student, will enter their first nursing position with anxiety and fear related to job performance and patient safety. New RNs hired into the Pediatric Intensive Care Unit (PICU) in a level one trauma and academic medical center certainly would describe similar feelings and emotions upon starting work. Phrases given to this PICU nursing educator in response to the question "how do you feel about working in the PICU" range from 'I'm nervous', 'terrified', etc. These sentiments are well understood, but must also be overcome. Through using a combination of Patricia Benner's theory of knowledge/skill acquisition, concept-based learning, and constructivist theories of skill competence, our PICU employs a graduate nurse program that seeks to ease the transition from initial licensure to successful practice.

Patricia Benner and the Novice to Expert Nurse Continuum, Jacqueline Fawcett and the Metaparadigm Components of Nursing, and the Child in Respiratory Distress

Most new nurses step from the graduation line thinking they can save the world. With enough oxygen, morphine, Foley catheters, and nursing diagnoses, new graduates are sure that there is no patient or problem, they cannot fix. This confidence often disappears that first day on the unit or the ward. The reality that, soon, they will be entrusted with the lives of sick patients can become overwhelming. In the midst of this fear, new graduates will latch on to concrete principles that they feel must apply to every situation (Benner, 2000). They lack the experience to know that every situation is unique, and that every patient is unique.

At the other end of the spectrum, there are nurses who are the embodiment of effective and caring nursing philosophy. These are the seasoned nurses who seem to know everything, are rarely stressed, and seem able to skillfully navigate patient scenarios with ease and finesse while displaying noble caring traits. These expert nurses are the envy of nursing students and new nurses not only for their patient care abilities but also for how they deal with providers and all aspects of the healthcare system. These are Benner's (2000) expert models for the profession. These experts can be juxtaposed against new nurses who struggle to make it through the day. It is safe to say that most experienced nurses can recall their own journeys through Benner's 'novice to expert' (2000) continuum and look back on those times with relief that they are over.

When a child is admitted to a pediatric intensive care unit in respiratory distress, it can be argued that the most important people that child and her family will encounter are the bedside nursing staff. A child with retractions, tachypnea, and air hunger is extraordinarily frightened. Often, the only individuals more frightened in these scenarios are the child's parents. It is up to the bedside nurse to think through and perform several critical processes and skills. These skills and processes are necessary to maintain that child's airway and ability to breathe, maintain the sanity of all people in the room, and lastly, to look for factors or teaching opportunities to prevent or at least manage similar incidents in the future. Nurses and nursing students at different points along the experience and education continuum will approach this scenario differently. These different approaches will have, at their heart, a philosophy akin to "doing what is best for the patient".

Many would agree that the philosophy that guides nursing practice in this instance is that a nurse will effectively, compassionately maintain the airway, ease the child's work of breathing and the parent's anxiety while looking for factors that contributed to the child's condition and helping the family avoid those in the future. Unconsciously, the experienced nurse is actively attending to all of Fawcett's (2013) metaparadigm components when she/he does this. These components are person, environment, health, and nursing (Fawcett, 2013). Three of these components – person, environment, health – are intrinsic to the patient and their experience (Fawcett, 2013). The fourth component – nursing – is how the nurse is able to assess, interpret, and plan interventions according to the other

three (Fawcett, 2013). How well a nurse attends to these components and ties them all together with 'nursing' is inextricably bound to Benner's (2000) theory of skill and experience acquisition.

When the child with respiratory distress is viewed in a hermeneutic sense, nurses of all levels – novices to experts (Benner, 2000) will 'read' and interpret (Charalambous, 2010) patient and family cues differently. The acquisition and interpretation of patient information is done differently by these nurses and can lead to drastically different patient experiences and outcomes. While all nurses will hopefully remember their ABCs – airway, breathing, circulation – less experienced nurses can become afflicted with tunnel vision. This myopic focus doesn't allow new nurses to filter out useless information or accurately interpret data that can impact a patient-care situation (Benner, 2000). They will focus on the concrete, seemingly static patient care rules that can serve as a source of comfort – a security blanket of sorts (Benner, 2000). Because of this, crucial cues to the wellness of the patient and the family can be missed by the novice. The expert nurse will be able to interpret the situation and take in all relevant, emergent information while cataloging other, non-emergent cues and data for later care-planning.

As a child is experiencing air hunger, the drive and motivation to assist the child's breathing should be instinctive. It is fair to assume that this instinct is present in most individuals but should certainly be present in all nurses both seasoned and new to the profession. A new nurse or nursing student will, almost assuredly, rush to the child. Using any available equipment, this 'novice' (Benner, 2000) will probably give oxygen and attempt to assist the child's breathing – often whether the child likes it or not. This may work for the child or it may not. New nurses have been known to hold a child down, pin a bag-valve-mask (BVM) to their face, and squeeze oxygen into the child's lungs – or their eyes - assuming she/he remembered to turn the oxygen source on. Whether the novice nurse is successful in relieving the respiratory distress or not, the child and family will experience more distress and fright from this less than calm approach. The novice may realize that she/he has terrified the child and parents and dial back their approach. They may eventually realize that the parents need to be cared for almost as much as the child. They may eventually see that there are cues – right in front of her or him – that point to why the child is in respiratory distress. However, Fawcett's (2013) metaparadigm components – person, environment, health, and nursing – all come together for the novice nurse at different times. It is only with much guidance that the novice can piece together all the disparate information presented to begin to craft a nursing diagnosis and then a care plan from the first moments with a patient.

At the far end of Benner's (2000) continuum is the 'expert' nurse. This nurse will incorporate all of Fawcett's (2013) metaparadigm components when caring for the air hungry child in respiratory distress. The expert does everything the competent nurse does. She/he has a prepared room with all necessary equipment, knows all reports come with a grain of salt, approaches the patient in a calm manner, and delivers the interventions the child needs – and only those interventions. The expert nurse transcends basic, competent care, when she/he approaches the child in a calm manner, makes note of the parents' second hand

smoke smell and cigarettes in dad's shirt pocket, and then assesses the child, intervening in only the necessary ways. The expert will calmly stabilize the child, attend to the parents' anxieties, will remember that the family will need tobacco cessation coaching, and will already start crafting the child and family's discharge teaching in those early moments.

There is a commonly held maxim that discharge teaching begins at admission. The expert nurse knows this always. The expert nurse also knows that parents aren't thinking toward discharge and that certain information like the dangers of second hand smoke and respiratory distress triggers may be lost upon parents at this time. However, all of the assessment information that the expert gathers will be put together and shared with the care team to craft a care plan – and a discharge plan – for the patient and the family.

This is how in those early moments of assessment, the expert nurse attends to Fawcett's (2013) metaparadigm components – the anxious child – person; cigarette smoking parents and airway triggers – environment; attending to the child's work of breathing – health; and crafting holistic care and discharge plans – nursing. It is the nurse who can do these things – Benner's (2000) 'expert' nurse – who is the envy of nursing students and new nurses alike. This nurse is the embodiment of a successful, restorative nursing philosophy. This nurse is able to see how all these components are interconnected and how she/he can impact them, not only during the acute phase in the hospital but also when the patient goes home. Lastly, the expert nurse is able to fluidly move between Fawcett's (2013) domains in a non-linear fashion that allows for constant re-assessment and re-focusing on goals and outcomes. The expert nurse's ability to care for the whole patient at different acuities is the embodiment of a philosophy that seeks to do what is best for the patient and only what the patient needs when they need it.

Constructivist Learning, Nursing Concepts, and Skill and Knowledge Acquisition in the Pediatric ICU

PICU Immersion (Week One)

The journey from novice to expert can be a daunting one. To assist novice nurses on the journey to expert practice, our PICU has developed an orientation program that relies heavily on constructivist learning theories, concept-based ideology, and problem-based learning. Before delving too deeply into the logistics of the PICU orientation, a brief note should also be made regarding the overall educational bedrock of this nursing unit. Education related to nursing care on the PICU is firmly rooted in the burgeoning movement of concept-based nursing education. Concept-based education seeks to find the anatomical, physiological, and pathophysiological similarities within nursing care (Giddens, Brady, 2007). This educational movement is gaining a firm foothold in nursing education because it helps nursing students see the commonalities between conditions and can help the emerging nurse home in more accurately on nursing diagnoses and interventions. As more and more nursing students are being exposed to this philosophy of education, many GNs are very familiar with this approach when they begin work within the PICU. From an educator standpoint, the same nursing

concept advantages that are afforded to students are also useful in tailoring education and training for the new nurse.

Orientation to work on the PICU begins with a week-long immersion program. This week is conducted by the PICU unit based educator (UBE) and includes extensive information related to unit policy, unit equipment, relevant patient pathophysiology, and problem based learning scenarios with a group of graduate nurses (GNs). These groups have numbered either two to three GNs at a time. The socially practiced application of prior learned knowledge is a key component of the constructivist paradigm that guides PICU orientation (Kantar, 2011).

Hodges (2011) writes that an important component of nursing education and skill acquisition is the idea of problem-based learning (PBL). During week one immersion, PBL places GNs in theoretical scenarios that they can expect to see in the workday. For GNs, the PICU employs PBL scenarios that are introduced and walked through in a controlled setting that requires the graduates to take definitive action while explaining their actions. Harland (2003) writes that the PBL environment is one that can be tailored to different learning levels because it can begin with what the learner already knows and then set the stage for the acquisition of new skills and knowledge.

When delivering a PBL scenario, it is hoped that from the introduction that GNs begin to access previously learned and stored knowledge. This concept is one that Schmidt, Rotgans, and Yew (2011) describe as the activation-elaboration hypothesis where GNs will begin to access information to help prioritize what assessments and interventions will be needed to effectively begin caring for a child. A common initial PBL scenario used with GNs is the air hungry child presented earlier in this paper. It is hoped that while painting this problem, the GN will assess her or his environment for necessary airway adjuncts, oxygen source, and other resuscitation equipment. Once these basic – airway, breathing, circulation – essentials are accounted for, it is hoped that the GN will begin to account for the development level of the child. However, this can be an unreal expectation for this nursing educator. For a GN to verbalize anything related to the development stage of a patient would be viewed as an over-achieving trait. Because pediatric nurses care for patients ranging in age from neonates to late teenagers, developmentally appropriate care is an underlying theme in day-to-day operations of the PICU.

The next step in presenting PBL scenarios in PICU orientation seeks to activate the GN's situational interest. Situational interest is the concept that learning about a PBL scenario will stimulate an interest in the relevance of the scenario to day-to-day competence as a staff nurse (Schmidt, et al, 2011). In other words, it is crucial for this nurse educator to construct PBL scenarios that nurses are likely to encounter anytime during their tenure on the pediatric ICU.

Stressing the importance and relevance of 'problems' should ignite a 'hunger' for knowledge building and skill acquisition relative to the scenario (Schmidt, et al, 2011). For lack of a better phrase, it is hoped that new nurses want to learn and eventually master relevant knowledge and skills so that they are not "caught with their pants down" when presented with common PICU patient scenarios.

PICU New Graduate Orientation (Weeks 2-17)

Once a GN gets through the PICU immersion week, she or he begins a 16-week orientation with a dedicated group of preceptors. The preceptor/graduate nurse relationship is not unlike an apprenticeship where the two participants engage in situated cognition. This theory-to-practice learning environment is a social one where the GN and preceptor work together through modeling, coaching, and performing a patient care task (Woolley & Jarvis, 2007). The work of orientation is meant to help the GN grow within a 'zone of proximal development' where her or his skills – both technical and critical thinking/analysis – are expanded with the help of the preceptor (Harland, 2003). At the start of orientation, the GN does more observing than performing of actual patient care. It is the expectation that over the 16 weeks that this nurturing and refinement of skill will eventually see the preceptor step back and allow the GN to perform the thinking/analysis and work of pediatric critical care nursing (Kantar, 2011). This coupling of learning broad nursing concepts taught within a constructivist framework (Brandon & All, 2010) is necessary to set GNs on a path to nursing competence in a relatively short timeframe.

The Zone of Proximal Development ZPD refers to a theoretical learning 'zone' located between what a learner can perform alone and what the learner is unable to perform without extensive assistance (McAllister, Searl, Davis, 2013). McAllister, et al. (2013) write that the ZPD is where the learner and the educator should be working most often to expand skill and knowledge development. Throughout the PICU orientation process, nurse preceptors work to continually maintain teaching and learning within the ZPD to expand GN skills. The ZPD is an invaluable space that allows for guided feedback as the GN begins the progression from novice to competent nurse. Viewed constructively, this feedback – both real time and reflective - is meant to help transition the GN from a theory-based knowledge set to one of knowing, internalizing, sensing, and acting in concert with the patient care environment (Naude, van den Bergh, Kruger, 2014).

A key component of PICU GN orientation that occurs simultaneously is the completion of several skills and equipment validations. Through hands on, instructional teaching, return demonstration, and validation of these skills, the preceptor seeks to scaffold the new nurse with hands-on skills that should transfer to the bedside. With this "scaffold" or skills foundation, the GN enters the patient room, can perform the skill, set up the equipment, or gather the necessary data. Once the GN is able to accomplish whatever skill is necessary, they have begun to set their own skills foundation and the initial preceptor scaffold is no longer necessary (Bradbury-Jones, Irvine, Sambrook, 2010). It is at this point that the GN's foundation can be broadened by the preceptor's next 'scaffold' as more critical and complex patient care scenarios are introduced (Bradbury-Jones, et al, 2010).

CONCLUSION

The amount of knowledge that nurses are expected to access and have mastery of is immense. Patients and treatments are becoming more complex. For nurses to be able to competently care for these patients may seem to be an

overwhelming task. This task can become downright Sisyphean when applied to orienting graduate nurses into a critical care area like a pediatric intensive care unit. Our PICU is facing this daunting task boldly by applying educational ideas like the concept-based approach to learning nursing skills, assessment, and data interpretation. Faced with time constraints common to all areas of health care, the PICU seeks to maximize learning in a brief window of time by applying constructivist principles. These principles are used to 'build' competent nurses who can think critically, quickly, and compassionately. It is the hope that not only will the freshly 'oriented' nurse will be able to safely and skillfully care for critically ill children, but also will have the foundational knowledge to eventually teach new nurses in the future.

REFERENCES

- 1) Benner, P. (2000). *From novice to expert: Excellence and power in clinical nursing practice*. (Commemorative Ed.). Upper Saddle River, New Jersey: Prentice Hall.
- 2) Bradbury-Jones, C., Irvine, F., Sambrook, S. (2010) Empowerment of nursing students in clinical practice: Spheres of influence. *Journal of Advanced Nursing* (66)9, 2061-2070.
doi: 10.1111/j.1365-2648.2010.05351.x
- 3) Brandon, A., All, A. (2010). Constructivism theory analysis and application to curricula. *Nursing Education Perspectives*, (31)2, 89-92. PMID: 20455364
- 4) Charalambous, A. (2010). Interpreting patients as a means of clinical practice: Introducing nursing hermeneutics. *International Journal of Nursing Studies*, 47, 1283-1291. doi: 10.1016/j.ijnurstu.2010.02.011.
- 5) Fawcett, J. (2013). *Contemporary nursing knowledge: Analysis and evaluation of nursing models and theories* (2nd Ed.). Philadelphia: F. A. Davis.
- 6) Giddens, J., & Brady, D. (2007) Rescuing nursing education from content saturation: The case for a concept-based curriculum. *Journal of Nursing Education*, (46)2, 65-69. PMID: 17315564
- 7) Harland, T. (2003). Vygotsky's zone of proximal development and problem-based learning: Linking a theoretical concept with practice through action research. *Teaching in Higher Education* (8)2, 263-272. doi: 10.1080/1356251032000052483
- 8) Hodges, H. (2011) Preparing new nurses with complexity science and problem-based learning. *Journal of Nursing Education*, (50)1, 7-13. doi: 10.3928/01484834-20101029-01
- 9) Kantar, I. (2011) Incorporation of constructivist assumptions into problem-based instruction: A literature review. *Nurse Education in Practice*, (14)3, 233-241. doi: 10.1016/j.nepr.2013.08.010
- 10) McAllister, M., Searl, K., Davis, S. (2013) Who is that masked educator? Deconstructing the teaching and learning processes of an innovative

humanistic simulation technique. *Nurse Education Today* (33)12, 1453-1458. doi: 10.1016/j.nedt.2013.06.015

- 11) Naude, L., van den Bergh, T., Kruger, I. (2014) "Learning to like learning": An appreciative inquiry into emotions in education. *Social Psychology of Education* (17)2, 211-228. doi: 10.1007/s11218-014-9247-9.
- 12) Schmidt, H., Rotgan, J., Yew, E. (2011) The process of problem-based learning: What works and why. *Medical Education*, 45, 792-806. doi: 10.1111/j.1365-2923.2.11.04035.x
- 13) Woolley, N., Jarvis, Y. (2007) Situated cognition and cognitive apprenticeship: A model for teaching and learning clinical skills in a technologically rich and authentic learning environment. *Nurse Education Today* (27)1, 73-79. doi: 10.1016/j.nedt.2006.02.010