Example Conceptual Frameworks: To Guide Educational Scholarship

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Introduction
Conceptual frameworks are critical in scholarly medical education work. They guide formulation of research questions and curricular activities. Yet, educators are often at a loss when it comes to awareness and applications of conceptual frameworks. They are unfamiliar with them and are not sure how to use them and where to find them. The purpose of this booklet is to provide a range of examples of conceptual frameworks to help an educator become oriented to using frameworks and to peruse a sampling of ones often found in medical education.

Definition
Georges Bordage has argued strongly for the use of conceptual frameworks particularly in medical education research. In a 2009 article Bordage defines conceptual frameworks as representing "ways of thinking about a problem or a study, or ways of representing how complex things work the way they do. Different frameworks will emphasize different variables and outcomes, and their inter-relatedness." (p. 313)

Some conceptual frameworks derive from theories or are considered theories themselves. While Reeves and colleagues (2008) are speaking specifically about theories in qualitative research, they provide some nice definitions about the term theory. Perhaps this is more detail than many users of this booklet will want, but it is one resource to explore the topic of theory further.

Organization of Booklet

For each framework we provide a reference, brief description and cite an example in the medical education literature where the framework has been used. When applicable, we have grouped frameworks that address similar topics together. The final sheet contains some friendly tips for incorporating conceptual frameworks into your scholarly work.

Reference:
Bordage, G. (2009). Conceptual frameworks to illuminate and magnify. *Medical Education*, 43, 312-319.

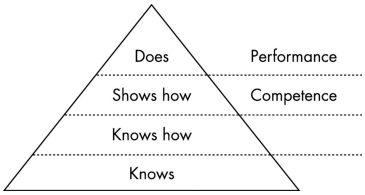
Resources for frameworks related to learning:
Ambrose, S.S., Bridges, M.W., DiPietro, M., Lovett, M.C., and Norman, M.K. *How learning works: Seven research-based principles for smart teaching*. Jossey-Bass: San Francisco, CA, 2010.

Reeves, S, Albert, M, Kuper, A, & Hodges, BD. (2008). Why use theories in qualitative research?. BMJ. British medical journal, 337, a949-a949.

Please search PubMed for Medical Teacher AMEE guides. There are 69 guides and many are related to theory.

Assessment

Miller's pyramid of assessing clinical competence



Miller provides a model for assessing clinical assessment at four levels. (1) The base of pyramid, *knows*, represents the knowledge components (basic facts) of competence. (2) The next level is *knows how* (applied knowledge) where the learner applies basic knowledge to problem-solve and to make clinical decisions. Both (1) and (2) can be assessed with multiple choice questions or oral exams. (3) Third level is *shows how* where the learner's performance is assessed *in vitro* with a standardized patient or OSCE. (4) The highest level, *does*, assesses the actual performance of the learner in a real clinical context. This level can be assessed by observation, or 360-degree physician performance assessment, or chart review, for instance.

Example: Meszaros et al. (2009) developed a progress assessment strategy informed by Miller's pyramid to determine whether pharmacy students are ready for "advanced pharmacy practice experiences." Their strategy included three components: a written case-based closed-book exam, a written open-book exam, and an OSCE. The closed book exam was designed to evaluate students' knowledge (level 1, *knows*). The open book exam was more complex and required interpretation of data and application of knowledge (level 2, *knows how*). The OSCE component simulated a patient consultation in a pharmacy where the student was expected to ask relevant questions or recommend appropriate medication (level 3, *shows how*). As the authors stated, the increasing complexity of the assessment "reflects how learning is progressing from lower levels (knowledge and comprehension) to higher levels (application, analysis, and synthesis)."

Comments This framework is increasingly questioned because its linear representation of the trajectory towards clinical expertise is likely an over-simplification. The model assumes that achieving competence at the lower levels in the pyramid is a necessary condition for achieving competence at the higher levels. Research has shown, however, that experts sometimes underperform on knowledge tests compared to novices. Also, Miller's pyramid is limited to the realm of the learner and fails to encompass the effect of learning on patient outcome or the organization at large. Finally, there is a dearth in valid and reliable measures for assessing "Does."

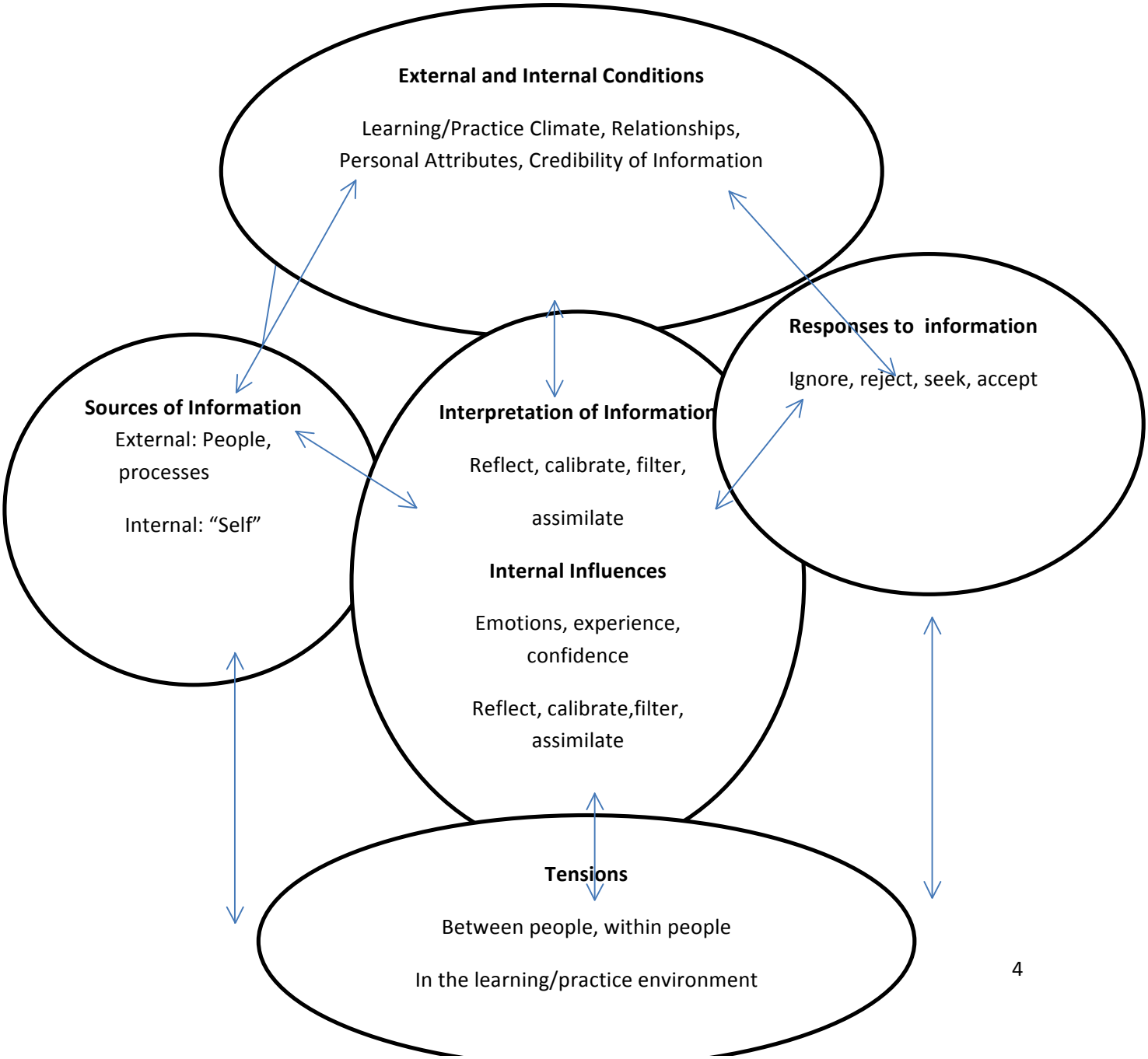
References

Miller, GE. The assessment of clinical skills/competence/performance. *Acad Med* 1990;65:563-67.

Meszaros et al . Progress examination for assessing students' readiness of advanced pharmacy practice experiences. Am J of Pharmaceutical Ed 2009;73:1-8.

Informed Self-Assessment

This model grew out of scholarship associated with understanding how physician learners use structured self- assessment in clinical learning and practice, and the components and processes that inform and influence self- assessment. Sargeant et al [The Processes and Dimensions of Informed Self-Assessment: A Conceptual Model. Academic Medicine 2010; 85 (7): 1212-1220] found that self-assessment is integrated into dynamic interrelationships and tensions that may help in understanding the variable accuracy associated with self-assessment. The model suggests that there is a need to pay attention to the conditions and tensions that the individual experiences and that influence her understanding of self-assessment and its role in self-directed learning and professional self-regulation. This model of Informed Self-Assessment depicts a dynamic, multidimensional, complex construct with interrelationships, tensions and influences that occurs over time and involves different clinical settings and access to data from a variety of sources.

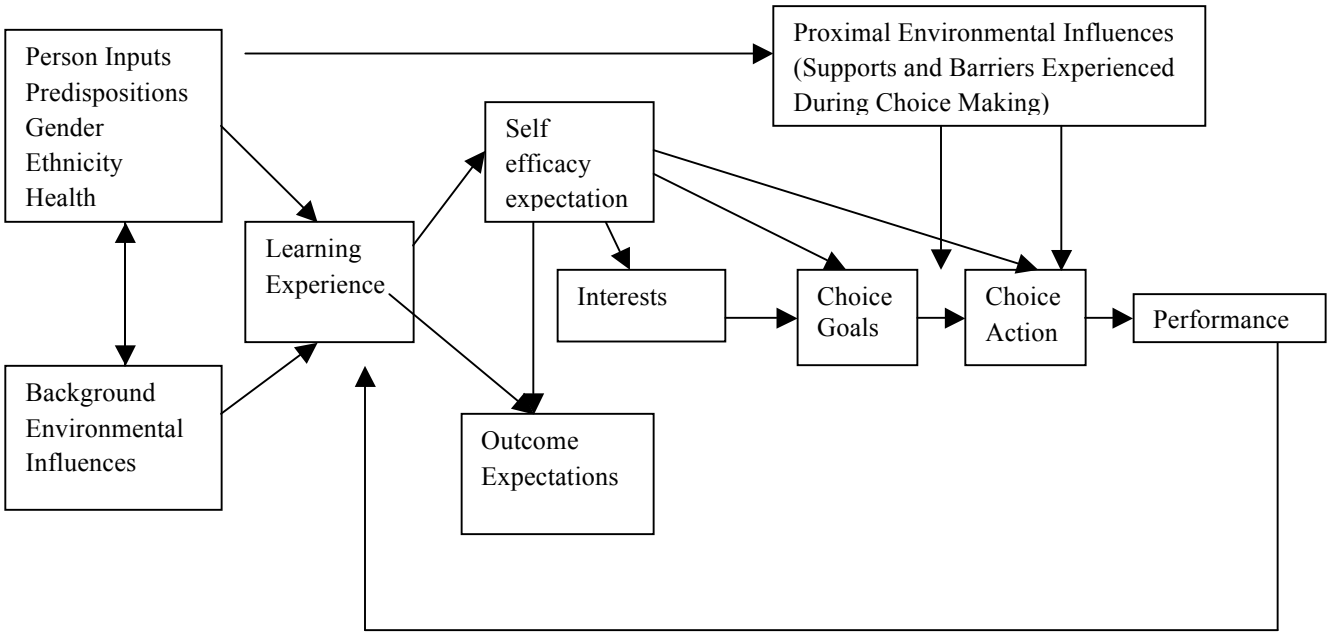


Career

Social Cognitive Career Theory

Lent, R. & Brown, S. (1996). Social cognitive approach to career development: an overview. *The Career Development Quarterly* 44: 310–321.
Lent, R., Brown, S. & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice and performance. *Journal of Vocational Behavior* 45: 79–122
Journal of Career Assessment 2006 14: 12
Lent, R. W. & and Brown, S. D. (2006) On Conceptualizing and Assessing Social Cognitive Constructs in Career Research: A Measurement Guide. *Journal of Career Assessment*, 14: 12-34

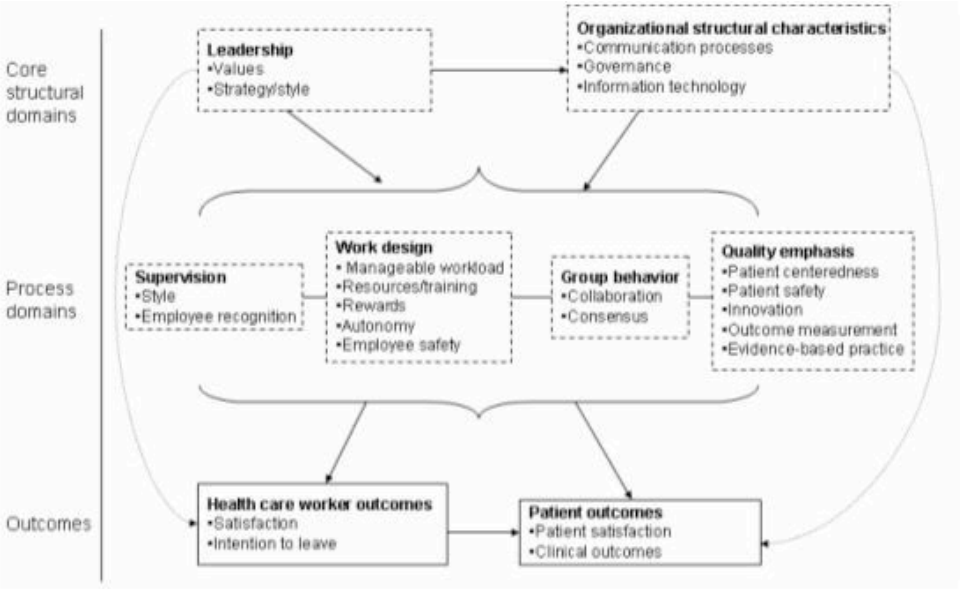
The Social Cognitive Career Theory (SCCT) extends Bandura's work in the social cognitive theory. In SCCT a variety of personal, contextual and behavior variables are considered in the development of one's career interest, abilities, goals and choices. Three key elements are self-efficacy (the ability to judge capability to organize and execute actions), outcome expectations (expected consequences of actions) and goals (intention to engage in a certain activity).



Example: Bakken LL, Byars-Winston A, Wang M-F. Viewing clinical research career development through the lens of social cognitive career theory. *Adv Hlth Sci Ed*. 2006;11:91-110.
Lori Bakken and colleagues applied this model to understand the success of various approaches when looking at the careers of clinical researchers. This article highlights many ways in which current programs have failed to address career development as suggested by SCCT.

The "Organizational Climate of Staff Working Conditions and Safety—An Integrative Model" grew out of a project that compared measures of organizational climate in ongoing patient safety studies, identified similarities and setting-specific dimensions, developed a model of climate domains hypothesized to affect outcomes across settings, and tested aspects of the model. Core climate domains included leadership (e.g., values) and organizational structural characteristics (e.g., communication processes and information technology), the impact of which was mediated by four process variables: supervision, group behavior (e.g., collaboration), quality emphasis (e.g., patient centeredness), and work design (e.g., staffing). These factors affect health care worker outcomes (e.g., satisfaction and intention to leave) and patient outcomes. Overall, the full model explained 24 to 65 percent of the variance in employee satisfaction, but was not as effective at predicting intention to leave. The model is intended to spur dialogue among researchers, inform agenda setting for future research into organizational climate and the safety of patients and health care employees, and facilitate cross-study quantification of associations among variables in these important domains.

Organizational Climate of Staff Working Conditions and Safety—An Integrative Model
Stone, PW, Harrison, MI, Feldman, P, Linzer, M, Peng, T, Roblin, D, Scott-Cawiezell, J, Warren, N, Williams, ES. Advances in Patient Safety: From Research to Implementation (Volume 2: Concepts and Methodology). IN Henriksen K, Battles JB, Marks ES, et al., editors. Rockville (MD): Agency for Healthcare Research and Quality (US); 2005 Feb.



Boxes outlined with dotted lines represent domains of organizational climate. Boxes outlined with solid lines represent outcomes. Core domains are in bold. Subconstructs are bulleted underneath. The dotted arrows connecting core structural domains represent direct effects on outcomes, which are mediated by the process domains.

Communication

SBAR Communication Model
Kaiser Permanente of Colorado. *SBAR Technique for Communication: A Situational Briefing Model.* Cambridge, MA: Institute for Healthcare Improvement; 2005.

Utilized extensively in medicine, and originating from the nuclear submarine service, SBAR stands for:
S – Situation: What is happening at the present time?
B – Background: What are the circumstances leading up to this situation?
A – Assessment: What do I think the problem is?
R – Recommendation: What should we do to correct the problem?

SBAR creates a shared mental model for effective information transfer by providing a standardized structure for concise factual communications among clinicians — nurse-to-nurse, doctor-to-doctor, or between nurse and doctor. Other tools like critical language, psychological safety, and effective leadership are central to providing safe care.

Four Habits Model

Frankel RM, Stein T, Krupat E. The Four Habits approach to effective clinical communication; 2003.

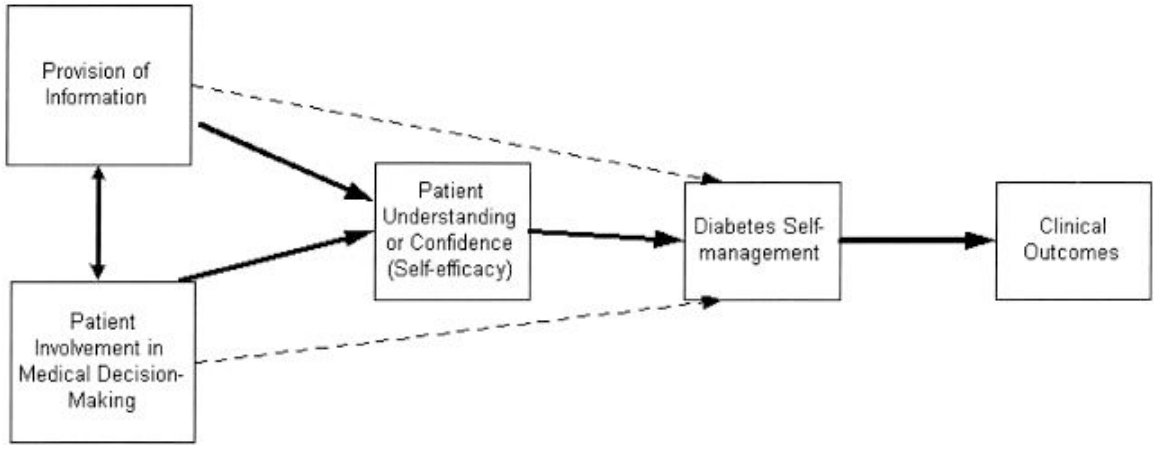
In this model, skills and behaviors, interview skills are organized into four main groups (habits); invest in the beginning of the encounter to create rapport and set an agenda (Habit I), elicit the patient's perspective (Habit II), demonstrate empathy to provide opportunity for patients to express emotional concerns (Habit III), and invest in the end to provide information and closure (Habit IV).

Frankel RM, Stein T. Getting the most out of the clinical encounter: the Four Habits model. J Med Pract Manage 2001;16:184–91.

Shared Decision Making: To facilitate patients' self-management of chronic disease, experts have called for care that incorporates **shared decision-making (SDM).** This model of care represents a "paradigm shift" in provider-patient interaction styles, with joint definition of problems, treatment goals, and management strategies. It is characterized by a substantial increase in provider communication and provision of information and an increase in patient involvement in medical decision-making. A team of researchers constructed and tested a conceptual model of SDM (below) to understand how/why SDM might result in greater patient satisfaction, adherence to treatment plans, and improved health outcomes (e.g., self-reported health status, emotional health, symptom relief, and physiological measures of disease control). The model both illustrates and provides a means of testing how components of SDM (Provision of information + Patient involvement in medical decision-making) influence patient understanding and self-efficacy as well as diabetes self-management resulting in (improved) clinical outcomes.

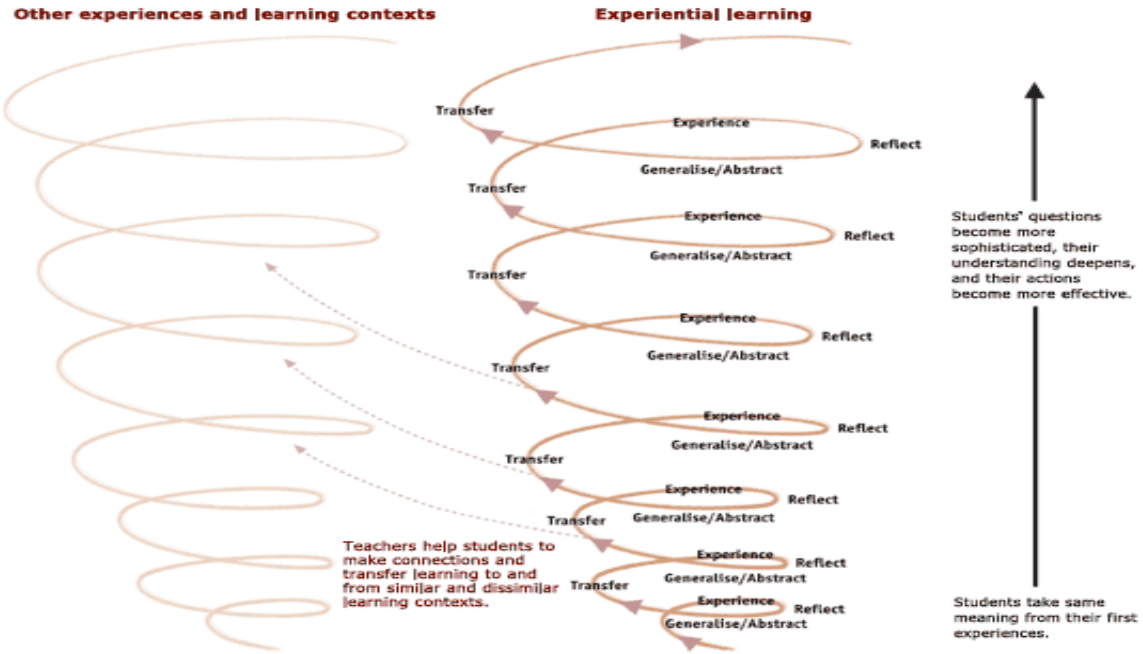
Heisler, M, Bouknight, RR, Hayward, RA, Smith, DM, Kerr, EA. The Relative Importance of Physician Communication, Participatory Decision Making, and Patient Understanding in Diabetes Self-management. JGIM 2002; 17:243-252.

Influence of SDM on Patient Understanding, Self-Efficacy, and Clinical Outcomes



Curriculum Development

Bruner introduced the **spiral curriculum** in 1960. A curriculum should revisit the basic ideas repeatedly, building upon them until the student has grasped the full formal apparatus that goes with them. The spiral curriculum iteratively revisits topics and concepts and with each subsequent encounter integrates progressively more challenging and complex information. A spiral curriculum allows topics to be reinforced; it supports planned progression from simple to complex levels of learning. It relies on integration of concepts and topics within a course or across courses and considers the logical sequence in introducing and revisiting topics. As the level of complexity increases, learners are assessed with application, synthesis and evaluation level skills that require them to demonstrate more than recall of knowledge.



Wilkerson et al. (2009) developed a pre-clerkship medical curriculum informed by spiral curriculum. The curriculum integrates biomedical sciences with clinical including planned and deliberately spaced repetition of concepts, in which progressively more complex and sequenced concepts are addressed. The curriculum includes a longitudinal and interative curriculuar structure integrating discipline based threads and system-based blocks. Strategies include small group PBL innovations, lectures to support learners and learning, formative assessments and feedback, integrated summative assessment, and self and peer teaching in laboratory sessions.

References

Bruner J. 1960. *The Process of Education* . Cambridge, MA: Harvard University Press.

Harden RM and Stamper, N. 1999. What is a spiral curriculum? *Med Teach* 21(2): 141-143.

Wilkerson L, Stevens CM and Krasne S. 2009. No content without context: Integrating basic, clinical and social sciences in a pre-clerkship curriculum. *Medical Teacher*; 3: 812-821.

A Six-Step Approach to Curriculum Development

Curriculum development requires a careful process. Kern and colleagues have succinctly summarized much of the approach to curriculum development in a six-step model. The steps are

1. Problem identification and general needs assessment
2. Targeted needs assessment
3. Goals and objectives
4. Educational strategies
5. Implementation
6. Evaluation and feedback

Often developers start mid-process around step 4 because of their enthusiasm for a way to teach certain content. This process can ensure that the development occurs in a logical way that indeed will meet identified needs. This model also clarifies that curriculum incorporates content, strategy and evaluation and that these components are not separate.

The paper by Shunk and colleagues referenced below used the Kern framework to develop a curriculum for quality improvement in an internal medicine residency program. The framework also provides a convenient method to organize the presentation of the curriculum.

References

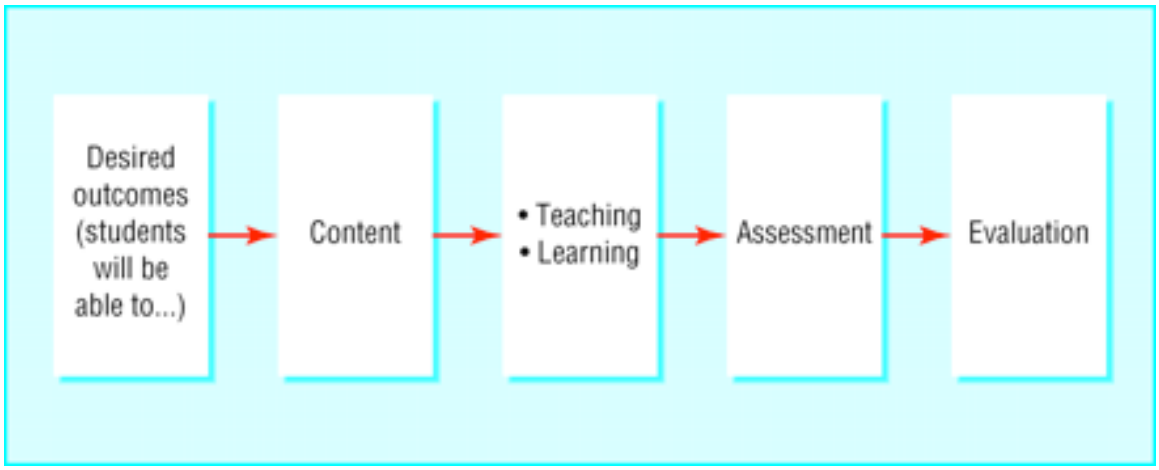
Kern, D. E., Thomas, P. A., & Hughes, M. T. (Eds). Curriculum development for medical education: a six step approach. Second Edition. Baltimore: The Johns Hopkins University Press, 2009.

Shunk, R., Dulay, M., Julian, K., Cornett, P., Kohlwes, J., Tarter, L., Hollander, H., O'Brien, B., & O' Sullivan, P. (2010). Using the ABIM Practice Improvement Modules to Teach Internal Medicine Residents Practice Improvement. Journal of Graduate Medical Education, 2, 90-95.

Curricular Evaluation

Outcomes Based Curriculum Model (Defining a curriculum backwards, or from desired outcome) An "Outcomes Based Curriculum Model" is one of many models educators can choose to guide construction of a curriculum. As illustrated, in the outcomes-based model, desired learner outcomes provide a means of selecting the content; teaching and learning experiences; assessment; and evaluation of a curriculum. The use of outcomes has the important effect of focusing curriculum designers on what the students will do rather than what faculty members do.

Prideaux, D. ABC of learning and teaching in medicine: Curriculum design. BMJ 2003; 326:268–70.



Curriculum reform and decision making processes

Incorporating concepts from institutional best practices and the evolution of scholarship in curriculum development, Bordage and Harris (2011) address three issues and offer practical advice in the design and reform of medical curricula**.**

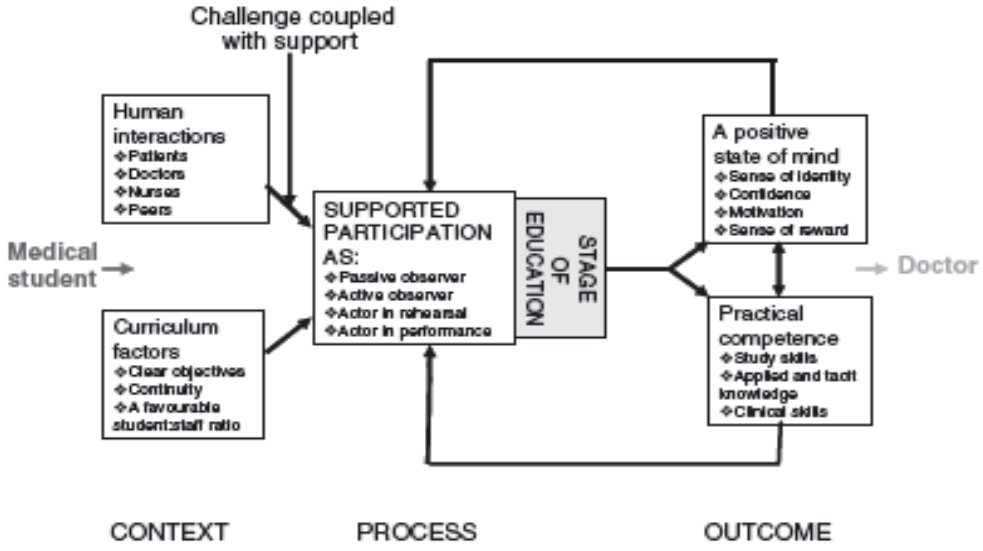
Bordage and Harris define curriculum as an entity comprised of five key elements: competencies to be acquired; learners; assessment; conditions for learning; and the socio-politico-cultural contexts in which learning occurs. Competencies are evolving and reflect the diverse needs of the medical profession and society. Learners have unique predispositions, prior knowledge and life experiences, expectations from faculty and the institution, and may be selected through processes designed to meet institutional goals. Conditions for learning include the content, instructional methods and strategies, instructional materials, learning sites, faculty, time, facilities, and health care teams and systems. Contexts for learning include role-modeling; institutional values, culture and politics; research and practice milieu; change; networking and collaboration; and socio-politico-economic forces.

- **Consider the whole, not simply the parts.** Individual curriculum changes affect other elements in the whole in both positive and negative ways. Curriculum design and innovations since the Flexner Report have tended to focus on parts of the complex system and have overlooked how other parts may influence the change and how the change may influence other parts.
- **Grounding the curriculum in theory or evidence.** Proposed reforms or curricular innovations need to be based on state of the art concepts and principles as well as any inferential evidence available from other fields. If there is no evidence, reforms should include sound theoretical or conceptual framework as well as a plan to evaluate the outcomes of the innovation both locally and for the field (Eva, 2008). An example of a curriculum planned considering theory in its development is one at McMaster University in which concepts of building new knowledge and concepts of prior knowledge guided the reform (Neville and Norman, 2007).
- **Use deliberative and leadership curriculum design processes to achieve input, buy-in, political support and education.**
  Bordage and Harris suggest five processes for curriculum deliberation.
  - Consider the existing curriculum and local circumstances.
  - Develop knowledge about effective processes of curriculum design including approaches to deliberation and decision making; systematic thinking about alignment of goals, instructional methods and assessment (Kern et al., 2009), and curriculum implementation, evaluation and renewal.
  - Become informed about current thinking about the nature of professional practice.
  - Consider perspectives from the national arena including those identified in journals as well as from international, national and regional professional meetings. An example given is innovative ways of thinking about integration through models of continuity of content, patient care and supervision (Hirsh et al., 2007).
  - Consider the informal and hidden curriculum in the institution.

Learning

Experience Based Learning

Dornan T, Boshuizen HP, King N, Scherpbier AJ. Experience-based learning: A model linking the processes and outcomes of medical students' workplace learning. Med Educ. 2007;41:84 – 91.



To reach their ultimate goal of helping patients, medical students must develop 2 qualities. One is practical competence; the other is a state of mind that includes confidence, motivation and a sense of professional identity. These 2 qualities reinforce one another. The core process of clinical workplace learning involves _participation in practice _, which evolves along a spectrum from passive observation to performance. Practitioners help students participate by being both supportive and challenging. The presentation of clear learning objectives and continuous periods of attachment that are as personal to the student(s) and practitioner(s) as possible to promote workplace learning.

Self-Regulated Learning is a "recursive, dynamic, and active process (see illustration below). Self-regulated learners are able to 1) set learning goals, 2) plan strategies to achieve their learning goals, 3) assess what they already know and what they need learn; 4) monitor their progress towards achieving their goal(s), 5) evaluate when they have achieved the goals they have set and 6) set new goals once their goals have been met. In medical education, there is much interest in developing physicians who are expert life-long learners. The model of self-regulated learning suggests that educators need to design learning opportunities for physicians that support their goal setting, monitoring, and reflection skills.

Woods, NN, Mylopoulos, M, Brydges, R. Informal self-regulated learning on a surgical rotation: uncovering student experiences in context. Advances in Health Sciences Education. e-Pub ahead of publication March 4, 2011. DOI 10.1007/s10459-011-9285-4

Self-regulated learning

Cognitive Load Theory

Initially developed in the 1980s, cognitive load theory provided instructional design principles using a model of human cognitive architecture broadly supported by research in cognitive psychology (Sweller, 1988). The basics of the theory posit that there's only so much new information the brain can process at one time. Human cognitive system has a limited working memory that can hold no more than 5 to 9 information elements and actively process no more than two to four elements simultaneously. There is a limit of approximately 20 seconds before information is lost unless it is refreshed or rehearsed. In this theory working memory capacity and its duration limitations only apply to new information. Working memory does not have similar limitations when retrieving information from long term memory. Long-term memory is related to time — how long something stays with us and we can access and use it. It's presumably limitless, but sometimes capricious and inaccessible. So the trick for trainers and instructional designers: provide instruction in such a way that learning in working memory can be moved to long-term memory where it will be called upon as needed. Long term memory holds schemas varying in their complexity and automation. In this theory human expertise comes from knowledge organized by these schemas held in long term memory, and not from an ability to engage in reasoning with many new elements that have not been organized in long term cognitive schemas or structures.

In this theory, expertise develops from combining simple ideas into more complex ones and storing them in schemas that are retrievable and accessible from working memory.

Why is this important to educators? Often educators, instructional designers and trainers overload learners, negatively affecting learning and learner motivation, and undercutting the main goal for educators. Understanding cognitive load theory depends on an understanding the concepts of working memory and long-term memory.

Working memory is a focus of cognitive load theory, and it may be affected by the nature of the learning tasks (intrinsic load), by the way in in which tasks are presented (extraneous load), and by the learning that occurs (germane load) when dealing with intrinsic load. Cognitive load theory assumes that intrinsic and extraneous load are additive. The theory is applicable to learners at different levels of expertise and should be managed considering the learners' background.

In their paper van Merrienboer and Sweller (2010) identify design principle with multiple strategies based on cognitive load theory to 'prevent overload and to optimize germane load to improve learning." In their paper, the authors provide a table with principles, descriptors and illustrative examples.

Sweller J. Cognitive load during problem solving: effects on learning. Cognitive Science 1988; 12: 257-285.

Deliberate Practice and Acquisition of Expert Performance

In this framework, Ericsson identifies a model for acquisition of performance expertise associated with engagement in deliberate practice. In this framework, continued deliberate practice is necessary for maintenance of expert level performance. Traditionally, professional expertise has been assessed by other criteria: years of experience, professional reputation, and perceived mastery of knowledge and skill. Observed performance does not always correlate with greater professional experience. Active engagement in deliberate practice is related to expect performance. Deliberate practice includes training focused on improving performance on narrow or specific tasks; these tasks may be chosen by the teacher or coach. Deliberate practice includes provision of immediate feedback, time for problem solving and evaluation, and opportunities for repeated performance to refine behavior. Best training for expert performance and its acquisition includes short duration activities with opportunity for immediate feedback, reflection, and corrections. This short activity should be repeated until this task is routinely completed with success. Then Ericsson considers the task to be mastered as a stand alone. At this point he advocates that the task be embedded in more complex contexts and alternated with other cases until the skill is integrated into the "performer's repertoire."

1. Deliberate practice is mentally demanding, and requires focus and concentration. Ericsson also stresses that you have to be "fully absorbed" in your practice for it to truly be effective.
2. It is designed specifically to improve performance—to strengthen it beyond its current levels. The time spent in practice must be directed at focused improvement. Just putting in time will not lead to significant improvement; in deliberate practice, the learner must consistently stretch him or herself.
3. It must continue for long of periods of time. Ericsson references 10,000 hours/10 years of deliberate practice to become a chess master, to become a virtuoso musician, and to become an expert performer in a sport.
4. It must be repeated. Even though repetition alone does not ensure that you will get to the level of excellence, you also won't get there without out it. Practice is necessary for acquisition of expertise but not sufficient.
5. It requires continuous feedback on results. Sometimes the learner can tell whether he or she is doing things right (informed self-assessment). Ericsson stresses the importance of obtaining feedback from a great teacher, coach, or mentor who provides guidance on selected challenges in areas in which the learner needs to improve.
6. Pre-performance preparation is essential. This is where goal setting comes in and learners need to identify what they hope to achieve to develop appropriate plans to meet their goals.
7. It involves self-observation and self-reflection. As the learner practices, he or she needs to be continually aware of her performance and focused on correcting and adapting it appropriately. Use of in-the-moment self-assessment is critical regardless of whether a teacher is involved (again, informed self-assessment).

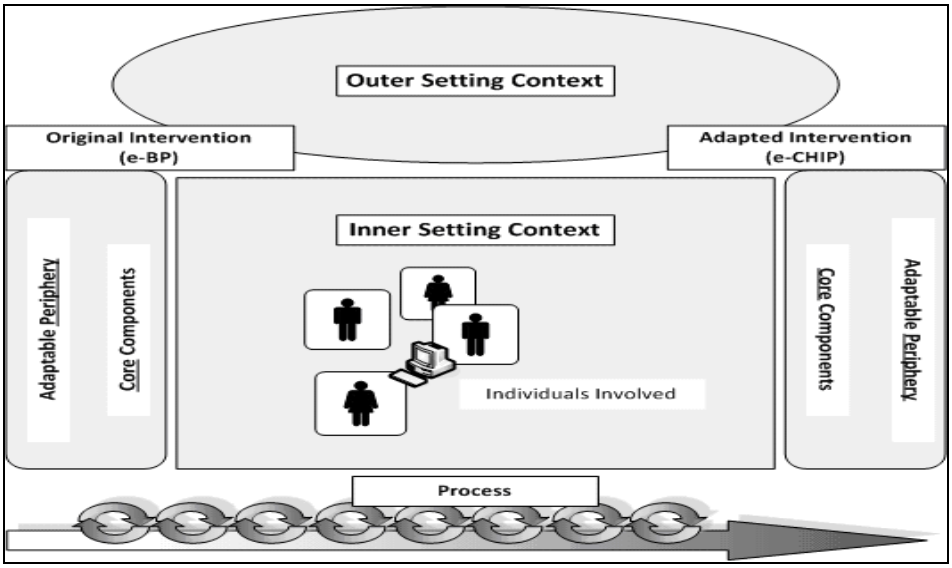
8. It involves careful reflection on performance *after* practice sessions are completed. earners need to reflect after they have completed practice and assess where they stand with respect to overall goals. Here is where they can identify what they might change the next time they practice to ensure ongoing progress?

Ericsson KA. Deliberate Practice and Acquisition of Expert Performance: A General Overview. Academic Emergency Medicine 2008; 15: 988-994

Implementation Science

Many interventions found to be effective in health services research studies fail to translate into meaningful patient care outcomes across multiple contexts. Health services researchers recognize the need to evaluate not only summative outcomes but also formative outcomes to assess the extent to which implementation is effective in a specific setting, prolongs sustainability, and promotes dissemination into other settings. The **Consolidated Framework For Implementation Research (CFIR)** was developed to consolidate multiple overlapping conceptual theories and empirical studies of key constructs related to implementation. The CFIR model identifies five major domains that help to explain the barriers/faciltators to successful implementation: the intervention characteristics (e.g., evidence strength and quality), the outer setting (e.g., patient needs and resources), the inner setting (e.g., culture, leadership engagement), individual characteristics, and process (e.g., plan, evaluate, and reflect).

Damschroder, LJ, Aron, DC, Keith, RE, Kirsh, SR, Alexander, JA, Lowery, JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implementation Science, 2009. 4:50 doi:10.1186/1748-5908-4-50.

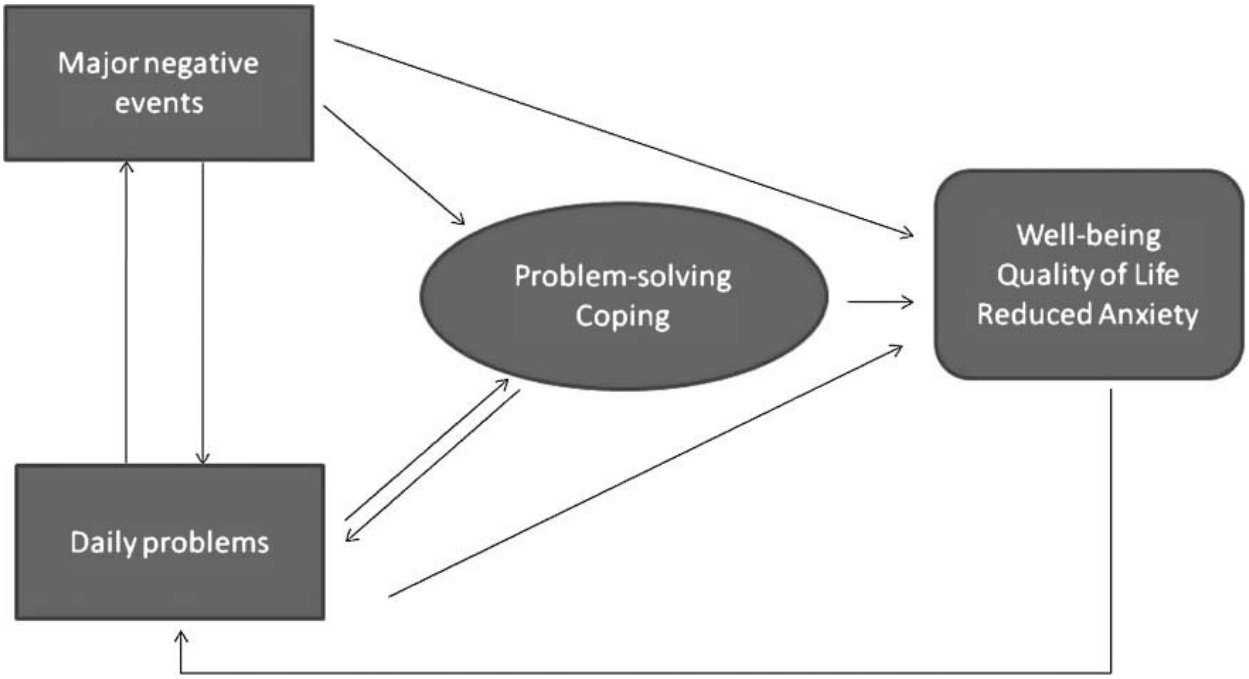


Well-being

Relational Problem Solving Model of Stress

D'Zurilla TJ, Nezu AM: Problem Solving Therapy. A Positive Approach to Clinical Intervention. 3rd ed. New York: Springer Publishing Company, 2007

In the expanded relational/problem-solving model, stress is viewed as a function of the reciprocal relations among stressful life events, emotional stress responses, and problem-solving coping. Stressful life events are life experiences that present a person with strong demands for personal, social, or biologic readjustment. Two types of stressful life events are major negative events and daily problems. Regardless of what goals are set, the ultimate expected outcome of problem solving is to reduce and minimize the negative effects of stressful life events on wellbeing and quality of life.



Conceptual Framework Tips Sheet

1) **How do I find a relevant framework**
    a. **Literature search – read papers that address a similar concept, problem, phenomenon**
        i. **start within your field,**
        ii. **then go to similar experiences**
        iii. **go outside of medicine**
        iv. **Look for thematic reviews or other lit reviews**
        v. **Follow interesting papers or frameworks forward to find others who have cited them**
    b. **Consult with educators / researchers for their advice**

2) **What if I can't find an appropriate framework?**
    a. **Make sure that you are confident that NOTHING applies.**
    b. **Build your own framework by linking concepts in a model that the literature supports**

3) **When do I bring in the framework? How much should it drive my study**
    a. **If you have a framework that you are applying, then bring it into the introduction.**
    b. **If you are trying to develop a framework, then it will come into the discussion as a result of your study.**

4) **What if I already started my study and didn't have a framework?**
    a. **Often you have followed a logical path that can fit existing frameworks. Find one that can accommodate what you have done**
    b. **Recognize this is not the strongest position to be in!**

5) **How do I incorporate the framework into my intro and my discussion?**
    a. **In the introduction the framework usually flows from the key literature and before the purpose statement**
    b. **In the discussion after the initial summary it is important to describe how your findings support or fail to support the framework. Thus the framework can be a substantive amount of the discussion**

6) **How deeply do I have to read about a conceptual framework?**
    a. **It shows in a manuscript if you have failed to sufficiently understand your framework. It will feel as if you just "threw it in."**
    b. **Make sure to read a seminal work, a review article and some of the most recent applications.**