Good morning.

Today, I have been asked to present on **the role of Instructional Design for enhancing distance pharmacy education**. For those both here and in remote locations in Bryan/College Station, Corpus Christi, Houston, McAllen, Round Rock, and Temple, I would like to open by thanking each of you for taking time out of your respective schedules today to be here or "here." As a means of introduction, here is a bit of background information on me, your presenter.

My name is Dale Seiler, and I am a resident of Schertz, Texas, a suburb of San Antonio. Because Texas A&M San Antonio was not, in the early 2000s, offering undergraduate degrees in English, I attended a local university that was, UT San Antonio, graduating in 2003, and earning my English 6–12 teaching certificate from UTSA in 2004. For the past ten years, I have been teaching English, first middle and then high school, in the area. In addition to teaching, I have served as a technology resource for school and district, both in Harlandale ISD and Schertz-Cibolo-Universal City ISD in a similar capacity as the position here at A&M Kingsville. As a technology resource, I help troubleshoot hardware and software issues, as well as assist my colleagues in integrating technology solutions as a part of their curriculum; most recently, this has included a pilot program for students to bring their own devices (or BYOD; BeYOnD, in my district) for academic instruction and working with a teacher or two in the math department on flipped learning environments.

In 2010, I entered a graduate program at UT San Antonio to obtain a degree in instructional technology. However, because of the cost & structure of the program which necessitated driving to & from the campus multiple times per week, I opted to enroll in an online graduate program through Texas A&M University Kingsville. I graduated this past August. Since, I have found a place on the District's Digital Learning Committee working on the aforementioned BeYOnD initiative as a pilot classroom, which is slated to go campus-wide this coming fall and District-wide the following year. Helping people understand more about how technology can make their lives easier is something I enjoy, and I consider myself fortunate to have been able to help both friends and colleagues make effective use of available tools at work and at play.

Leadership in my school district subscribes to Stephen Covey school of *The Seven Habits of Highly Effective People*. There is some credence in what Covey has to say on effectiveness,

habit number two, in particular: Begin with the end in mind. While excellence is intended to be a journey, rather than a destination, not having a plan before beginning makes the journey either more difficult or not possible at all. Good design can more easily lead to good results. This has been proven to me personally in everything from racing (I am a competitive runner, cyclist, and triathlete in my "free" time) to cooking dinner, as well as professionally, which includes crafting unit and lesson plans for instruction of students in my AP and grade-level English classes – including which technologies to incorporate in those plans or even if technology (in the contemporary sense) will be utilized.

Distance learning has a storied history in both the United States and abroad, including correspondence courses by snail mail (my father-in-law earned both his masters' degrees in this fashion) and advancing technologies from the twentieth and now twenty-first centuries. However, as Mayer (2009) notes in his second edition text *Multimedia Learning*, the focus should be on **"promoting human cognition"** (n.p.) rather than on one technology trend or another. He goes on to say that "when [the] goal is 'to provide access to technology'" there is a "100-year history of failure." Tech-centered approaches are alluring to the digital natives found in classrooms from college back to kindergarten; learning, though, should never fail to recognize the learner and the learned. Ideally, this is where instructional design comes in and its importance is underscored.

Over the past decade, both student enrollment and growth in schools of pharmacy have experienced "unprecedented growth" (Nappi, 2013, p. 1) in the United States. In that same time period, "rapid advances in technology [and] shifting student demographics" (Cohen, 2009, p. 2) were named among top sources of tension from the dean of The University of Iowa's College of Pharmacy. Because students learn in ways which likely differ drastically from those learned and subsequently taught by their instructors, likely including you and me, "the necessity of faculty training in distance learning methods" has been recognized by the Accreditation Council on Pharmacy Education (ACPE) as early as February of 2006 (LeBlanc, Pruchnicki, Rohdieck, Khurma, Dasta, 2007, p. 2). Because the "interpretation and application of [ACPE's] *Standards* may be affected by the method of delivery" ("Distance Learning," 2014, n.p.), a helping hand in the form of an instructional designer can assist course instructors with this interpretation and application by creating a **scaffold**, in much the same fashion that assists students in pharmacy and non-pharmacy learning environments alike.

Ge, Planas, and Er (2010) laud the scaffolding approach, as it "enables learners to bridge the gaps between their current abilities and the intended goals" (p. 32), although, in context, the Ge/Planas/Er approach to scaffolding is applied to introducing pharmacy students to project-based learning (PBL) – something with which they are likely unfamiliar. Having "human resources" (Ge, Planas, Er, 2010, p. 32) at their beck and call enables either students or instructors to more confidently venture into untested or otherwise unfamiliar waters, be it PBL, learning management software, such as Blackboard, or creating vodcasts – video lectures – for electronic distribution for learners who may be in class or in another area code. Even nursing instructors who, as argued by Leblanc et al. (2007), are those in "the healthcare field most experienced in distance education practices" are also those who rank highest their needs for training to include "acquiring technology skills and faculty mentoring" (p. 2).

The role of instructional designer, however, is not just to be the local version of the Nerd Herd or Geek Squad, tending to any technical issues that "break something." Rather, just as "the primary responsibility in the practice of pharmaceutical care is for practitioners to help patients optimally manage their medications" (Droege, 2004, p. 130), it is the role of the instructional designer to help the instructor *make something*: Assist in optimally designing courses through assorted tools – which should be more than just some gadget or other.

One effective method of instructional systems development (ISD) dates back to 1989, and is credited to Hannum and Hansen. Now referred to as the **ADDIE** method, this ISD consists of five phases. From Droege (2004, p. 130):

1. Analysis (specific information needed in order to develop effective learning interventions)
2. Design (provides opportunity to create learning materials)
3. Development (instructional materials and directions are written and produced)
4. Implementation (provides opportunity to roll out instructional program)
5. Evaluation (examines effectiveness of the learning solution based on criteria determined through phases 1—4)

One of the most enjoyable projects I constructed as a graduate student here was developed using the ADDIE method, focusing on sharing the road with cyclists. Inspired after a friend and fellow triathlete, Monica Caban, was struck by a motorist in San Antonio, an informal **analysis** towards negative attitudes towards cyclists revealed that some motorists genuinely don't "see"

cyclists; they see something in their way. A means of attempting to alter this perception was **designed** to demonstrate *who* that cyclist was when they were not atop their bike. Materials were **developed** in the forms of “slides” which showed a photograph of friends and who they were and what they “did” when not riding a bike; additionally local police shot video footage of the proper way of passing cyclists in a variety of road and traffic conditions. Unfortunately, **implementation** and **evaluation** were little more than planned in the scope of the project; i.e., I simply did not have the time to take the project beyond the requirements of the course here at A&M Kingsville during the Fall of 2012.

Effective design of instruction “typically leads to higher learning achievement and lower per student costs” (Hannum and Hansen, 1989, as cited in Droege, 2004, p. 130), goals for which any learning environment should strive. Use of methods such as ADDIE in a constructivist or PBL environment *can* have an impact that is both rapid and far-reaching. While some approaches, such as flipped classrooms—where students view lectures and such outside of the classroom—have produced “little empirical evidence concerning[...]efficacy” for “improv[ing] student performance in pharmacy education” (Pierce and Fox, 2012, p. 1). Pierce and Fox (2012) do go on to note that because flipped environments do “[engender] a more active, student-centered lecture style[...]further research is needed to continue the investigation” (p. 5). Though not in pharmacy, a colleague at the high school where I teach has been experimenting with a flipped classroom in her pre-AP calculus class this year and has been pleased with what she has seen in terms of student participation and unit tests; scores are reported to be up and excuses for not doing work down.

Ms. Barnes, my colleague at Steele working with a flipped environment, did not realize she needed to make use of the ADDIE method, so, when things were a little rocky at the start—both for her and for her students—she asked for some advice. Ms. Barnes had done an informal assessment of her needs and student needs prior to beginning but did not go too far past the notion of simply putting lecture notes on YouTube; the actual design before development was where she was stuck. After assessing what her needs were, I shared with her an idea for creating storyboards for her lectures, in much the same fashion that television and movies create storyboard to guide cinematography. In this case, the storyboard was little more than a table in a Microsoft Word document; one cell in one column indicated what would be screen, while an adjacent cell in the next column would be her script. Granted, there are other programs

and apps for creating higher quality, visually-engaging storyboards, but in the case of a secondary classroom teacher who simply needed to plan out the basic direction of a lecture, there proved to be no harm in keeping things simple. From there, Ms. Barnes was able to develop the materials she and her students would need to ensure necessary information was relayed in its implementation. While there is no hard, scientific data to which Pierce and Fox would likely be after, the number of students claiming they simply don't understand the material has dropped drastically (Ms. Barnes said she now has, maybe, three students seeking additional assistance, versus a more traditional thirty), and, again, test scores are up; excuses, down.

In the early days of the World Wide Web, technology seemed to revamp itself every six months or so. Twenty years on, six months is a near-eternity. Because of the pace at which technology advances—pharmacy and medicine, too—"curricular design and innovation are expected to evolve" (Poirer, Crouch, Hak, MacKinnon, Mehvar, Monk-Tutor, 2004, p. 4), keeping what's important inside the classroom in sync with everything outside. Doing so is easier than ever; where in 2004, with use of "a computer, telephone line and modem, persons can now access seemingly unlimited amounts of information about any topic at anytime from anywhere" (Droege, p. 1); 2014, it can be done with a smartphone. Or a pair of glasses. Or maybe even a watch.

To echo from earlier, having what Ge, Planas, and Er (2010) dubbed "human resources" at one's beck and call enables those who need them to do more with an ever-expanding arsenal of resources for our ever-shrinking world. I would be honored to be one such resource for the Rangel College of Pharmacy at Texas A&M University Kingsville. Serving in a similar capacity as a technology resource at Steele High School and Harlandale Middle School over the past ten years has enabled me to assist my colleagues in extending their ability to reach and teach the changing face of students and the changing face of learning.

No doubt, there are **challenges** beyond the scope of learning to navigate the digital realm. For me, time has been the biggest challenge. Once I have a project and a plan, I like to run with it, and, regrettably, there simply are not enough hours in the day for me to be able to adequately assist those who need the assistance, while at the same time teaching my own classes–to say nothing of taking care of my family. For example, assisting my colleagues in the District-mandated revamp of teacher websites – and keep their teacher websites up-to-date has taken a toll on my own teacher website; apart from the assignments calendar, updates have

been few and far between. The school website and Twitter feed, however, have never looked better. But more on that in a bit.

Another challenge is staying up-to-speed on what's new, what's worth trying, and what's to be avoided. Staying current with technologies and trends can, itself, be a full time job. But, since all of us here have one or more of those, we can make use of both traditional and, relatively speaking, cutting edge tools. I still rely on word of mouth, hearing from colleagues in passing or by the coffee pot either suggestions or inquiries about something they've heard or read or asking what I use to accomplish a task. What I don't know, I simply say that I don't but throw in that I will try find out for them, which creates a win-win situation for us both: There's opportunity for one more tool in my toolbox and potentially one more in theirs. So where to go for information outside of the school? There are the traditional methods, such as journals and email forwards and membership in professional organizations. At present, I belong only to Texas Computer Educator's Association (TCEA), which sends out weekly newsletters with upcoming trends, as well as professional development opportunities, such as webinars. TCEA, ISTE, and others also have useful presences on social media.

Granted, social media has been trivialized, demonized, or both by many as a waste of bandwidth. But, just like the company one keeps offline, the company one keeps *online* can determine how useful or useless social media can be. Twitter has probably been the single most powerful tool I've added to my toolbox. It has been instrumental in the creation of a **professional learning network** (PLN) of individuals and organizations (including TCEA, ISTE, Edutopia, and November Learning) who keep me abreast of what's going on in their classrooms and could be going on in mine. A Twitter account for my school keeps parents, students, and alumni informed of the goings on and student successes at Steele High School. One for my classroom, seeks to hear what students learned on any given day and also share what I learned, regardless of where the learning occurred. Learning, after all, is not confined to a timespan of X number of minutes for a class period, nor is it confined to the four walls of a room.

Prior to becoming a classroom teacher, I was in the sales and service game for computers and networking equipment. During my dozen or so years at this company, I learned how to explain complicated things in as simplistic a manner as was needed in order to get the client what he or she wanted in order to accomplish their goal; again, beginning with the end in mind. Much of this

was done over a telephone connection, and without video conferencing, so I guess distance learning is something I've been doing since my late teens. Similarly, I have worked with my colleagues at the secondary level to help them better understand how incorporating key solutions helps them and helps their students learn and complete course objectives. In essence, I'm selling a solution. It's never a high-pressure sale, for regardless of the arena or locale, helping others discover and incorporate solutions – learning, if you will – is all about building rapport and relationships.

This concludes my planned presentation. Thank you for your time and attention, especially to those in the audience viewing from afar. If there are any questions, I will answer them to the best of my ability, in order to continue building rapport – relationships – on **the role of Instructional Design** in enhancing distance pharmacy education.

A transcript and slides of this presentation, including references for cited studies, is available online at this URL. Alternatively, these documents can be shared through Google Drive or Google Docs. Again, thank you.

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