From 'Effortful Use' to 'Contextual Improvisation': Skill Acquisition Theory and Program Planning

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Abstract: This paper brings together two bodies of theoretical work—program planning and skill acquisition—to suggest a new way to think about how adult educators become expert program planners. It proposes a developmental process involved in moving from novice to expert.

Background

During the past 70 years, dozens of models, theories and frameworks have been produced with the intention to help practitioners both understand and engage in the process of planning programs for adult learners (Sork, 2010). Many of these are rooted in an epistemology of "technical rationality" with its attendant assumptions about how we come to know and how expertise is developed. Schön (1983, 1987) and Wilson and Cervero (1997), among others, have pointed out the limitations of technical rationality as a foundation for professional practice. Their critiques came at a time when there was growing awareness that becoming an "expert" practitioner was much more complicated than suggested by the then-dominant models of professional preparation.

While Schön's work was influencing many professions, Dreyfus and Dreyfus (1980, 1985) were reporting research that suggested a complex process was involved in moving from novice to expert. In a brief report prepared for the US Air Force Office of Scientific Research (1980), they proposed a five-stage model of skill development based on the study of foreign language acquisition, chess learning and flight instruction. In writing that incorporates what they have learned since 1980 and the work of other researchers, Dreyfus and Dreyfus (2009) refined their model to include the following five stages of proficiency: novice, advanced beginner, competence, proficient and expert.

Benner et al. (2009) applied the Dreyfus and Dreyfus model to nursing and confirmed a similar developmental process as nurses move through initial training, early clinical placements and, eventually, become expert clinicians. One way of characterizing the movement from novice to expert is to say that a novice makes "effortful use" of the knowledge gained through pre-service education while experts engage in "contextual improvisation" during which they often ignore or disregard formalized knowledge and rely more on intuitive problem solving that is heavily influenced by the specific features of the context. Only one application of the novice to expert model has been found in adult education and that is the study by Daley (1999) which also focused on nurses.

The purpose of the study on which this summary is based was to bring together two bodies of theoretical work—program planning and skill acquisition—to suggest a new way to think about how adult educators become expert program planners. This is accomplished by suggesting evidence that supports a stage-based, developmental process involved in moving from novice to expert and then relating that to a sampling of conceptual, theoretical and procedural literature on program planning.

Program Planning as a Core Competency

In the US and Canada, program planning has historically been regarded as an essential component in programs that prepare adult educators. Evidence for this is found in the *Standards for Graduate Programs in Adult Education* (CPAE, 2014) which lists "curriculum and program planning" as a core topical area, in the curricula of universities that offer credentials in adult education, and in the literature (Sork, 2010). The way this component is often addressed is through a single required course although it may also be incorporated into a course with a broader focus. There has not been a recent study of how these courses approach the topic, but anecdotal evidence suggests they expose students to various planning theories, models, and frameworks; to some of the research on program planning; and may require students to "apply" a planning model in an assignment to produce a plan for a program.

It seems doubtful that any more attention is given to program planning within preparation programs other than the possible addition of experience gained through an internship or practicum placement. However, the typical master's program in North America does not require an internship or practicum placement so students may have only their experiential background—or current workplace—to draw on to test the theories/concepts/ideas they learn, and "practice" and refine their planning skills. This form of preparation for practice is very different from professions like nursing and teaching where skill acquisition is a multi-step process involving required, supervised placements in a practice setting, the generation of substantive evaluative feedback and, eventually, certification to practice.

Outside of North America, program planning is only occasionally regarded as a core competency. For example, various competency frameworks for "adult learning professionals" in Europe occasionally mention program planning/design or instructional planning but the language used suggests a focus on designing instruction or becoming a skilled teacher/facilitator. These are important elements of practice but only part of planning as conceived in the US and Canada (Käpplinger & Sork, 2014; Buiskool et al., 2010). In countries such as Germany, practitioner preparation programs are more often at the undergraduate level and, at most universities that offer an adult education qualification, include attention to program planning.

Becoming an Expert Program Planner

If we accept the accumulated evidence that becoming expert involves moving through several stages and that those stages can be characterized in terms of the way experts-in-the-making engage with practice, then it should be possible to propose some testable propositions related to becoming an expert program planner. So here is a somewhat speculative overview of how the five-stage model of skill acquisition (Dreyfus & Dreyfus, 2009) might be applied to program planning.

Stage 1: Novice. Novices are new to the knowledge base and underlying values of the area and have little or no practical experience to which they can relate what they are learning. It could be argued that, at least in Canada and the US where the study of adult education is largely at the master's level, many students bring with them a relevant experiential base. Some programs require at least a modicum of experience as a criterion for admission. So in this sense, many who begin the formal study of adult education may not quite fit this stage. But assuming they possess either very limited or marginally-relevant experience, we can expect those at this stage to seek well-defined and more or less universal principles and processes to guide practice. They do not necessarily recognize or relate to the highly-contextual nature of adult education and may be troubled when they realize that what some might refer to as the "principles of adult education"

(or of andragogy, if you wish) are largely idealized assumptions that may or may not hold in specific contexts.

Those at the novice stage are reassured by literature and instruction that presents program planning as a linear, step-wise process with a clear beginning, well-defined processes, and a clear ending. Most critical planning literature recognizes the limits of models that represent planning in this way, but encountering the indeterminant nature of the field and of planning could certainly be unnerving or disconcerting to the novice.

Stage 2: Advanced Beginner. Students who enter a preparation program with substantial relevant work experience and some exposure to the professional literature might actually begin at this stage. Their experience might be limited to a specific context so the realization that there are many varied contexts in adult education—often reflected in student introductions when classes first meet—can be a bit disorienting. Attaining this stage requires "considerable experience coping with real situations" (Dreyfus & Dreyfus, 2009, p. 11). If students are currently employed or have deep experience to which they can relate what they learn, then they might attain and move through this stage quickly.

Advanced beginners will be more open to, and less distressed by, situational or contextual factors that influence decisions about practice but the increased sense of complexity might be overwhelming.

> *Through practical experience in concrete situations with meaningful elements that neither the instructor nor student can define in terms of objective features, the advanced beginner intuitively starts to recognize these elements when they are present….With the addition of many new elements now known by the learner to be relevant to the skill, the task appears to become more difficult, and the advanced beginner often feels overwhelmed by the complexity of the skill and exhausted by the effort required to notice all relevant elements and remember an increasing number of more and more complicated rules.* (p. 11)

An example of problematizing planning ("complexifying" planning, if you will) is introducing the debates about the concept of need and how it is a value-infused, social construction rather than an objectively-verifiable state of being (Ayers, 2010)

Stage 3: Competence. To achieve competence from the stresses of Stage 2, learners begin to make order out of the apparent chaos and confusion. They begin to select perspectives, principles and ways of being that work for them and start to define a coherent, personal approach to practice.

> *The competent performer must devise new rules and reasoning procedures for the chosen plan or perspective determination so that learned rules for actions based on relevant facts can then be applied. These rules are not as easily come by as the rule given beginners in texts and lectures. The problem is that there are a vast number of different situations that the learner may encounter, many differing from each other in subtle, nuanced ways, and in each a plan or perspective must be determined.* (p. 12)

Case studies of complex planning situations have been used effectively by Cervero and Wilson (2006), among others, to illustrate how to "read" the context and make

decisions about how best to proceed based on its unique observed features. The ability to "read" the context and act upon it—especially embedded power relations and interests of the participants—seems to be an essential factor in achieving competence in planning.

Stage 4: Proficient. Becoming proficient involves learning what seems to work well and what does not and incorporating that knowledge into ones practice of the skill. Practice, in this sense, becomes less about following prescribed rules or principles and more about developing an intuitive sense of the best action to take.

> *Action becomes easier and less stressful as the learner simply sees what needs to be achieved rather than deciding, by a calculative procedure, which of several possible alternatives should be selected. There is less doubt that what one is trying to accomplish is appropriate when the goal is simply obvious rather than the winner of a complex competition.* (Dreyfus & Dreyfus, 2009, p. 14)

Although more intuitive than "calculative," proficient practice seems to require a rich repertoire of potentially useful actions from which to draw depending on the features of the specific situation encountered. This seems to support the idea that planners may be able to adapt their planning style in response to features of the context—particularly power relations—as suggested by Yang and Cervero (2001). The degree to which proficient planners are able and willing to adapt their planning style is unknown, but it seems clear that becoming proficient involves relying less on structured decision making and more on what has worked and what has not in a given situation.

Stage 5: Expert. I refer in the title of this paper to "contextual improvisation" which seems like a good way to characterize the approach of those considered experts.

> *The expert not only knows what needs to be achieved, based on mature and practiced situational discrimination, but also knows how to achieve the goal. A more subtle and refined discrimination ability is what distinguishes the expert from the proficient performer. This ability allows the expert to discriminate among situations all seen as similar with respect to the plan or perspective, distinguishing those situations requiring one action from those demanding another.* (Dreyfus & Dreyfus, 2009, p. 15)

It is somewhat reassuring that becoming an expert planner in adult education seems to require considerable experience and reflection outside of a university preparation program. We know little through research about how those who enroll in our programs move through these stages prior to, during and following their time with us. It is a feature of our field that there are no certification or licensure standards or competency frameworks that many other occupations and professions use to assess, in part, the impact and outcomes of preparation programs. It is also a pity that we don't have more data on how well our programs prepare practitioners for the challenges they face, especially in this time of "wicked problems" that require the attention of expert program planners.

Sorry…No One-Way Tickets to Expertise

One limitation to stage-based and developmental frameworks is they suggest moving through the stages or phases is a one-way journey. It should be obvious that this is not the case with skill acquisition—that expertise can be fleeting due to changes in the context of practice, changes in technology, the knowledge base, value shifts in society, learner expectations and so on. It is increasingly difficult to achieve and maintain expertise as a program planner in the face of transformative changes in how people communicate, in the amazing variety of resources available to learners online, and in the use of virtual and augmented reality for learning, among others. It is unclear how "transferable" the attributes of the "expert" are in the face of rapid changes to the educational landscape, but anyone who feels they have achieved this stage should expect to work very hard to maintain it.

The Urgent Need for Planning Expertise

This attempt to link skill acquisition theory with program planning is potentially useful because it makes more concrete and testable the claim made by Sork (2010) that becoming a capable planner is a developmental process wherein novices rely on practical, step-by-step, concrete models of planning that do not assume high degrees of contextual complexity while experts rely much less—or not at all—on such models. Testing this claim is important because it has implications for how adult educators become expert planners—both initially as novices and later as they move through the stages of skill acquisition in practice.

There are many serious global challenges facing humanity that can only be successfully addressed through bold, large-scale, inclusive and transformative learning experiences. Producing these will require highly skilled educators who are expert program planners. Without a better understanding of the process involved in becoming an expert planner, our field may not be able to fulfil its proper role in addressing the challenges reflected in, for example, the United Nation's *Sustainable Development Goals* (SDGs) (UN, 2015), the various reports of the UN's Intergovernmental Panel on Climate Change (https://www.ipcc.ch/about/), and in sobering books such as *Adult Education and the Planetary Condition* (Harju & Heikkinen, 2016).

Addressing the many vexing, wicked problems we are currently experiencing requires committed, expert planners who are willing to fully employ their talents for "contextual improvisation" to help ensure we learn our way out of this very dangerous era.

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