

Using intrinsic and extrinsic motivation in continuing professional education

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Received: 20 October 15 Accepted: 09 December 15 Published: 22 March 16

The technologically advanced and super-charged pace of today’s society poses a multitude of challenges in the medical and nursing professions. Safe and quality patient care depend on the skills and competence of the professional caring for them. In such a dynamic environment, life-long learning, professional development, and continuing professional education are not just a good idea, they are a necessity.

The Dreyfus model of skill acquisition was developed around 1980 by the brothers, Dreyfus and Dreyfus.^[3] Others have adapted this model to fit into disciplines other than those of the Dreyfus brothers. Benner, for example, adapted the skill acquisition model into what is known as From Novice to Expert nursing theory.^[1] Both theories are founded on the principle that learners pass through five stages: Novice, competence, proficiency, expertise, and mastery. The phases are characterized by how rules interplay with real-world context. A novice will simply follow the rules that they are given and not consider context. Intermediate stages contain a mix of rule following, combined with more and more sophisticated consideration of context. The master is one who makes decisions and takes actions intuitively, even in new contexts. A master may, in fact, not be able to state the rules or the heuristics that they are using. In this light, the role of education is to move a learner from novice to master by exposure to increasingly more real-world and varied contexts.

We could deconstruct the training pathway from novice to expert in the medical and nursing educational systems, but there is an equally important consideration. The skill acquisition model was developed with the assumption that students were learning skills in a relatively static domain; once a master, always a master. In fields such as medicine and nursing, where new knowledge, ideas, and methods are constantly being introduced, a master will not stay a master for long. A disruptive technology

or process could even revert a master back to a novice. Ongoing education becomes necessary to maintain master status.

However, here, we face an educational dilemma. How do we motivate a master, one who has already invested thousands of hours to become a master, to engage in continuous life-long learning? To begin to attack this question, we need to go back a decade before the Dreyfus brothers proposed their model.

In 1971, Deci conducted a study where two groups of people solved simple puzzles. Subjects in Group A underwent three rounds of puzzles and never received a reward. Subjects in Group B also underwent the same three rounds of puzzles but received a reward only in round two. The ability to solve the puzzles was inconsequential in the study. What was measured was the duration of time participants spent solving puzzles between sessions, when the moderator told them to take a break. The research question was to determine the impact of extrinsic rewards on intrinsic motivation.

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Access this article online	
Quick Response Code: 	Website: www.surgicalneurologyint.com
	DOI: 10.4103/2152-7806.179231

How to cite this article: Tranquillo J, Stecker M. Using intrinsic and extrinsic motivation in continuing professional education. *Surg Neurol Int* 2016;7:S197-9. <http://surgicalneurologyint.com/Using-intrinsic-and-extrinsic-motivation-in-continuing-professional-education/>

The clear takeaway from this study was that the intrinsic motivation of Group B was essentially destroyed in the third round due to the reward bestowed in round two. This was the first glimmer of a comprehensive theory of motivation and behavior that has emerged over the past several decades to become self-determination theory.^[2]

At the heart of self-determination theory is the idea that people desire to feel that their actions are caused by the free-agency component of self.^[5] The relationship between the desire to act and the action itself is described as a sort of iceberg model. The part that we can see and measure, what is called engagement, is above the surface.^[7] It is multidimensional and is composed of a set of interdependent behavioral, emotional, and cognitive actions. Below the surface of the iceberg is motivation.^[6] It is based on neural and other biological processes that are often not consciously recognized. Motivation endows engagement with its strength, intensity, and persistence.

What Deci's original experiment exposed was how extrinsic motivation (external rewards that drive internal motivation), if not executed very carefully can undermine long-term motivation. It is not that all extrinsic rewards are bad. Traditional sticks and carrots prevent an engagement and can work well for algorithmic tasks, such as making parts, seeing a high volume of patients or engaging in competency training. In these tasks, persistence and speed are directly related to productivity. Extrinsic rewards can boost motivation in these types of tasks in the short-term. However, unless the rewards are enhanced over time, they reach a saturation point in their effectiveness. As Deci's work showed, we can too easily become dependent on extrinsic rewards for our motivation.

Conversely, what about intrinsic motivation? It is tempting to conclude that intrinsic motivation is a fixed and complex characteristic of an individual and, therefore, not reachable or learnable. With such thinking, the best we can do is select bright and motivated people and hope their natural abilities will carry them through their careers. Countering this view is a large and growing body of psychological research suggesting that intrinsic motivation is not fixed.^[4] Self-determination theory was in fact designed to explain how it is possible to influence an individual's intrinsic motivation.

The key is that engagement and motivation are coupled together through their environment. Motivation strengthens engagement that leads to actions that make a change in the environment. That change may serve to enhance (a virtuous cycle) or dampen (a vicious cycle) self-determination. Someone outside of an individual can, therefore, establish an environment that will foster a virtuous positive feedback cycle that enhances the self-determination. These environments promote and

reward three inter-related basic psychological needs. Autonomy is experiencing one's behavior as originating from and endorsed by the self. Competence is the feeling of effectively pursuing goals that impact the environment. Relatedness is the formation and maintenance of emotional bonds with others. An environment that fosters these elements will prime individuals to become passionately engaged. What is more, extrinsic rewards that endow one with more autonomy, more competence and more relatedness will further strengthen the virtuous cycle of intrinsic motivation. Hence, extrinsic rewards can, in fact, become an important positive influence on intrinsic motivation.

We face a dilemma in the medical and nursing communities, but that dilemma also exposes an opportunity. Many of the systems that select, train and foster continuous improvement assume that motivation is fixed. As a result, rewards are extrinsic and aim simply to promote simple engagement, or even worse to avoid penalties. They dampen intrinsic motivation rather than fuel it. What we learn from self-determination theory is that there is a way to build continuing education systems that see intrinsic motivation as environmentally dependent and driven by autonomy, competence, and relatedness.

To remain a life-long master, we must develop systems that encourage a passion to engage in life-long learning and professional development. Certifications, involvement in specialty societies and continuing to seek the master/expert pinnacle of one's area of practice are some ways that health care professionals can ensure that they are at the top of their game and are providing safe and quality care to their patients. Maintaining the status of a master or expert is not an easy task. Some would say that this is a task that can only be achieved through intrinsic motivation.

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Editor's Commentary

Dr. Tranquillo raises an interesting and substantive topic with this article. Using the point of creating environments that will foster a "virtuous" cycle to enhance self-determination and motivation is critical in the profession of nursing. As espoused in a previous SNI: Neuroscience Nursing editorial, nursing (and other disciplines for that matter) must stop the disruptive behavior and get back to the grassroots principles of service and mentorship.

Experienced caregivers (master/experts) should be expected to use their acquired knowledge and talents to

create an environment where those who are novices can feel comfortable asking questions. Providing mentorship and guidance that results in another's success in his/her career can be someone's own extrinsic reward for that behavior.

Exposing new graduate nurses and medical interns to colleagues who have demonstrated a commitment to life-long learning and professional development can be a powerful and successful tool in encouraging those novices to aim for a similar trajectory in their own careers. The expectation would be that this behavior would create a continuous positive feedback cycle that would maintain a desire to persistently achieve new heights in providing safe and competent care to patients.