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The Guitar-Maker: Model Education

This issue of *Advances in Chronic Kidney Disease* is dedicated to the nephrological education of medical learners of all types as well as patients. Guest editors Campbell, Sturdivant, and Ullian present a group of authors who yield some answers to the questions each author poses. However, as anticipated, the reader may formulate more questions than answers, and that is not a bad thing because that is how we learn. As medical information and the ways to obtain it increase at rates that are far beyond anyone's capacity to appreciate, much less absorb them, one must be selective, for it is this selectivity that ultimately determines the depth to which one learns a concept. Selectivity presupposes content expertise. To learn something today seems to involve multitasking, but this idea may be confounded by the fact that there are so many choices to learn from as well as different types of learners: auditory, visual, and kinesthetic. Most nephrologists embody all 3 types.

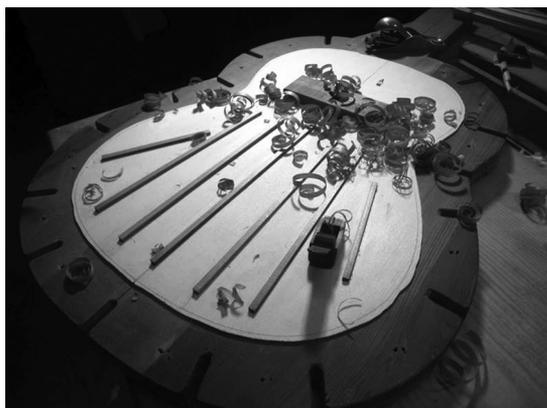


Figure 1. Flamenco guitar soundboard bracing is contoured to optimal shape and stiffness. The guitar-maker must exercise good judgment, guided by experience, and know just when to stop. Since wood varies in mass and stiffness tremendously, dimensions alone are a poor guide. A luthier must strive to achieve a certain balance, which is inherently variable from one instrument to the next. One-size-fits-all is not an option when working with guitars.

An apprentice-son, while learning the art of flamenco guitar-making from his father, pressingly inveighed that the two of them could produce instruments at double their rate. That would certainly be more efficient and profitable, the son proffered. His father, truly one who was venerated in the art, neither raising his head nor pausing in the ply of his painstaking technique, mildly retorted: "You must slow down, so that you can speed up" (Fig 1). This maxim brought to mind similarly measured intonations, albeit warnings, by my father: "If you want to learn, isolate, listen, focus, concentrate, and then create." Are these time-worn precepts yet true today? As educators and learners of kidney disease, this question is of vital importance because the delivery of expert content is no longer privilege but expectation for those we are charged to educate—namely, students, residents, fellows, and our peers and colleagues. To become a master guitar-maker, the apprentice had to listen raptly to vocal instructions (auditory), see how to do it (visual), and play the guitar (kinesthetic). Recently, the words of the guitar-maker were echoed by Professor Sherry Turkle, author of "Alone Together: Why We Expect More From Technology and Less From Each Other."¹

Distance learning, now *de rigueur*, has been inculcated and integrated into nearly all facets of education, from basic knowledge acquisition to the graduate-level curriculum. The well-traveled and vaunted live speaker of stentorian tone, skilled in rhetoric, may correspondingly find little work in the future, falling in disfavor to The Khan Academy² and/or small feedings of the mind via blogs and social media. In fact, with today's million-dollar presentation systems, the speaker can be prerecorded absent audience and virtualized, presenting right- or left-handedly, depending on lectern location,

with no lip-syncing required. It remains unanswered though as to whether distance learning, embraced by the new generation of learners who have been incubated in an electronic environment, makes for better learning. Research in this area will hopefully provide answers soon. Nevertheless, it is a *fait accompli* that this type of education will grow and become more prominent. If nothing else, it is eminently modifiable, extensible, and distributable.

As an omnipresent yet evolving medium, the Internet can fully provide all and more of the content that one can learn, but the bottom line is whether this is truly assimilated—learned—and translated into meaningful use, such as a “teachable moment,” optimized data analysis, or a well-timed therapy. Importantly, the precept of distance learning was never meant to preclude perhaps the most important component of learning, self-isolation, and the rewards that flow from it, imagination and unfettered thought. As medical educators, our job remains the same as it has for centuries. However, as patient-educators, we must generate and perpetuate enriched, high-quality content; filter through a morass of materials to focus our patient-learners; and deliver small, iterative, compelling conceptions that use auditory, visual, and kinesthetic modes of action.

In one area we surely must slow down to do better, and that is in the area of kidney education for those individuals with acute or chronic illness. For all of the printed materials and websites dedicated to our profession and patients, there are miniscule data regarding how well we educate our patients. Interventions without engaged, bipartite learning strategies between kidney health-care workers and those that they serve are doomed to failure. Exploratory attempts at defining the foundations of learning by our patients have come to light recently,³⁻⁵ but the success of such endeavors may ultimately be tempered by the cognitive impairment that compounds the health of many CKD patients.⁶ Aside from cognitive deficit(s), a low education level may impact health outcomes in CKD. Khattak and colleagues evaluated this association in ESRD patients.⁷ These investigators compared those with less than 12 years of education, 12 years of education (high school), some college, and college graduates. Patients with less than 12 years of education (referent) had increased mortality in comparison to those who graduated from high school and beyond.

As nephrologists, we have learned how to learn quite well. Moreover, we have also established ourselves as excellent teachers and purveyors of knowledge at our own level. However, success in a patient-centered world is ultimately determined by those knee-to-knee interactions with our constituents. How this is accomplished is vitally important because adequate access to care and education have translated into better clinical outcomes. Appropriately contextualized patient education will likely lead to more home dialytic care, fewer emergent inpatient

initiations of hemodialysis, and fewer episodes of catheter-related sepsis. The ultimate logistic is knowledge transmission to the patient in a recognizably defined format, which the patient and his/her family can understand, acknowledge, recollect, read back, and refer to, at a later point in time. The ultimate metric is how well this is done—performance counts. The health literacy and social network of the patient play profoundly in these dynamic knowledge transactions. Therefore, processes to address the health literacy needs of all patients with CKD must be broadly implemented, with customization at points of distribution. These solutions must be skillfully integrated into the fabric of individual kidney health care enterprises, in order to preclude denigration by inefficient implementation. In addition, as a critical component of evaluating performance in action, we must assess the impact of the “solutions” on outcomes, both intermediate and long-term.

Because there have been few instances of rousing and widespread success in kidney patient education, the time has come for “disruptive innovation”, as extolled by Clayton Christensen.⁸ This does not mean “a change in key” of what we may consider our melodious practices of medicine, but rather a sustained and serious dissonance of chords, the target of which is the patient. It is a message that must be incredibly close and extremely loud. As the management educator Peter Drucker once said: “The customer rarely buys what the company thinks it is selling him.” The contingencies for success include autonomous thinking, organizational architecture, componentization and optimization of processes, resource allocation, quantifying not qualifying performance metrics, and competency testing (the patients grade you, too) as well as continuous quality improvement of each process.⁹ Two Japanese words swiftly come to mind. The first is *kaizen*—philosophy of continuous advancement(s), and the second is *monozukuri*—the art of creation.⁸

Mies van der Rohe has been misattributed with saying “less is more.” However, when educating patients about their kidney disease, after appropriate visioning and time-horizon setting, is the best practice to discuss a few points well, and then have the patient return later for more knowledge reinforcement and evaluation?¹⁰ This return date should not solely be gauged by illness severity but by an estimation of the length of time that spans that period during which the patient will likely stop adhering to the recommended regimen.

Our group has employed the practice of slowing down and listening to patients better, expressing thought concisely and precisely, and then reinforcing what was said with written materials. The use of the “teach-back” technique here is critical and should be employed during crucial conversations. This technique engages patients as active participants in their care, which includes conjoint decision-making regarding diagnostics and therapeutics.

Lastly, we have fomented patient education at all costs. The cumulation of these efforts has produced greater patient satisfaction and improved outcomes. In the end, as von Goethe points out: "Knowing is not enough; we must apply. Willing is not enough; we must do." Just like the flamenco guitar-maker, we too must slow down to speed up.

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