

Tweets, Internet, and Apps to Enhance Nursing Education

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ABSTRACT

Nursing Students in the 21st century have been met with an information explosion. This presents a challenge in the clinical area as they attempt to keep abreast of needed skills, procedures, and knowledge. A technique to avoid this burden is Just-In-Time-Teaching. JITT has been widely used in medical education as a training method for newer concepts or seldom-performed procedures.

The use of technology is a required competency of baccalaureate nursing graduates. Additionally, it is most important that they have the ability to access up to date, evidence-based information that should be used to guide patient care, including, but not limited to, evidence-based practice guidelines and current medication information. Thus, we sought to utilize this method to provide support to nursing students in the fast-paced clinical arena.

This presentation will highlight the use of tools such as e-resources, healthcare apps, videos, calculators, concept maps, along with clinical-based social media such as twitter and blogs. Methods for supporting clinical instructors and students in the use of technology will be reviewed as well as, the benefits and challenges of using JITT.

REVIEW OF LITERATURE

As patient acuity is increasing and length of hospital stay is decreasing, nursing students are overloaded with the complexity of the patient's health histories and plan of care. Electronic devices to chart data and access current evidenced-based practice for patient care are often utilized rather than large text books or drug cards (Beers and Berry, 2015).

Electronic devices pose some concerns regarding confidentiality and HIPPA, most students and faculty agreed that use of handheld devices were useful in the clinical setting. JITT has been highly useful for clinicians who need a review of skills. This teaching is especially helpful just prior to a procedure, where it is not convenient to reference lectures or text books (Liu, Hoa, Wang, 2013).

Millennials are embracing all the new technologies and using social media on a daily basis. Social media can enhance learning and positively impact a patient's knowledge on their disease process. Social media creates an environment to share information, ideas, and a place to ask questions (Peck, 2014).

Nursing education is evolving to include technology. As educators, we now have the opportunity to decrease the students cognitive load by optimizing education with the use of technology through JITT (Knutson, Park, and Smith et al., 2015). The National League for Nursing highlights social media and other technologies can support our students through flexible, collaborative, evidence based curricula designed to support the students learning by integrating current technology and enhancing their ability to learn (Kaylor, 2013).

MATERIALS AND METHODS

Materials

Internet access via computer or smart phone and ability to upload and access apps in clinical areas

Methodology

The Nursing Faculty and Clinical Preceptor will use a variety of e-resources to provide JITT to the student nurse. With the future moving toward online classes, technology is paired with learning and integrated into curricula to create a dynamic virtual learning environment. Student nurses are provided large amounts of information which is not easily retained causing high cognitive loads which in turn, cause the student not to be able to recall learned information when it's needed most. Just in time teaching is provided on the spot through the use of technology to refresh the memory of the student nurse prior to performing a skill.

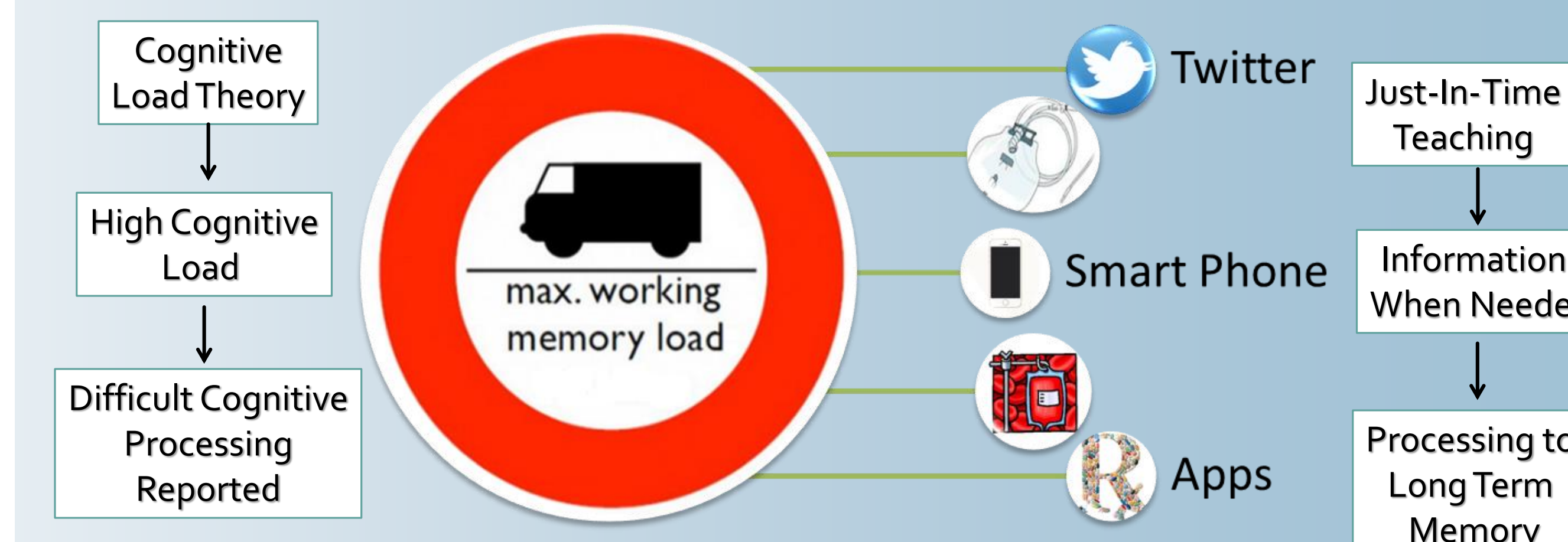
E-Resources utilized

- **Twitter:** The students and preceptors are taught to use twitter to ask questions, send and access links to videos and evidence based practices related to the needed clinical decision support unfolding digital era of health care
- **Jones & Bartlett's Nurse's Drug Handbook App:** Allows the student to access the most up to date information on medication to reference before administration
- **Mosby Nursing Skills:** All students have access to evidence based learning videos and clinical competency modules
- **Hospital Intranet:** Preceptor website where nurses can interact and exchange questions and tips in real time
- **Technology Informatics Guiding Education Reform (TIGER):** Aims to enable practicing nurses and nursing students to fully engage in learning through maximizing the integration of technology to reflect clinical competency and improve patient care

JITT & COGNITIVE LOAD THEORY

Cognitive Load Theory informs educators that students can only process and hold a few concepts in their short term memory. In order to effectively teach we need to identify concepts that are "need to know" vs. "nice to know" and deliver ideas in smaller segments to avoid cognitive overload and have the ability to process knowledge into long term memory (Kaylor, 2013).

Just-In-Time-Teaching (JITT) is an education strategy aimed at arming students with the information needed to assist in decreasing cognitive overload and maximize the ability to retain knowledge. Outside of the didactic lecture, in the clinical areas, JITT can be used to support practice and clinical decisions through the use of technology to deliver related concepts or procedure competencies in real time (Knutson, Park, and Smith et al., 2015).



3 Kinds of Cognitive Load

1	Intrinsic Load	2	Extrinsic Load	3	Germane Load
	Problem complexity		Unrelated working memory load		Processing memory going towards building LTM schema
	- Starting an IV - Using a defibrillator - Conducting robotic surgery		- Distractions - Mental notes - Conversation		- How is this IV pump different from the one I just used next door? - How do I hold this transducer at each stage of insertion

FUTURE DIRECTION

Handheld electronic devices can be distributed to students to utilize in clinical for JITT. The devices will be included in the technology fee as a one-time fee. Colleges and universities will integrate use of JITT through technology into the syllabi and school's policy to maintain patient privacy. Each clinical group will receive a designated hashtag phrase to use in Twitter or the hospital's Intranet to receive clarification or feedback on a topic or task performed during clinical rotations, for example, students would follow #DU613clinrotation to ask questions and access links. The use of JITT can be enhanced by continued development of innovative teaching and learning mobile apps to support student education. Professional development opportunities should be available for faculty who are interested in how to integrate apps and social media as teaching/learning tools. Finally, universities and health care institutions should work together to expand policies related to state of the art teaching/learning strategies that can effectively provide clinical decision support to students and staff.

CONCLUSIONS

Cognitive Load Theory tells us:

- When the working memory has to process too much information it leads to poor comprehension and overwhelms the learner. The inability to recall and remember concepts leads to low performance
- Breaking educational concepts down into smaller bits of information that can be accessed when the learner needs it most, will assist in decreasing the students cognitive load and facilitate the movement of information from short to long term memory
- Just-In-Time-Teaching through the use of current technology and apps give educators the ability to target education based on the students needs so the quality of learning can be improved by supplying information when the student is most interested in learning

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