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Backward Design as a Way Forward

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It seems so simple; before beginning a journey most individuals know (or at least have a solid idea) the destination. When going on a vacation, it would seem ridiculous to pack a suitcase and head out the door with no idea as to which direction to travel or what specific supplies may be needed during the excursion. Typically, we start thinking about a vacation with a given outcome in mind, perhaps to relax or to see new sights. From there we look for potential destinations that meet our expectation. If relaxation is the expressed purpose of the trip then a wooded retreat or an isolated beach hut may be identified. If seeking adventure, perhaps a mountain trek or walking a section of the Great Wall of China would be selected as the destination. Only after we define where or why we are going, do we turn our thoughts about the details of how to get there and what to pack. The vacation naturally begins with the destination in mind. This notion is very much applicable to our professional lives as we fulfill our roles in classroom instruction, disciplinary research, or clinical practice.

Focus Your Intention on the End Goal

Instruction, research, and clinical practice benefits greatly from this same planning framework: beginning with the end in mind. Within the discipline of education this foundational concept is called Backward Design, first described by Wiggins and

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McTighe (2012). The idea, much like the vacation example, is relatively straightforward. What do you intend to accomplish? How will you reach that goal? First, an outcome is identified this may be a long-term goal (e.g., end of course objective), mid-range goal (e.g., end of unit goal), or a short-term goal (e.g., end of lecture). In the case of teaching, the goal may be for students to better understand and be able to list the levels of Bloom's Cognitive Taxonomy (Anderson & Krathwohl, 2001). In research, the goal or outcome is often thought of as the hypothesis or research question. In clinical practice, the treatment goal is patient-centered and identifies a long-term goal as well as short-term goal(s). For example, the long-term goal may be to restore or maintain a defined state of health across time and the short-term goal(s) moves the patient towards that end. In all cases the process is the same, we begin defining what we will do based defining what the desired outcome as the starting point.

“Are We There Yet?”

No one likes to hear the dreaded phrase “are we there, yet?” Sometimes our travel companions may truly not know if we have arrived to our destination or perhaps they are indicating that they are bored or they may have lost confidence in you as the guide. In any case, we need to avoid such discontentment or lack of confidence by clearly defining the destination. This second step of backward design addresses how to clearly define that you have reached your goal. Regardless of which area you are addressing, each and every goal should be measurable. That is, it is important to demonstrate how the goal has been achieved.

Many examples of classroom assessment techniques exist that allows you to measure if the students are progressing towards achieving course goals. Applications of CATS, Clickers, quizzes, and other strategies can measure whether students are on task and grasping the material during the real-time of the lecture. In research, statistical analysis, and power can be used for quantitative measures to accept or reject the hypothesis; for qualitative data the elements of saturation and elasticity may define the realm of knowing that the research question has been answered. For clinical practice, the health provider examines objective data such as weight, laboratory values, range of motion, or subjective measures such as self-report of improvement of pain or nausea as measures of the state of health. The point here is to identify a predetermined objective measure to demonstrate when the goal, or outcome, is achieved within a stated timeframe.

By stating what the goal is, how it will be measured, and when it will be reached –



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everyone is better able to work towards that common goal. And there is no need to ask, “Are we there, yet?”

Keeping Your Eye on the Prize

The final step in Backward design is to determine the actual process and strategies you will implement to achieve the stated outcome.

Backward design was developed in response to the common approach of implementing some process and expecting anticipated

outcomes to materialize. Missing in the old approach is the consideration given to the goal before starting the process. Such an approach often results in failure as there is no specified end state, or outcome.



Classroom instruction offers a variety of approaches to reach any given classroom or course goal. The content within a course may be delivered in multiple ways, assignments can be designed to provide the students opportunities to enrich their learning through projects, papers, volunteerism, or service-learning. There are also a plethora of quick engagement techniques that may be used in just about any class session (Major, Harris, & Zakrajsek, 2016). The process of how a research question is answered is driven by its research design. In the facets of research and clinical practice, the literature also offers many guidelines. Within clinical practice, standards of care will drive patient outcomes.

Summary

Backward Design is a method that can improve our teaching, research and clinical practice. If you do not currently think in terms of backward design, please consider applying it as you plan a single lesson plan or student assignment. It is an important professional step that enriches your teaching. It is never easy to change our habits and assumptions but over time backward design is relatively easy to implement. It just takes practice in the three critical steps. (1) Identify what you will see or experience if the desired outcome is realized. (2) Determine how you will know if you were successful. (3) select the best path to give you the greatest probability of success in reaching the desired outcome. Overall, the key is to resist the urge to “get started,” before you know where you are headed.

Backward design has been used extensively over the past decade in many education and health-related areas. Dolan and Collins (2015) identified backward design as one of four effective educational practices a recent article about research on how people learn. In an article about effective teaching online, Millery, Hall, Eisman, and Murrman (2014) state the importance of including “principles of programmatic design familiar to public health professionals, such as backward design” when developing new educational experiences. This approach of starting with the end in mind is showing up more and more frequently in discussions of team-based learning, curriculum design, effective teaching, clinical practice, and numerous other areas. Backward design is a foundational aspect of education and practice. If you are not an active practitioner of this approach, it is well worth implementing.

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